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Abstract

The web is fundamentally changing. The many facets of this change are usually abstracted as Web 2.0. The core of Web 2.0 consists of the evolutionary step that interoperation and content-creating applications are provided via the web in addition to traditional static documents. Ahead of this evolution are web operating systems (WebOS) like g.ho.st that enable the consumer to migrate their complete operating system desktop to the web – a revolutionary step of personal computing. The required computational and storage resources may be procured on demand e.g. from cloud computing services by the WebOS service provider.

This research-in-progress-article introduces an adoption model (TAM) for a WebOS as a consumer service. The subject of our survey will be a service bundle comparable to a mobile phone plan. The aim of the adoption model is to measure the acceptance of this service bundle and to identify the major determinants which influence the consumer's adoption intention in order to specify which consumers may be future customers and to learn how to attract them from a marketing perspective. At the current early stage of adoption we intend to contribute insights that can be directly transformed into advice how this new technology can be successfully established.

Keywords: Human-Computer Interaction, Innovation, Electronic Commerce, Information Technology Acceptance.

1   INTRODUCTION

The diffusion of internet-based computing concepts appears to be near to reaching a new evolutionary step. Recent releases like the new Chrome browser (Google 2009) with its extended support for web applications, the new storage cloud entrant ZumoDrive (ZumoDrive 2009) that intuitively supports both Windows computers and iPhones, or Microsoft's initiative Live Mesh (Microsoft 2009) as a remote desktop and storage synchronization portal for the consumers' different computing appliances demonstrate that the future of personal computing will be on the web.

All of these concepts have in common that resources which have been physically bound to everybody's local personal computer will be substituted, supplemented and interconnected via networks, particularly the internet. A promising comprehensive concept that in a way combines and accomplishes all these approaches is a web operating system, abbreviated WebOS (Weiss 2005). A web operating system inherits the functions of a classic operating system, but uses non-local resources in a network. There is more than one possibility how such web operating systems can be technically realized, but one promising form is the integration of cloud computing.

The G.ho.st project is "the world's first true Web operating system" (G.ho.st 2009), a Palestinian-Israeli collaboration founded in 2006. To the best of our knowledge, there is no other comparable service by now. G.ho.st in its current beta status provides free access to a virtual machine, presented as an application desktop within the browser window and, in its look-and-feel, similar to desktop environments under Windows, Linux etc. In its self-description, it is summarized as 'a computer in a web page'. Technically, G.ho.st is based on the Amazon EC2 service (Amazon 2009).

We believe web operating systems as a cloud service have got a huge potential to be adopted by consumers, compared against other cloud paradigms. We argue that a WebOS provides a very simple and intuitive way to switch to web-based computing. Consumers can interact with this new OS in a very similar way they are already doing for decades. A WebOS as a widespread service would be a user-friendly package of functionalities that will probably be deployed as successfully as commonly used desktop operating systems. Most existing offers that target at attracting primarily consumers are software services for specific applications. But, with increasing number of services used, the multiple accounting procedures might overwhelm consumers as long as services are not abstracted as packages and standardized on a user platform. Although G.ho.st is essentially free of charge by now (G.ho.st charges for additional storage space only), it is not hard to imagine that a mature WebOS service will be accompanied by usage fees as a commercial service.

Both Web 2.0 and cloud computing have been buzzwords of the last two years. A closer look at these technologies exposes that they have a similarity in common. Whereas with Web 2.0 the consumer is producing own content by deploying information (content, personal profiles, images, videos, data, opinions, preferences, etc.) to web-applications and, hence, shifting information from her/his computational device to the web, cloud computing means shifting computational-/storage resources and the processing of data from the home desktop PC to the web. A prospective combination of both technologies may result in shifting both information and computational-/storage resources to the web at a single blow via using a WebOS.

