

An Analysis of Innovative Cloud Model as Bridging the Gap between Physical and Virtualized Business Environments: The Customer Perspective

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Abstract—This study aims to investigate and explore the underlying causes of security concerns of customers emerged when WHSmith transformed its physical system to virtualized business model through NetSuite. NetSuite is essentially fully integrated software which helps transforming the physical system to virtualized business model. Modern organisations are moving away from traditional business models to cloud based models and consequently it is expected to have a better, secure and innovative environment for customers. The vital issue of the modern age race is the security when transforming virtualized through cloud based models and designers of interactive systems often misunderstand privacy and even often ignore it, thus causing concerns for users.

The content analysis approach is being used to collect the qualitative data from 120 online bloggers including TRUSTPILOT. The results and finding provide useful new insights into the nature and form of security concerns of online users after they have used the WHSmith services offered online through their website. Findings have theoretical as well as practical implications for the successful adoption of cloud computing Business-to-Business model and similar systems.

Keywords—Innovation, virtualization, cloud computing, organizational flexibility.

I. INTRODUCTION

THE abilities to meet challenges and to adapt to changes are classified as key to success for both physical and virtualized business contexts [2]. There is a growing realization that businesses can operate more effectively by going virtual and being innovative. The innovation in virtual models has changed the manner of delivering the services to clients in relation to low-cost and rapid time-to-market demands. The continuous growth in innovative models has encouraged organizations to bridge the gap between physical and virtual channels of business environments by eliminating both space and time barriers [11]. Despite the sizable body of literature on going virtual, little attention has been paid to reviewing the existing innovative models from security perspectives [11].

The current research looks into the innovative B2B business model introduced by WHSmith in collaboration with NetSuite to help its franchises manage their businesses. NetSuite is essentially a fully integrated ERP and CRM software system and this category of software is the primary systems that companies use to manage the transactions within their

business. Given that NetSuite is a fully-integrated system, it essentially takes care of the entire transaction lifecycle. This lifecycle consists of the marketing side: lead generation, lead prospecting, and communications around products. It also consists of the sales process where there are follow up communications, estimates, etc. These are essentially the functions of a CRM system.

WHSmith has allowed its franchises to fully automate processes, getting rid of laborious tasks such as faxing and emailing orders and thereby improving the customer and franchisee experience. Despite the potential gains achieved from the Cloud computing, the security is still questionable in WHSmith going virtual. The innovation model has become more complicated as have security concerns. We will investigate the problem from the Cloud architecture perspective, the Cloud offered characteristics perspective and the Cloud service delivery models perspective. This study will offer the knowledge of innovation in virtualization ranging from its definition to structured analysis.

This paper is structured into seven sections. Section I provides introduction, Section II discusses the literature review of cloud models, privacy and security. Section III discusses the data adoption by NetSuite, Section IV discusses research methodology, and Section V discusses the Adoption of cloud model, whereas data analysis and findings are presented in Section VI. Finally, Section VII presents the discussions and implications and Section VIII concludes the conclusion and further research are discussed.

II. LITERATURE REVIEW

Businesses are becoming increasingly aware of how they can perform more profitably by moving from a physical environment to a virtualized environment. A virtualized environment provides the ability to run several operating systems and applications via one physical server [40]. With each move towards Cloud computing, businesses like WHSmith increase IT optimization. The technology allows businesses to reduce costs; e.g. hardware, maintenance, staff and equipment as well as improving scalability, flexibility and efficiency [1], [10]. Cloud computing is an internet based computing model that has altered how businesses like WHSmith access, manage and use computing resources [34].

Computing resources such as applications, software, servers are delivered via internet rather than on a local server or hard drive [34]. WHSmith simply performs business processes over the internet rather than on their computer [33]. The Cloud

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model can be separated into two types, service and deployment [34].



