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## **E-COMMERCE IN IMMERSIVE VIRTUAL WORLDS**

Case: Second Life

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Case: Second Life

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## ABSTRACT

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## ABSTRACT

This thesis was inspired by the VERCCO project of the city of Oulu and local enterprises as well as the InnoMajakka project of Oulu University of Applied Sciences. The purpose was to define the concept of 'immersive virtual world' and analyse their commercial potential and characteristics for Small and Medium Sized Enterprises. Furthermore the concept of an avatar was defined. A case study of Second Life has been conducted to illustrate the possible revenue creating models used in or in conjunction with this particular virtual world.

The knowledge base of this thesis will concentrate on defining the concept of 'real 3D immersive virtual world' and aspires to map out the different ways in which an SME or a private individual is able to conduct business with or within a virtual world. A list of current commercially available virtual worlds will be provided. The practical part of the thesis is a case study of Second Life. The author created a Second Life user account and sought out businesses within the virtual world as well as interviewed a Second Life entrepreneur.

The current open-ended virtual worlds were found to be of little interest for established enterprises today. The huge media hype of 2006-2009 has died down and many companies who took to virtual worlds at that time have withdrawn from them. The potential is still there and new innovations and projects are invigorating the field. Second Life has been somewhat marginalised as a business environment.

I discuss the possible future creation of single log-in point and single avatar for multiple virtual worlds for entertainment and business purposes. I also found suggestions for further research topics, such as virtual shopping malls with multiple linked virtual shops.

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Keywords:

*virtual world; Second Life; avatar; e-commerce*

## TIIVISTELMÄ

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## TIIVISTELMÄ

Opinnäytetyön inspiraationa oli Oulun kaupungin ja paikallisten yritysten VERCCO-, sekä Oulun seudun ammattikorkeakoulun InnoMajakka-projektit. Tarkoituksena oli määritellä käsite 'mukaansatempaava virtuaalimaailma' ja analysoida em. virtuaalimaailmojen kaupalliset mahdollisuudet ja ominaisuudet pienten ja keskisuurten yritysten käyttöön. Lisäksi käsite avatari (hahmo) määriteltiin. Lähemmässä tarkastelussa käytettiin Second Life -virtuaalimaailmaa havainnollistamaan mahdollisia ansaintamalleja, joita on mahdollista käyttää joko virtuaalimaailmassa itsessään tai siihen liittyen.

Opinnäytetyön tietopohja keskittyy 'todellisen, kolmiulotteisen ja mukaansatempaavan virtuaalimaailman' käsitteen määrittelyyn ja pyrkii kartoittamaan ne erilaiset tavat, joilla pieni tai keskisuuri yritys tai yksityinen henkilö voi tehdä kauppaa virtuaalimaailmoissa tai niihin liittyen. Tällä hetkellä olemassa olevista virtuaalimaailmoista on tehty listaus. Tarkemmin tutkittiin virtuaalimaailma Second Lifea. Tekijä loi käyttäjätunnuksen Second Lifeen ja etsi yrityksiä virtuaalimaailmasta ja haastatteli yhtä Second Lifen yksityisrittäjää.

Vakiintuneet yritykset eivät tällä hetkellä ole kiinnostuneet Second Lifen kaltaisista päämäärättömistä virtuaalimaailmoista. Suurin hehkuus virtuaalimaailmoista mediassa on vuosien 2006–2009 jälkeen vähentynyt. Moni sellainen yritys, joka lähti 2000-luvulla mukaan virtuaalimaailmiin, on vetäytynyt pois. Mahdollisuudet ovat vieläkin olemassa ja uudet innovaatiot ja projektit elävöittävät kenttää. Liiketoimintaympäristönä Second Life on kutakuinkin syrjäytetty.

Lopuksi esitän erilaisia jatkotutkimuskohteita ja tulevaisuuden visiota, joihin kuuluu esimerkiksi yhden käyttäjätunnuksen ja hahmon avulla käytettävissä olevat kaupalliset ja viihteelliset virtuaalimaailmat.

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Asiasanat:

*virtuaalimaailma; Second Life; avatari; verkkoliiketoiminta*

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# 1 INTRODUCTION

“Thanks to the Internet, it has never been so easy to become the person of your wildest dreams” (Winder 2008, ix).