Since the adoption behaviour and acceptance of a commercial WebOS has not been empirically analyzed, we present the conception of an adoption study in this paper. For this purpose we design a hypothetical commercial WebOS service bundle as subject of the study. Our aims are (1) to discover the acceptance of a commercial WebOS and (2) to identify its critical adoption determinants from a marketing perspective at an early stage of technology diffusion. Based on prospective empirical results conclusions can be drawn to which determinants future WebOS providers must pay special attention regarding the design of this service bundle and the marketing activities to promote it among consumers. For identifying the critical determinants we set up a research model based on the well-established Technology Acceptance Model (TAM), which we enrich with specific additional

constructs which describe important user characteristics. Our research model will be primarily applied to analyze the two aims of this study which are described above. We do not claim to contribute to TAM-literature. The collection of the data is currently in progress.

The paper is structured as follows: The next section summarizes the theoretical background. Section 3 introduces a future business scenario how the cloud service is presented to the respondents. Thereafter the research model as well as the hypotheses and the procedural method are presented. Finally we discuss selective expected results and possible implications.

2   THEORETICAL BACKGROUND

This paper touches several research streams in background. First, our future business scenario takes up a couple of recent and long-term technological developments we need to introduce, namely WebOS itself, cloud computing and virtualization. Second, the proposed service incorporates the evolution of mobile technologies and convergence of devices. Third, web operating systems are closely connected to the Web 2.0 evolution and the research on it. Finally, we describe the research area of individual IT-adoption as the methodological foundation of our research model.

2.1   WebOS, Cloud Computing and Virtualization

The term *WebOS* as used in this paper refers to the following concept (Weiss 2005): Within a web browser a desktop environment is displayed similar to those of the popular operating systems. The desktop environment itself is, for example, the interface of a virtual machine. The user can act on this desktop in the same way he/she does usually on the PC's desktop. Programs can be opened and data can be stored. As a next evolutionary step one may easily imagine that Web-operating systems turn from an operating system within a browser into a stand-alone operating system. A WebOS has several advantages in comparison to a usual local operating system (based on Weiss (2005)):

- Web access is already standardized so that it is platform independent. A WebOS inherits this feature. It can be launched from any system that has internet access.
- The WebOS is independent on the physical machine that is used for access and hence portable. Access is possible from anywhere in the world, provided there is an internet connection. There is no barrier to use even mobile phones as an access device.
- The service provider is responsible to prevent data loss.
- As data and programs are online all the time, document sharing and collaboration is technically simplified.
- A commercial resource provider can better utilize the existing resources, e.g. by deploying cloud computing services like Amazon's EC2, and the consumer might benefit as well (reduced costs).

The technical foundations of a WebOS are virtualization and cloud computing:

Cloud computing is a concept of network-based computing, i.e. data and/or processes are delivered within a network, typically the internet, whilst the client machine becomes more or less a simple input/output device for the delivered services (Buyya, Yeo, Venugopal, Broberg and Brandic 2009). The commonly agreed core definition (Vaquero, Rodero-Merino, Caceres and Lindner 2009) comprises resource virtualization, scalability together with seemingly infinite resources, customized service level agreements, ease of use and the commercial pay-per-use model. Thus, clouds are well-suited to provide the resources needed, whenever they are required and to whatever extent.

Virtualization (Barham, Dragovic, Fraser, Hand, Harris, Ho, Neugebauer, Pratt and Warfield 2003; Kroeker 2009) means abstraction of resources. Resources may be either virtually divided or virtually merged and can be dynamically rearranged. Virtualization decouples physical resources and their representation. Virtual machines are one of the highest abstraction levels and, realized as desktop virtualization, a promising paradigm to realize a WebOS technically.

2.2   Mobile Technology and Convergence

The concept of WebOS presented in this paper is a new application of mobile technology. There exists a body of literature that focuses on the drivers of mobile technology. In a research commentary Lyytinen and Yoo (2002) present a framework for what they call *nomadic information environments* such as ubiquitous or mobile computing, mobile phones or even more futuristic technologies. Mobility, convergence and mass scale are outlined as the three main drivers. According to them, "mobility and convergence will make it necessary for *nomadic information environments* to be available […] at a global level" for mass scale.