Fig. 1 Graphical model of 3 cloud system types and the relationship between them [31]

This study will focus on three deployment models available which focuses on type of Cloud environment [38]. This includes:

- **Private cloud:** An internal Cloud environment devoted to one organisation like WHSmith only [30].
- **Public cloud:** An external Cloud where applications are provided to users such as WHSmith franchisees in the form of web services [30]. This offers good value in terms of providing IT solutions [31]. Applications could include SuiteCommerce and Customer Relationship Management (CRM).
- **Hybrid cloud:** A mixture of Cloud deployment models due to varied needs of a business [31]. The idea behind this is that a business like WHSmith would keep critical business data within the private cloud and less at risk data in the Public Cloud [31].

It also has three service models which focus on how services are provided to users, they are:

- **Software as a Service (SaaS):** The ability for WHSmith and franchisees to use shared applications on the cloud, for example CRM and NetSuite SuiteCommerce [28].
- **Infrastructure as a Service (IaaS):** Shared IT resources to be managed as a service including operating system, network [26].
- **Platform as a Service (PaaS):** An environment for the development of applications [26].

A. Public Clouds

Public Clouds, are as described as the name suggests: open to the public to use, technically no different in equipment to Private or Hybrid Clouds, however the differences are with the provision of privacy and security of data, applications and resources [24]. A Public Cloud is generally referred to when the full set of shared services are provided to multiple tenants offsite. Due to the multi-tenancy to unknown users, it may difficult to apply comprehensive security measures therefore security vulnerabilities may be introduced. Public Clouds are best suited to the deployment of standard software on a large scale, where minimal configuration and changes are required. Public Clouds are usually scalable to meet the variable nature of public demands [31], for example Amazon, Microsoft and Google provide public access to their Cloud infrastructure and services on demand, with the supplier in control and taking full responsibility for of all the security provisioning.

In our case study, although the application data must be secure and private, there are no regulator bodies or compliance standards to be met as there with such as patient record, student records etc. Also in our case study there will be no applications developments or test scenarios to be run that will comprise the Public Cloud provision.

B. Private Clouds

The Private Cloud is described as a sole user provisioned infrastructure operated completely for a specific organisation [30]. The equipment can be housed locally or remotely and it can be managed and operated by local staff or 3rd part staff housed off site. Due to the controls exercised over the equipment and staff, there are increased levels of confidence in the security and privacy. However, due to equipment and staffing, Private Clouds require major sums of CAPEX investment as well as OPEX costs for staff and regular upgrading and maintenance of equipment [30]. This high investment cost could lead to losing some of the benefits of a Cloud provision as constraints may be applied when the business models are reviewed and budget cuts are made. However, the over benefits of having local control and the ability to modify applications, create new applications and the ability go the quickly test and release security patches, would be advantageous for users where regular changes are needed such as healthcare and financial sectors where data protection, legislation or customer requirements may force action to be taken [34].

C. Hybrid Clouds

The Hybrid Cloud is described as a combination of Public Clouds and Private Clouds [36]. While the constituent Clouds remain unique entities they are bound together in a hybrid structure [3]. By using the best features of both Private and Public, it is possible for users to build a set of services that can scale as well as secure, part managed local and by 3rd party provision. This model is ideal for sector such as education, where the data is held and manipulated locally (e.g. student records) and the standard services can be serviced remotely (e.g. email). The security strategy for all aspects being developed locally and implemented on both private and the public clouds [12].

TABLE I
CLOUD SERVICE DELIVERY MODELS PERSPECTIVE [30]

Characteristics	Public Cloud	Private Cloud
Initial Cost	Low	High
Running Cost	Variable	Variable
Customization	No	Yes
Privacy	No	Yes
Security	Problematic	Manageable
Regulation	Problematic	Manageable
Single Sign On	No	Yes
Scalability	Simple	Difficult

Cloud architecture provides redundancy; in the event of local outage some services can still be provided. Also if the Public Cloud provides scaling, it will be possible to expand

the usage for short time whilst the Private Cloud is in recover phase. As with all Public Clouds, there is an element of security risk with this architecture therefore all critical actions should be kept to the private cloud due to tighter controls on security, the below table from provides a compassion of Cloud architecture [14].