The purpose of this thesis is to form a list of commercially available 3D virtual worlds and analyse their commercial potential, characteristics and success factors for the SME's<sup>1</sup> of Oulu Region for commercial benchmarking, development and design purposes. I will approach the analysis by answering the following questions: How many and what kinds of Virtual Worlds are there available for international audiences? How much business is done within the world? What kind of business? Are there any recognizable success factors that could be seen from the selection of those environments that have survived the global economic downturn of 2009-2010? What were the reasons for failure (Vivaty, Lively, There.com etc.)? Can a benchmarking solution/application be found? What, if any, difference would single log-in access make in immersive virtual shopping platform?

I will map some of the different immersive virtual worlds that have been created for the 3D environment and which use an avatar to represent the user and in which there is any form of commerce happening within the virtual world (see Chapter 3, page 14). Are there any virtual shopping malls? I will define the concept of avatar and what sort of information is stored in an avatar. I will explain the differences between the open-source and proprietary platforms for 3D virtual worlds. I briefly explain the concept and history of e-commerce and tie it in with the online commerce happening in the 3D virtual worlds. As an example of the e-commerce in a 3D virtual world I will present a case study of Second Life®.

The inspiration for this thesis is the InnoMajakka project of Oulu University of Applied Sciences, Oulu University and regional enterprises and public organisations (Oulu University of Applied Sciences 2010, date of retrieval 10.6.2010). The project has been co-operating with an e-commerce service project VERCCO which is managed by the City of Oulu (BusinessOulu) and it co-operates with e.g. VTT Technical Research Centre of Oulu, Pohjois-Pohjanmaan Yrittäjät (the entrepreneurs of Northern Ostrobothnia), Kaleva Oy, Itella Oyj and region's municipalities (Vercco Project 2010, date of retrieval 10.6.2010)

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<sup>1</sup> Small and Medium sized Enterprises

## 2 WHAT IS AN IMMERSIVE VIRTUAL WORLD?

There are many definitions of the term “virtual world”. In his essay “Toward a Definition of “Virtual Worlds” Mark Bell (2008, 2) aspired to combine these different interpretations into a comprehensive explanation: He defines the term as “A synchronous, persistent network of people, represented as avatars, facilitated by networked computers”. In his description the different parts are explained as follows:

- Synchronous:  
In a virtual world the activities are shared and communication happens at the same time, “in real time” for all users.
- Persistent:  
A virtual world continues to exist without the user’s presence in it. The changes made by the users will change the environment for other users. A virtual world is never paused.
- Network of people:  
The presence of many people is an integral part of a virtual world. People communicate, interact and collaborate with each other and the environment. People also form brief associations with other people to achieve common goals or even longer term social groups (Williams, Ducheneaut, Xiong, Zhang, Yee & Nickell 2006, 338-361).
- Represented by avatars:  
The concept of an avatar is more closely discussed in Chapter 2.2.
- Facilitated by networked computers:  
Without networked computers the self same definition could be used to describe a traditional pen and paper role-playing game. With the aid of the computers the world can be infinitely more complex and persistent as well as allow for instant communication across national and geographical boundaries.

The concept of “virtual world” is not synonymous to “virtual reality”, because the simulation doesn’t have to be of the real world. In a virtual world people might possess skills that in reality are not possible (the ability to fly, for example). A virtual world could also be an abstraction, a completely fictional fantasy world where dragons roam free and mermaids are just another species to interact with. From a technical point-of-view a virtual world is a computer generated, simulated environment which is accessed via a graphical user interface. “An immersive digital environment is an artificial, interactive, computer-created scene or “world” within which a user can immerse themselves” (Nechvatal 2009, 48).

To really understand what the term 'immersive virtual world' means one has to take a look at the verb 'to immerse'. Webster's Dictionary (Merriam-Webster, Inc., 1986, 348) defines the verb as 1) To put into a liquid, submerge, 2) To baptize by submerging in water or 3) To engross, absorb. Björk and Holopainen (2004, 423) divide immersion in game and virtual worlds into six (6) main categories:

1. Sensory-motoric immersion  
It is experienced when performing tactile operations that involve skill.
2. Cognitive immersion  
It is more cerebral and is associated with mental challenge. For example chess players experience this when choosing their next move from wide variety of possibilities.
3. Emotional immersion  
This happens when players become invested in a story – somewhat similar to what people experience while reading a book or watching a movie.
4. Spatial immersion  
This occurs when a player feels the world is convincing – s/he feels that s/he is actually “there” and that the simulated space looks and feels “real”.
5. Psychological immersion  
This happens when the player confuses the game with real life.
6. Sensory immersion  
It happens when the player enters the simulated 3D environment and starts being intellectually stimulated by it and it affects his/her impression and awareness of it.