Mobility. The wish to mobilize IT devices is much older than cloud computing (Forman and Zahorjan 1994). Mallat et al. (2009) remark that mobile technologies do not necessarily increase the consumer's mobility, but may reduce their need to 'travel', i.e. the facility itself becomes mobile. Lyytinen and Yoo (2002) identify three consequences of mobility on terminals: size (becoming smaller), shape (becoming more ergonomic, stylistic) and diversity (meeting multiple user-specific requirements). Mobile phones are a typical example where one can find each of these trends.

Convergence. Convergence is a long-known phenomenon, too (Rosenberg 1976). It does not necessarily mean all devices finally turn into a single one. Basically it means an increased interoperability and accessibility between lots of different devices. Lyytinen and Yoo (2002) underline the diversification of data-processing and transmission that goes hand in hand. They remark that open communication and interaction standards are critical to digital convergence as it requires seamless interoperation between all mobile terminals, up to those that will be embedded in physical environments such as walls or furniture. Convergence creates utility for consumers. On the other hand, it creates increasing dependence between different devices, facing at issues like network stability, standardization or security. Convergence can be found in all areas of information technology. As one example, Fixed and Mobile Convergence (FMC) conflates mobile and fixed-line telecommunication networks.

Gartner (Gammage and Basso 2007) expected embedded virtualization capabilities in mainstream devices like smartphones by the year 2010, which demonstrates the central role of mobility and convergence. It looks as if the prediction was a bit too optimistic, but the general trend is still true.

2.3   Web 2.0

The term "Web 2.0" was introduced by Tim O'Reilly during a conference in 2004. He defines Web 2.0 as the network as a platform that connects different devices. Web 2.0 applications are services on that platform, which offer the possibility for the individual user to consume and remix content from multiple sources and additionally provide own content, which can be remixed from other users. This "architecture of participation" creates a network effect, which increases the value of the platform with an increasing number of participating users (O'Reilly 2007). A number of applications are embraced by the term "Web 2.0", e.g. online communities, blogs, chats, widgets, peer-to-peer-networks (file-sharing), audio- and videopodcasts, wikis, customer reviews, RSS-feeds, web-radio, music-portals and video-portals. These applications provide several social and technological functionalities: communication, contributing and sharing content, discussing content, publishing interpersonal relationships, obtaining information automatically or just consuming multimedia content (Alby 2008; Tapscott and Williams 2007).

In comparison to the "old web" where the consumer primarily gained information and where the production of content was reserved to users with web-programming skills, the applications of Web 2.0 are characterized by an easy handling, making it possible for every consumer to participate on that platform and generate own content (Alby 2008). On closer inspection most of these applications realize the idea of shifting content (e.g. text-based information, images, opinions, videos, music, and interpersonal relationships) from the consumer and her/his computational devices to the web for sharing it. This view on Web 2.0 applications shows the analogy to the functions of cloud computing

technology, which is amongst others shifting computational- and storage-resources from the consumer's location to the web. A prospective consequence may be that consumers want to combine both shifting content and computational- and storage-resources to the web. A WebOS, which can handle both, is a very applicable possibility to fulfill both prospective consumer needs.

2.4   Individual Adoption of IT

The most accepted model to analyze the individual adoption of a technological innovation, especially in the domain of information technology, is the Technology Acceptance Model [TAM] (Davis 1989) which is based on *Ajzen*'s Theory of Reasoned Action [TRA] (Ajzen and Fishbein 1980). TAM hypothesizes that the usage of a system is directly determined by the *Behavioral Intention [BI]* to use it. Ajzen and Fishbein (2010) found a strong significant correlation of 0.75 between the *BI* of students to donate blood and their real behavior, which was measured one week later. This outcome proves the strong relation between a self-reported intention and the future behavior of an individual. *BI* in turn is influenced by the *Attitude towards using a new technology* and the *Perceived Usefulness* [*PU*] of the new technology. *Attitude* and *PU* are again influenced by the *Perceived Ease of Use* [*PEOU*] of the technology. *PU* measures the individual's subjective assessment of the utility that the new technology is offering her/him in a specific task-related context. Whereas *PU* was originally deployed with respect to the individual's job performance, a number of studies showed that *PU* can also be used in non-organizational settings (Gefen, Karahanna and Straub 2003). *PEOU* explains the individual's salient beliefs that using the technology will be free of physical and mental effort (Moore and Benbasat 1991). A number of empirical studies are supporting TAM as a robust approach to explain the individual's adoption and acceptance of IT (Lee, Kozar and Larson 2003; Lucas Jr, Swanson and Zmud 2007) as well as in the domain of online services (Gefen et al. 2003; Wu and Chen 2005).