D. Software-as-a-Service (SaaS)

It is the delivery perspective where the Cloud provider delivers a platform usually with installed Operating Systems (OS), ready for user's development team to install, run and maintain its applications, an example of PaaS provision is Microsoft Azure. These platforms are agile and can adapt to user requirements on demand. Most importantly the responsibility for OS patching and OS security is managed by the Cloud provider.

E. Platform-as-a-Service (PaaS)

It is the delivery perspective where the cloud provider delivers a platform usually with installed Operating Systems (OS), ready for user's development team to install, run and maintain its applications, one such PaaS provision is Microsoft Azure. These platforms are agile and can adapt to user requirements on demand. Most importantly the responsibility for OS patching and OS security is managed by the cloud provider.

F. Infrastructure-as-a-Service (IaaS)

In this delivery perspective, the user is providing with 2 options, either a set of physical (also termed bare metal) or virtual machines (VMs). These options are facilitated by hypervisors, which are a set of software that establishes, manages and maintains the virtualisation of physical resources such as servers and storage [26]. In the case of bare metal infrastructure, the hypervisor will create VMs on which the Operating System can be installed and brought up as required, with its application, users and appropriate security regime. In the case of a Virtual Machine Infrastructure the hypervisor itself, will create further VMs on which the Operating System can be installed and brought up as required, with its application, users and appropriate security regime, however, in this case there will be restrictions placed by the higher VM [25], [27]. In both cases full responsivity for applications and security for the resource allocation will be passed to user, hence appropriate number and type of IT staff will be needed to implement and maintain the infrastructure.

G. Multi-Tenancy

Multi-tenancy would occur in the WHSmith system as many franchisees were using the same common server [39]. Rapid elasticity would allow WHSmith to scale resources up or down depending on demand on the system [28]. The solution is less complex and offers a simple solution to companies like WHSmith and its franchises allowing them to grow at a much quicker rate. The services provided by Cloud computing can be accessed via multiple devices (mobile, tablet, laptop, desktop) including NetSuite SuiteCommerce which also means that they can be accessed anywhere at any

time, suitable for a business like WHSmith who have franchisees globally [2]. WHSmith and its franchisees are able to collaborate easily over different regions [29]. This model means that upfront costs such as that for hardware are reduced [3]. WHSmith are also able to scale services up or down depending on demand [35]. This is a greener solution by only using what is needed in terms of space, power and resources [35].

Other companies who have adopted a similar model to WHSmith include Trunki, a manufacturer and retailer of travel products for children [13], as well as baby stroller and products manufacturer, Maclaren [13]. Both share a common motivation to use the model in order to streamline business processes [13]. In addition, it reduces the complexity of their previous systems and in turn reducing costs [13].

By consolidating into one solution, it has allowed both Chaudhari and Rumale [11] to remain competitive in the world of business, with the ability to grow at a quicker pace globally due to more efficient processes when it comes to email and orders.

This Cloud based service means the system can be used more efficiently by franchisees and WHSmith to manage business processes and operations [25]. And with a less complex system, it allows the business to react much quicker, improving the experience for staff, franchisees, and customers and with this rapid implementation; it allows them to grow at a quicker rate globally [28]. Despite the advantages discussed, there are several drawbacks with the model adopted by WHSmith, the main issue being cost and security.

The Cloud computing solution may appear to reduce costs within WHSmith however these fixed cost savings have to be set against variable cost savings and maintenance costs [27]. Additionally, if they find that features they require are missing, they will have to incur further charges for customizing to include what are needed by WHSmith and the franchisees [3]. Security is a major concern in relation to the Cloud computing model used, therefore WHSmith need to continually take into careful consideration what service provider they use and if they are able to keep information on customers secure [3]. Security issues include hacking, privacy and ownership of the data stored [26]. As the model is reliant on internet connection, if there is low to no connection, WHSmith and franchisees would struggle to access the services that they rely on.