User's involvement with the experience of a virtual world has been studied in social theories of virtual environments, game studies, and group interaction theory as well as in consumer experience studies. The following concepts have been presented: telepresence, flow and virtual experience. Steuer (1992, 73-93) refers to the sense of being *in a virtual environment* as telepresence. When the user experiences intensive telepresence, s/he is ignoring the technology involved and is able to indirectly experience the objects and people within the virtual environment (Li, Daugherty & Biocca 2001, 13-16). Furthermore, when users become immersed in the virtual environment they experience what Csikszentmihalyi (1997) calls the flow. It describes the feeling of losing self-consciousness and sense of time while concentrating in the virtual world and what is happening there so exclusively that s/he ignores the real world (Novak, Hoffman & Yung 2000, 23-24).

Another aspect of a virtual world is what Li et al (2001, 18-23) describe as the virtual experience. In here it refers to the experience that the user gets when interacting with objects in the virtual world. To clarify, the virtual experience is grouped with direct and indirect experience, where the first refers to the actual, physical experience of an object. It is the most profound experience and enables the use of all senses (including taste and smell). Indirect experience refers to a mediated experience which is often acquired through traditional media, such as print and broadcast. Whereas the virtual experience is also a mediated experience, it is a more interactive and richer than indirect experience.

To summarize, one could argue that the immersion within a virtual world means that the person experiencing the environment feels that they are a part of the simulated world, not just looking in.

## 2.1 Concept of a Virtual World

To gain an understanding as to what is meant here by a virtual world the following graphic representation (Figure 1) of the concept was made:

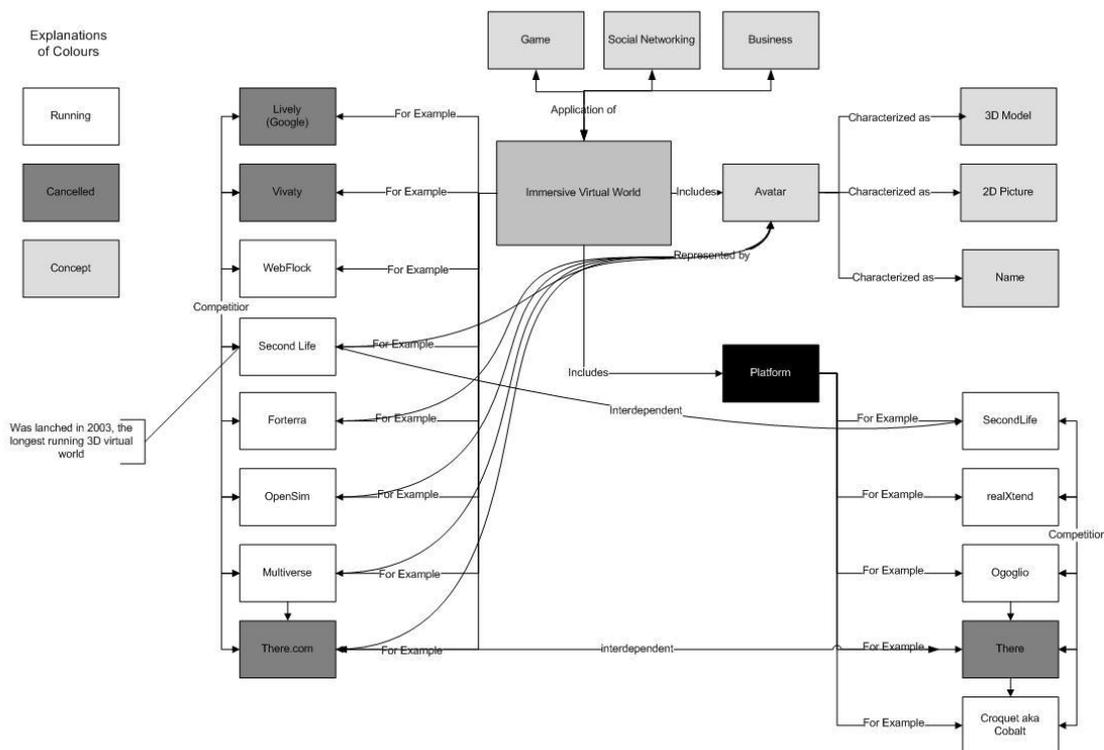


Figure 1. Conceptual map of an immersive virtual world.