Gefen et al. (2003) introduced a model for measuring the acceptance of online shopping which accounts, besides the traditional constructs *PU* and *PEOU*, for three antecedents of trust. Trust is a central aspect in a buyer-seller relationship especially when the interaction with another party, like a service provider, enables one party to behave opportunistically by taking advantage of the situation (Kumar et al. 1995) and thus exploiting the other party's vulnerability. In their model Gefen et al. (2003) included three trust antecedents: *Calculative-Based-*, *Knowledge-Based-* and *Institution-Based Trust*. While *Knowledge-Based-* and *Institution-Based Trust* are built upon experiences of further usage of an online service (or new technology), *Calculative-Based Trust* can be evolved by putting oneself in the other party's place and evaluate what this party may gain by behaving opportunistically. Thus, further experiences of an individual with the other party to evolve *Calculative-Based Trust* are not mandatory.

Further developments, for example TAM2 (Venkatesh and Davis 2000) or TAM3 (Venkatesh and Bala 2008), extended the original TAM with additional constructs as determinants of *PU* and *PEOU* to break up the black box (Karahanna and Straub 1999; Straub and Burton-Jones 2007). To meet these concerns the four determinants *system characteristics*, *social influence*, *facilitating conditions* and *individual differences* have been added to explain *PU* and *PEOU* (Venkatesh et al. 2008). System characteristics are salient features of the technology that can help individuals to develop favorable perceptions regarding the *PU* and *PEOU* of the new technology. Social influences account for social processes and mechanisms that influence the individual's perceptions of diverse aspects of a new technology. Organizational support that facilitates the usage of a new technology is represented by facilitating conditions. Individual differences may consist of personality traits or demographics that influence *PU* and *PEOU*. Particularly personality traits were found to have strong effects on the adoption of an innovative technology (Agarwal and Prasad 1998).

A comprehensive index of very relevant personality traits affecting the acceptance of new technologies is provided by the Technology Readiness Index [TRI] (Kleijnen, Wetzels and de Ruyter 2004). The TRI measures "[…] people's propensity to embrace and use new technologies for accomplishing goals in home life and at work" (Parasuraman 2000). It consists of the four dimensions

Optimism, *Innovativeness*, *Discomfort* and *Insecurity* and was developed to gain insights into the consumer's technology readiness from a marketing perspective. Amongst others, it was employed in adoption research in the domain of self service technology (Liljander, Gillberg, Gummerus and van Riel 2006) and integrated into TAM by Lin, Shih and Sher (2007) in the context of consumer adoption of e-service systems.

3   A SCENARIO FOR A COMMERCIAL WEB OS SERVICE

At the time now consumers often recognize web-based computing as web pages that contain a specific application. Usually each user gets an own account that guarantees privacy. Files must be uploaded and downloaded to be editable both online and offline. Supplementary there are service providers offering online storage capacities. Again, accounting and the interaction with the local file system (uploads and downloads) depends on the provider. These various, inhomogenous services cannot realize all of the advantages that web-based computing promises. First, it still requires a powerful access device. Thus the idea of dynamic allocation of otherwise unused resources is not realized completely. Second, the multiple and diversified accounting procedures probably rather reduce than create much ease of use. Third, the access device still acts as the center of personal computing, thus mobility is still limited.