III. HOW THAT ADOPTION LEADS TO SOME SECURITY ISSUES?

A. Consumer Perspective

According to Varsha & Whadhwal [41] adapting to virtual Cloud technologies raises security concerns depending on the type of Cloud model deployed and this would determine what security measures need to be implement. An Analysis by Subashini and Kavitha [36] of the service delivery models security discussed the security issues in various models IaaS, PaaS and SaaS they analysed, and this highlighted a number of potential issues in the SaaS model.

Fernandes et al. [14] stated that using a Public Cloud owned by a Cloud provider would service many customers allowing access in multiple locations using web interfaces. This would be riskier than other deployment models as resources are at an off-site location and can be subject to malicious activities. These models also tend to adopt a low cost (pay-per-use) approach hence service level agreements must be well detailed and analysed between the customer and provider. Using a Private Cloud with a protective firewall infrastructure and placing it within an organisations network would make the

administrating much easier and to identify security responsibilities. Private clouds require greater budgets and skilled IT technicians to manage and to monitor the system. Hashemi [21] emphasizes that Cloud computing has unique attributes that require risk assessment in areas such as availability and reliability issues, data integrity, recovery, privacy and auditing. Off-site Private Clouds are growing as specified by McKendrick [24] to overcome sharing and compliance issues.

< Cloud Deployment Models >

Security Requirements	Public			Private			Hybrid			VPC		
Identification and Authentication	✓	-	✓	✓	-	✓	-	-	✓	-	-	✓
Authorization	✓	✓	✓	-	-	✓	-	-	✓	-	-	✓
Confidentiality	-	-	✓	-	✓	✓	-	-	✓	-	-	-
Integrity	✓	-	✓	-	✓	✓	✓	✓	✓	-	-	-
Non-repudiation	-	-	✓	-	-	✓	-	-	-	-	-	-
Availability	✓	✓	-	✓	✓	✓	-	-	-	-	-	✓
	IaaS	PaaS	SaaS	IaaS	PaaS	SaaS	IaaS	PaaS	SaaS	IaaS	PaaS	SaaS

< Service Delivery Models >

Fig. 2 Cloud Computing Deployment Model [41]

B. Business Perspective

Zissis [13] identifies that trust in a Cloud environment would depend on the model deployed. An expectation would be that a consumer believes that the provider will behave exactly as expected and required. In a Cloud data would be out of the owners control and would be delegated to the service provider to enforce an adherent security policy that assures appropriate security checks and actions are being performed. Confidentiality, integrity and availability are key aspects that can be used to build secure systems for Cloud infrastructures.

Confidentiality and privacy issues refers authorized users having fears over the capacity to access protected data, especially due to the greater number of clients and increasing number of points of access. These concerns regarding the issues of multi-tenancy data confidentiality, application security and privacy is supported by the Cloud Security Alliance [10]. The Cloud can also present a number of legal issues relating to privacy issues especially if the providers' servers are located in Europe, America or elsewhere. Under European laws organizations are required to know where personal data is at all times. One of the key areas relating to information security is integrity so that only authorized users can access data thus preventing any unauthorized deletion or modification.

IV. NETSUITE AND CLOUD BASED INNOVATIVE BUSINESS MODEL

NetSuite goes beyond the CRM and integrates with the ERP side. This is the fulfilment side of the business. From here, an order is created and tracked, and a business has a promise to fulfil that order. NetSuite's business management software

tracks that order if it's for physical goods, or, if it's a service, the time that it takes for individuals to fulfil that service. It takes the request to be paid and produces follow up communications. All of this in turn feeds back into the opportunities that will represent new sales. Ultimately, it tracks and accounts.

The key difference is that it's all done through a web browser. It is offered in a way that you do not need to buy any software. That means you not be burdened with traditional fixed costs on the IT side, such as the care of hardware, operating systems, backups and databases. All of these things are taken care of because NetSuite is offered as a subscription service. NetSuite provides and handles all of these functions. Today, it doesn't make sense to buy software relative to the great offers in the "Cloud". With NetSuite, a company is instantly global, because it can support multiple languages, currencies, and a company can run multiple businesses around the world using one integrated system. Essentially, it is for companies that are committed to lowering their costs and extending their reach in the marketplace, and looking to do so economically while ensuring rapid growth.