A WebOS within the browser in contrast, but especially in its prospective realization as a substitute of a local operating system, might solve these problems. The local client device then can be a thin client that is cheap, easily exchangeable, power saving and portable. It is no longer the center of personal computing, but a simple access device only. A WebOS would provide an operating platform that comprises different types of services such as storage or computational power. Almost all processing is online; therefore dynamic resource allocation can be applied in background by virtualization. Accounting is reduced to one login and the user can act within a web operating system in same way as in a local operating system, thus there is minimal relearning required.
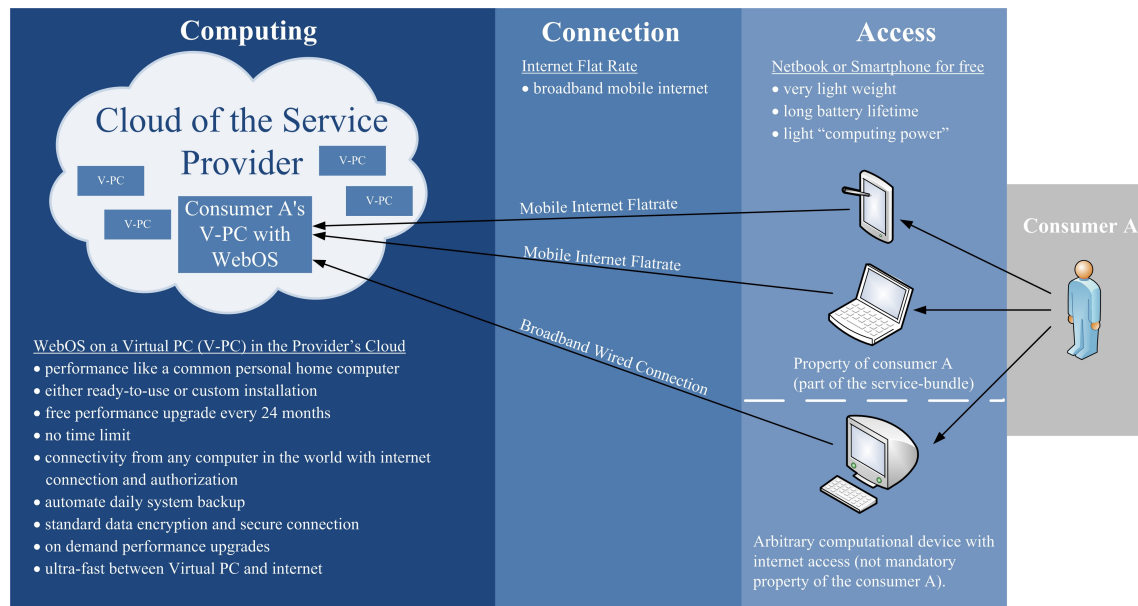

Figure 1. Scenario for a commercial WebOS Service

Many cloud providers such as Salesforce or Amazon raise fees for their service. We follow them and suggest a commercial bundle product. A popular form of a German mobile phone plan comprises a subsidized phone and a two year flat tariff. The scenario for a commercial WebOS service (see figure 1) that we are going to present the respondents is a service bundle as an adapted version of this

concept, consisting of three components. The three components are *computing (i.e. technically a virtual machine for unlimited usage together with the WebOS)*, *connection (internet flat rate)* and *access (thin client)*, described in the next paragraphs. Thus the bundle is an all-in-one service that does not cause any additional costs.

The central component is the WebOS. The consumer may either choose one of the preconfigured machine images or self-configure his/her custom bundle. The consumer should expect a computing performance that is comparable to a standard personal home computer. The consumer can get a free performance upgrade every 24 months as well as on demand upgrades anytime. She/he can device-independently connect to his WebOS from anywhere, provided there is an internet connection. We assume standard connection security and data encryption is implemented. We also assume the system is backed up daily.

The physical component is a thin client. Such a client could be a smartphone or a netbook which is included in the bundle (no extra charge). The computing power of the thin client is rather limited compared to others on the market, since the processing power is unimportant. Instead the thin client can be expected to be very light-weighted, handy, robust and power-saving (long battery lifetime).

As a commercial service the bundle also comprises both network flat rates for high speed mobile internet (connecting the thin client and the virtual machine) and wired internet (connecting the virtual machine and the internet). In this paper we define the whole bundle of WebOS, thin client and internet connection as *Commercial WebOS*.