V. METHODOLOGY

The case study approach is adopted in this research to analyses and investigates the implementation of an innovative Cloud model to form a virtualized business environment which automates its franchises.

The research is specifically exploring the concerns raised by customers about WHSMITH since new Cloud based model is implemented through NetSuite. The users of virtual communities identified the data mishandling by WHSMITH

and immediately exploited the information on various online communities. The theme of the research is to explore the strategies WHSMITH could have adopted to minimize the risks of negative feedback and what methods could have been used to ensure the data security without harming the business performance.

The best way of conducting the social science research is through a case study method [5], [43]. This method ranges from a single person to a group and not limited to institution, policy or an event. The case study method is used for this research due to its ability to conduct in-depth examinations of the events which are not under the investigator's control [7]. This method is also very useful when conducting the research on a real-life based context which leads to the questions e.g. what was the result, what was the decision, how those decisions were implemented [4]?

Conducting research through a case study method is classified as empirical method or as exploratory which uses evidence collected from various sources based on their weaknesses and strengths [6]. The weaknesses and strengths are not just limited to the direct participant's observations but also include archival records, documentation, physical artefacts and interviews [9]. Using a methodology based upon case study approach is very helpful for not only finding a solution for an existing issue but also for conducting new research [5]. The case study approach provides insight into problems where insufficient research is conducted and also helps to fill the gap in the existing literature.

The platforms rendered by virtual communities have been used by various organisations to adopt feedback about their products and services. Along with the time and evolution of various Cloud based business models, it has generated a concept of data monitoring over the web [16]. Various happy or unhappy customers leave their feedback and it was very difficult for the businesses to establish those facts considered helpful for the business growth. The research methodology based on a case study approach can be used to find out how organisations can minimize the risks of negative feedback left on various virtual communities after the implementation of new virtualized models [8].

In a case study based research approach, it is very important to consider the strategies adopted by the businesses to go virtual for transactions along with the integration or all franchises to coordinate with each other [22]; this would help to avoid negative impacts on the business performances. This process starts with managing more dedicated links to various virtual communities and using social data monitoring tools to find out the feedback searching through specific words. In the current scenario where various virtual communities are used to post feedbacks about organisations, it is also important to protect the informed consent and privacy of the customers.

Feedback about WHSMITH was collected online from various virtual communities, blogging web sites and forums. Altogether there were 120 blog users' feedbacks collected and content analysis approach was used to analyse the qualitative data. The term content analyses were first coined in early 1940's and cited within the mass communication literature. At

the earlier stage the content analysis was used for the quantification of the data whereas for the last decade, it is mainly used for the qualitative approach.

The content analysis approach is best used where behaviors and patterns are quite evident from the data. It is also used in situations of latent content where data interpretation requires appropriate evidence in meanings and relations [23].

In this paper, the research is not only to observe the causes of the negative feedbacks but also its impact on business performances, so the latent content analysis approach will be used. For example, users of various communities have shown the similar concerns of the lack of response from website as well as money deducted from their accounts through multiple transactions in WHSMITH and its availability on social media and virtual communities but no one has commented on why they think that the privacy is important for them. This may have resulted negatively on WHSMITH business performance. The content analysis is quite a flexible approach which could be used not only deductively but also inductively [15]. The theme behind deductive approach is to move from general to specific whereas in inductive approach it moves from specific to general [38].

The deductive approach is used in research when knowledge is available about the existing body and inductive approach is used when enough knowledge is unavailable for a particular behavior or phenomenon [19], [37]. The inductive approach is being used in this research because of the underlying reasons and concerns of various users raised due to certain changes in WHSMITH system has caused data mismanagement on its newly implemented virtual business model [18].

In a model presented by Elo and Kynga, [17] content analysis involves three steps which leads to data collection through systematic approach, themes generation, abstraction and categorization.

VI. DATA ANALYSIS AND FINDING

The preparation phase starts with identifying the unit of analysis and is derived from – key-words-in-context KWIC [32]. The word count frequencies and tag cloud are used to identify the main areas to focus in addition to going over the data manually and generating notes for the main topics emerging.

The word tree maps are also used to probe main areas of interests emerging to see how they are related to other areas of interest for example Virtualization key word shows links to, for example, innovation, privacy invasion and Cloud. Similarly, content analysis is carried out for other key words at initial stage. The instance count for key words was Virtual: 380, Innovation: 763, Business Model: 594, Physical: 482, Cloud: 158, Security: 350 resulting in sufficiently large base for open coding. Open coding was used as the first stage and enabled categorization and grouping of related themes leading to abstraction of ideas and conceptual formation of the topic under investigation.

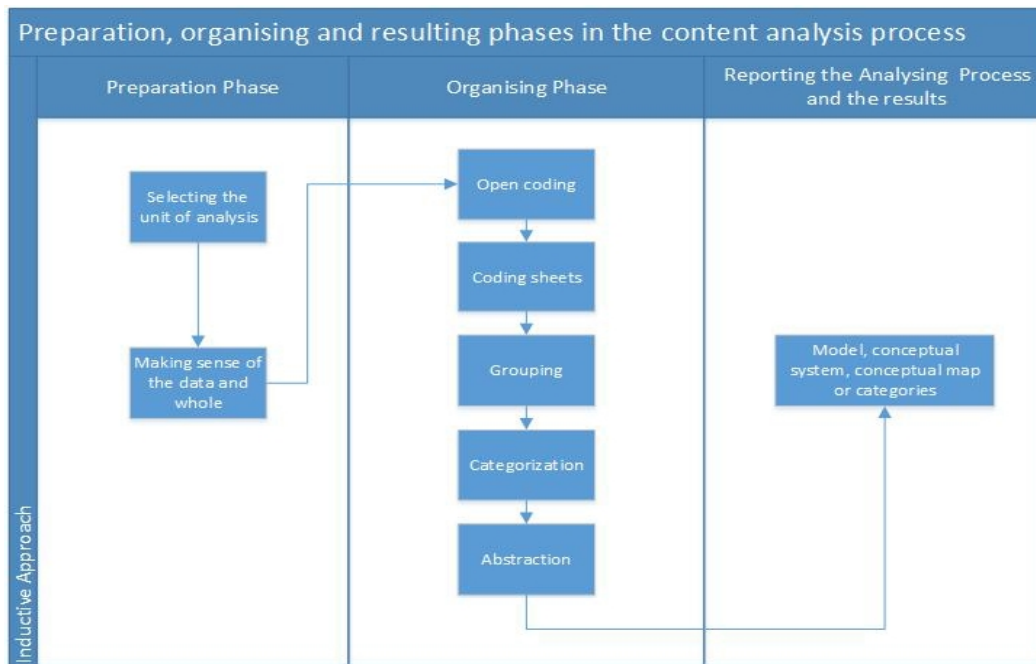


Fig. 3 Inductive Content Analysis (Adapted from [17])