4   RESEARCH MODEL AND HYPOTHESES

From the TAM perspective the commercial WebOS described in the previous section is comparable to online- or web services with a buyer-seller relationship (e.g. online shopping) or mobile services (e.g. usage of mobile devices). A number of studies showed that TAM is applicable for analyzing such services (Gefen et al. 2003; Lu, Yao and Yu 2005; Teo and Pok 2003). In our scenario a buyer-seller relationship between the consumers and the providers exists. Thus, Gefen et al. (2003)'s model, which accounts for trust antecedents, is highly suitable. Individual differences are considered as determinants of *PU* and *PEOU* (Venkatesh et al. 2008) and offer the marketer more insights to the potential consumer of a new technology. Especially personality traits are considered as influential for adoption research (Dabholkar and Bagozzi 2002). In our model (see Figure 2) we focus on individual differences with high relevance to the presented commercial WebOS regarding consumer insights for the marketer. To the best of our knowledge there is only one market offer (g.ho.st) which is slightly comparable to our WebOS scenario and thus a distinct usage may not be observable. This implies to exclude the variable *Usage*.

PEOU measures whether a new technology is free from effort while adopting it (Davis 1989). The easier to handle a WebOS is, the higher the *Attitude Towards Using a Commercial WebOS* will be. *PU* captures the utility a new technology is offering. With increasing utility, the *Attitude Towards Using a Commercial WebOS* and the *Intention to Adopt a Commercial WebOS* will also increase. The *Intention to Adopt* is strongly influenced by the *Attitude* a consumer has towards a WebOS. Therefore we hypothesize:

H1: Attitude has a positive effect on the Intention to Adopt a Commercial WebOS.

H2: PEOU has a positive effect on the Attitude Towards Using a Commercial WebOS.

H3: PU has a positive effect on the Attitude Towards Using a Commercial WebOS.

H4: PU has a positive effect on the Intention to Adopt a Commercial WebOS.

We assume that the consumer's *PEOU* of a new technology is influenced by two determinants: (1) the consumer's general beliefs about technology (Lin et al. 2007) and (2) the degree of experiences the consumer gained by using technologies that are partial similar to the respective technology. For

covering the consumer's beliefs about technology we integrated two constructs of the TRI into our model, which are defined as drivers of the consumer's technology readiness (Parasuraman 2000) and were proved to be stable and reliable by other studies (Liljander et al. 2006): *Optimism* is described as a positive view of technology and a belief that it offers people increased control in their lives; *Innovativeness* measures the tendency to be a technology pioneer and thought leader. We assume that consumers, who show high parameter-values in these constructs, will perceive a commercial WebOS easier to use than consumers with low parameter-values. Due to the increasing usage of Web 2.0 applications (Lynch 2009) consumers get more and more accustomed to execute even complex operations online via their web browser. To ease their use, several Web 2.0 applications are designed very similar to standard desktop software regarding their handling. Since a WebOS means to completely shift the operations from the OS of the home desktop PC to the web browser, *Web-2.0-Usage* will be an adequate approximation for the consumers' degree of experience with operating tasks via the web browser. Thus, we assume that consumers who show a distinctive usage of Web 2.0 applications will perceive a commercial WebOS easier to use than those who are using these applications less. The assumed influences of these constructs on *PEOU* will be tested by the following hypotheses:

H2a: Optimism (TRI) has a positive effect on PEOU.

H2b: Innovativeness (TRI) has a positive effect on PEOU.
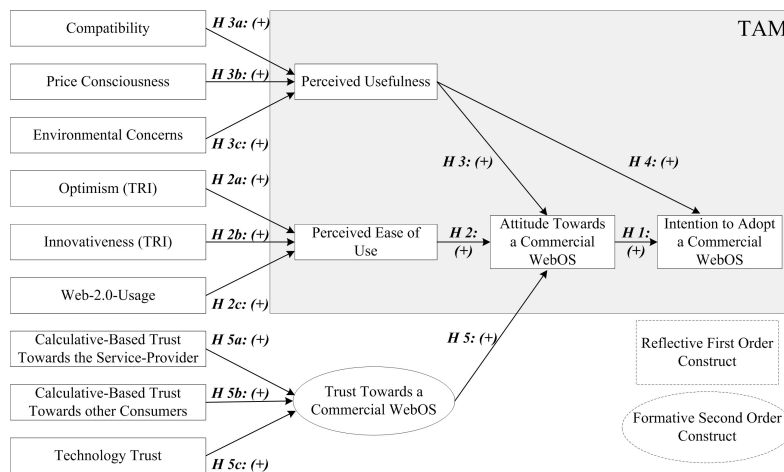
H2c: Web-2.0-Usage has a positive effect on PEOU.

Figure 2. Research Model

For identifying marketing-relevant drivers of PU we decided to take one construct into account, which measures if the technology fits into the lifestyle of the consumer and two constructs which cover personality traits and help the marketer to decide if the message of a marketing campaign has to focus on pricing or environmental advantages of the service bundle. *Compatibility* reflects the degree to which an innovation is perceived as being consistent with the existing values, needs, and past experiences of potential adopters (Moore et al. 1991). Significant effects on *PU* have been already shown by Chen, Gillenson and Sherrell (2002). Fulfillment of the needs for mobility and convergence will be a necessary condition for addressing the *Compatibility* of a technology for the consumer. A WebOS enables the consumer to reach a more flexible adjustment of computer usage to her/his lifestyle in terms of mobility and convergence rather than using a personal home computer. Thus *Compatibility* may have a strong positive effect on the utility and, hence, the *PU* of a commercial WebOS for a consumer. Additionally the utility of a new technology will increase if the consumer can save costs by adopting it (Jedidi and Zhang 2002). Thus, differences in *Price Consciousness* between consumers may influence the *PU*. In this case marketing campagnes shall focus on the argument that

the consumer can save costs compared to his present computer usage. Product design which addresses environmental issues by green product development is receiving significant attention from consumers (Chen 2001). Green consumers, which care about the environment, obtain psychological benefits from buying environmentally friendly products (Bei and Simpson 1995). Hence, they may gain a higher utility by adopting a WebOS combined with cloud computing, which has the potential to save energy and commodities through more efficiently balanced capacity utilization. We assume that the *Environmental Concerns* of a consumer have a positive effect on PU, which has to be addressed in a marketing campagne for promoting the advantages of the presented commercial WebOS. Hence, the following hypotheses regarding the determinants of *PU* have to be examined:

H3a: Compatibility has a positive effect on PU.

H3b: Price Consciousness has a positive effect on PU.

H3c: Environmental Concerns have positive effects on PU.

Trust is a central aspect in a buyer-seller relationship like the scenario presented in this paper (Chang, Cheung and Lai 2005; Gefen et al. 2003). The attitude towards using a new technology will be strongly influenced by the degree of trust the consumer has towards the service-provider. In a cloud computing infrastructure consumers often share the same computational resources. Hence, it has to be considered that some consumers, who use the service, behave opportunistically by hacking the system and gaining confidential information. With increasing trust towards other consumers, *Trust Towards a Commercial WebOS* will rise. Finally the consumer has to trust the technology itself to operate as demanded, e.g. prevention of data losses, security and privacy worries (Cao, Zhang and Seydel 2005). In this model the construct *Trust Towards a Commercial WebOS* is operationalized as a second-order construct composed of three sub-constructs *Calculative-Based Trust Towards the Service-Provider*, *Calculative-Based Trust Towards other Consumers* and *Technology Trust*. Since our scenario of a commercial WebOS is not available on the market in the described settings by now, further experiences may not be observable. Thus our model focuses on *Calculative-Based Trust* regarding inter-personal relationships (H5a, H5b), where further experiences are not mandatory. This leads to the following hypotheses:

H5: Trust Towards a Commercial WebOS has a positive effect on the Attitude Towards using a Commercial WebOS.

H5a: Calculative-Based Trust Towards the Service-Provider has a positive effect on Trust Towards a Commercial WebOS.

H5b: Calculative-Based Trust Towards other Consumers has a positive effect on Trust Towards a Commercial WebOS.

H5c: Technology Trust has a positive effect on Trust Towards a Commercial WebOS.