TABLE II
THEME FROM CONTENT ANALYSIS SHOWING UNDERLYING CAUSES SECURITY CONCERNS

Theme				
Anxiety Over Use of New Innovative Model				
Category	Anxiety over potential Technological misuse.	Design and Layout	Anxiety over Customer Support	Self-efficacy and technology comfort
Sub-category	Too Slow	Sense of Insecurity		Anxiety over interaction with unfamiliar online technology
Codes	<p>I used the WHSmith website (which by the way is a pretty awful outdated affair riddled with bugs and dead links) to price up a replacement e-reader for my trusty old Sony one that gave up the ghost after many years of service. I saw the one I wanted and thought I'd just pop into town to pick one up in store. This was a mistake as the WHSmith online prices do not reflect in store prices. I then returned home and tried to order for click and collect; knowing that the item I want is available in my local store. This was not possible, so I thought I'd select the 'deliver to store' option instead. This was a big mistake. It took 2 working days just to dispatch the item. There is no email to tell you when your item will be available to collect, so you either have to wander in and hope it's there, or try to phone.</p>	<p>I tried to order a diary off the WH Smith website, and the amount I had to pay was £5.99 + £3.99 First Class delivery = £9.98</p> <p>However, after I entered the delivery address, billing address etc. to complete the purchase, I kept getting a notice on the website saying, "PLEASE CORRECT THE FOLLOWING TO CONTINUE - Unfortunately there has been a problem processing the card specified, or your address is incorrect. Please double check...make necessary corrections...try again..."</p> <p>So I tried around 3 times more, but it did not work (even though my card worked fine for some online shopping last month) and I never got through to the next stage of the payment process. Naturally, I did not get an order confirmation email as I assume the order never went through due to this "problem".</p> <p>Yet, when I checked my Bank account, it records 3 transactions with WH Smith for the amount of £9.98 (altogether £29.94 had left my Bank account).</p> <p>I asked the Bank if they could cancel these transactions and they instructed me to contact WH Smith for a refund, as the problem was on the merchant side and the Bank was unable to do anything.</p>	<p>Ordered a book on Wed 26th August for delivery into a local store, apparently half price online price. It is now Tues 1st Sept and stills no book even though email received on Fri 28th stated it had been dispatched. Went into store today and they had plenty of copies on the shelf at the discounted price but I can't have one of those, mine will be in on Thurs or Fri. Customer service phone call no help whatsoever. I sense the end can't be far away treating customers like this.</p>	<p>Ordered a book on Wed 26th August for delivery into a local store, apparently half price online price. It is now Tues 1st Sept and stills no book even though email received on Fri 28th stated it had been dispatched. Went into store today and they had plenty of copies on the shelf at the discounted price but I can't have one of those, mine will be in on Thurs or Fri. Customer service phone call no help whatsoever. I sense the end can't be far away treating customers like this.</p>

TABLE III
THEME FROM CONTENT ANALYSIS SHOWING USER UN-SATISFACTION AND UNDERLYING CAUSES

Theme	User un-satisfaction with perceive lack of implementing the correct B2B cloud model	
Category	Anxiety over Placed orders using new online technology	
Sub-category	No Help	Anxiety over hardware costs and risks
Codes	<p><i>Never have I experienced such shocking customer service with a website in all my life. I ordered a Sheaffer fountain pen as a birthday present over a WEEK ago and I haven't even had an email to say it's been dispatched?! Where is my package?!!! And why can't I get help from anyone? I have sent various polite emails and rang customer service and I've been put on hold for ages not being able to get past the on hold music! I was so excited to receive this as it was for a 21st birthday present for someone special and I feel very let down, I will not order from WHSmith again. They should be ashamed of themselves and take note of these reviews which show how downhill it has gone it is if they want to keep some if any of the few loyal customers it still has !</i></p>	<p><i>The funny thing is, I wrote to both their Customer Service contacts and haven't received a response, and it's been a week! Truly shocked and disappointed in the glitches on their website and non-responsive "Customer Service" - any other shopping site has always replied within a couple of working days!</i></p> <p><i>It's a shame because we always buy this particular diary from them every year, and I've never experienced an issue in store, but we've had to use their website this year due to being overseas... and then this happens!</i></p>

The main point of discussion in the data was the concerns for privacy with the induction of new transmission of the whole physical system of WHSmith onto virtual using NetSuite. The underlying causes for this privacy concern were not evident directly from the data as if a question is asked to a person whether privacy is important to them then their answer will overwhelmingly be yes, although if it is asked what do they mean by privacy then their answers will vary based on the context through which they will define privacy. The latent thematic analysis tried to probe the underlying meaning and causes for certain phenomenon or behavior.

Our results suggest that users of this new virtualized system showed anxiety for the use of these services when it was used as the personal details scanning tool. The potential of misuse of this technology caused anxiety in the users and it was compounded by the fact that their personal detailed data coupled with absolutely no response could be compromised. The perceived invasion of privacy was linked with the sense of insecurity and injustice when using such system, for example customers feel being tracked and they perceive that if they make a mistake or someone else make a mistake whilst using this system, they will not have the chance to justify the events or actions and they will be flagged as fraudsters.