5　　PROCEDURAL METHOD

Whenever possible we will deploy established reflective constructs and transfer them into the context of a commercial WebOS: *Price Consciousness* (Lichtenstein, Ridgway and Netemeyer 1993); *Environmental Concerns* (Minton and Rose 1997); *Compatibility* (Moore et al. 1991); *Optimism*, *Innovativeness* (Parasuraman 2000); *Calculative-Based Trust Towards the Service-Provider*, *Calculative-Based Trust Towards other Consumers* (Gefen et al. 2003); *Technology Trust* (Cao et al. 2005); *Perceived Usefulness*, *Perceived Ease of Use*, *Attitude Towards Using a Commercial WebOS* and *Intention to Adopt a Commercial WebOS* (Davis 1989). The formative second-order construct *Trust Towards a Commercial WebOS* will consist of the three trust antecedents described above. The variable *Web-2.0-Usage* will be operationalized by asking to which extent Web 2.0 applications (see theoretical backgrounds) are used by the consumers. As measurement scale, we will employ a fully anchored 7-point Likert scale, ranging from "strongly disagree" to "strongly agree" for all multiple item constructs. The constructs will be part of an online survey with graduate students (which can be

regarded as potential future customers of a commercial WebOS) in their native language (German) using the back-translation method (Brislin 1970). To enshure a basic experience with a WebOS among the participants, all of them will be enforced to register and engage with the available WebOS g.ho.st before responding to our survey. As German consumers are used to bundled phone plans, we are optimistic the participants will be able to understand our commercial WebOS which combines such a network subscription with a WebOS and client hardware. Thus, they will be able to provide valid answer to the items presented in our survey. The research model will be operationalized as a structural equation model and estimated using the Partial Least Squares (PLS) approach (Chin 1998; Wold 1982) with the software implementation SmartPLS (Ringle, Wende and Will 2006). PLS is preferred because this method is prediction-oriented, giving optimal prediction accuracy and being appropriate for testing theories that are in an early stage of their development.

6   CONCLUSION: ESTIMATED OUTCOME AND IMPLICATIONS

Internet-based computing that primarily targets consumers rather than enterprises is still at an early stage, but first offers are available. It is a promising technology that realizes the increasing consumers' need for mobility and convergence in a new dimension and hence increases usefulness. It enables the consumer to access his/her data and desktop environment from anywhere in the world. By procuring computational- and storage resources via a cloud computing service the resources can be managed more efficiently, which allows to offer this services at lower overall costs for the consumer (compared with a traditional home computer setup) and provides the possibility for an easy upgrade on demand.

Our study can identify the acceptance of such a commercial WebOS and provide insights whether traditional hardware and software manufacturer shall mindfully monitor these developments. A high degree of acceptance among the consumers implies that these companies may have to suffer significant losses in their hardware and software sales in the future, if they carry on solely with their traditional offers. For manufacturers who think about switching from selling traditional home computers to offering a commercial WebOS, the results of our study will provide very valuable consumers insights to successfully design new service offerings and marketing strategies for promoting these new services. *Perceived Usefulness* as a main driver would imply that a marketing campaign must underline the advantageous features of the service. *Perceived Ease of Use* as a main driver would imply the technological and strategic challenge to simplify the usage of the service as much as possible and advertise this ease. A significant impact of *Price Consciousness* indicates that a marketing campaign has to emphasize the advantage of lower costs, whereas a high impact of *Environmental Concerns* suggests highlighting the Green IT-character of this service. Finally, *Trust Towards a Commercial WebOS* as a main driver would suggest exploitation of trustworthy brands and their reputation or implementation of (and from marketing perspective underlining) sufficient security and stability features. Furthermore, the application of structural equation modeling not only covers the possibility to show which determinants have a significant impact, but also to compare the strengths of the determinants. Hence we can identify which determinants are most important for a successful market introduction of a commercial WebOS.

Our pilot study in its proposed form is limited, as it includes only consumers in one country at present. The results cannot be generalized, as cultural affinities were shown to have a high impact on technology adoption behavior (Phillips and Calantone 1994). Thus, further research regarding WebOS might address differences between developed vs. developing countries as well as cultural differences like race, ethnicity, age and gender.

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