The efficacy is defined by Graneheim & Lundman [20] as, "... it involves generative capability in which component cognitive, social and behavioral skills must be organized into integrated courses of action to serve innumerable purposes." The self-efficacy could be defined as, "one's belief in one's ability to succeed in specific situations" [20], [42]. The users or intended users of the system showed anxiety with self-efficacy with new online virtualized business model technology adding to sense of injustice and emotional anxiety. The sample codes are provided in Table I. To show the process of theme 'Anxiety Over Perceived Invasion of Privacy' generation.

The users showed dissatisfaction over unexpected costs of additional software and hardware (potentially for those without a webcam). The users wanted to be aware of the changes required prior to registration. This observation that all stakeholders should have been consulted thoroughly before the induction of online verification tool resulting in better

understanding of their needs and limitations of groups of users.

VII. DISCUSSION AND IMPLICATIONS

The results shown above indicate that customers have concerns about the services provided by WHSmith following their adoption of a new innovative business model to facilitate their customers. The decision to use NetSuite as an ideal content, inventory and customer relationship management tool for company websites was based on the assumptions that the old management system was in disrepair and did not properly accommodate the large product inventory, large customer and vendor base, as well as the needs of the accounting department. The integrated systems in NetSuite conveniently organize these business areas into one neat manageable package made it appear ideal.

As outlined above NetSuite is ideal for businesses of various sizes, providing integrated accounting, CRM, online marketing, web management, inventory and sales management, as well as vendor and manufacturer relationship management. NetSuite keeps track of all product information, web pages, customer login information, vendor/manufacturer details, stock and shipping details, autoresponder and customer emails, SEO and ad tracking/web metrics information, online marketplace, as well as accounting/ERP details. To put it simply, it has made WHSmith and the jobs of its sales and accounting teams much easier with the convenience of a streamlined system. There have been, however, a large number of issues along the road.

While looking at the feedback of the customers, WHSmith has run into a number of problems while switching over to using the NetSuite system. As a valued and big organisation, it had to rely on the proper interworking of the content management and product management aspects of NetSuite. The customer's issues are not limited to the design of the web page but also scanning the online payment, no auto response from web server and delays or no communication about their orders. The users also have the anxiety over loss of their personal details leading to the misuse of credit card details.

So what could have been a successful innovation may have become a problematic system for the organisation launching it, because of the complex nature and form of privacy concerns within online environments are not well understood.

Our study shows that the introduction of online innovative cloud based model should be carefully planned with the involvement of all the stake holders ensuring the minimization of risk for the users – this could be due to lack of awareness of the tool, lack of understanding of configuration, the significance of integration of the tool and scope of tool's tracking ability. Our study also shows the need to fully understand the user needs and requirements in a meaningful way for their privacy concerns. Understanding of potential causes of privacy anxiety and then devising strategies to minimize them could potentially lead to smooth adoption of new Cloud based business technologies. Effectively handling of the awareness of privacy when introducing new tools and services should not be just left to management and system designers but should include other bodies that could make significant contribution to this cause for example employees, social media marketing team etc. The organisations should be aware of the concerns relating to privacy issues as a fundamental part of their new online innovative cloud business model especially in the environment of integrated services and tools.

VIII. CONCLUSION

This study investigated the underlying factors causing anxiety over using the new online system. The conceptual formation of the research topic could be used by the decision makers, planners, designers and academics when integrating Cloud based business innovative models or similar services in their systems. The study shows that acutely understanding the users' privacy concerns is extremely important and not doing so could lead to unsatisfied users and damage to the reputation of the organisation. For example, this study shows that just the integration of new Cloud technology for managing the various franchises centrally did not trigger security concerns but not indicating to the customers and users about the adoption and transmission of physical system to virtualized business model has caused privacy and security concerns thus damaged the organisation's reputation.

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