In the picture the concept of immersive virtual world is placed in the middle and it is then characterized by the concepts of “game”, “social networking” and “business”. They describe the

purpose of the virtual world. Why does it exist? Is it meant for people to play games in, socialize in, or do business in? Is it a combination of the three? Another concept that is included in the picture is the avatar (see Chapter 2.2 Avatar). The graph also shows that a platform is an integral part of a virtual world (see Chapter 2.3 Platform).

## 2.2 Avatar

An avatar is a computer user's representation of him/herself or alter ego. By a popular definition the avatar can be in the form of a three-dimensional model used in computer games or a two-dimensional icon (picture) used on Internet forums, social networking sites and other communities (see Figure 2, on page 11). An avatar can also refer to a text construct found on early systems such as MUDs<sup>2</sup>. Bell (2008, 3) adds the characteristic of being able to perform actions. In his definition the avatar is an agent able to perform actions in its own name. Whereas the avatar of a user in a MMORPG<sup>3</sup> can perform action (e.g. "My avatar mounts the horse and rides after the bandits") one's Facebook profile cannot perform independent actions (e.g. "My Facebook profile pokes you"). The avatar is always a representation of the user or his/her characteristics and oftentimes has fantastic qualities which have nothing to do with the reality. Nakamura (2002, xiv) writes:

While these places could be categorized as "games", the MUDs, MOOs<sup>4</sup> and chat rooms that I examine [...] are also theatrical and discursive spaces where identity is performed, swapped, bought, and sold in both textual and graphic media. When users create characters to deploy in these spaces, they are electing to perform versions of themselves as raced and gendered beings.

The use of the term "avatar" to mean online virtual bodies was popularised by Neal Stephenson in his cyberpunk novel *Snow Crash* (2003). In *Snow Crash*, the term Avatar was used to describe the virtual simulation of the human form in the Metaverse, a fictional virtual reality application on the Internet. Social status within the Metaverse was often based on the quality of a user's avatar, as a highly detailed avatar showed that the user was a skilled hacker and programmer. The less skilled programmers/users of the Metaverse would use ready-made models for their avatars and thus be less appreciated for their skill within the community.

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<sup>2</sup> Multi-User Dungeon, a multiplayer real-time virtual world which is described primarily in text. First MUD's were published in the late 1970's.

<sup>3</sup> Massively Multiplayer Online Roleplaying Game

<sup>4</sup> Multi-user Dungeon system, which allows users to perform object-oriented programming (e.g. new rooms and objects). See LambdaMOO website at <http://www.lambdamoo.info/>.



*Figure 2. A 2D avatar of the author*

As the complexity of the environments where avatars are used has grown, so has the complexity of the avatars. In the early MUDs the avatar, as stated above, could be a brightly coloured ASCII (American Standard Code for Information Interchange) character and the user had very little influence on the outer appearance or other characteristics of his/her avatar (even colour could be assigned by the game/character itself). The 3D avatars of the latest games can be highly detailed and in some cases (where representing human characters) extremely lifelike (see Figure 3). In the case of some virtual worlds there is brisk intra-world v-commerce (see Chapter 4 E-, M- and V-commerce in Immersive Virtual worlds for more information) going on with virtual commodities that enable the user to customize their avatar beyond the options available to all users. In Chapter “Second Life and E-Commerce” I will take a look at the user-created virtual goods market within Second Life.



*Figure 3. A 3D avatar in the MMORPG World of Warcraft*

## **2.3 Platform**

The term platform in computing essentially means that a platform is the foundation that is made up of both hardware and software which then allows the intended application to run. These components create a secure base for all the operations and functions of the computer system in question. One commonly identified component of the computer platform is the operating system. There are broadly two types of platforms for the creation of 3D virtual worlds: open source and proprietary platforms.

Open source in computing is the term used describing (usually) a software venture within which all the source code of the program/application is available to the public and everyone can take part in developing, bug fixing and testing the code. There are arguments towards the notion that open source is a philosophy and some argue that it only refers to a pragmatic methodology.

In the field of 3D virtual world platforms, there are many providers of open source platforms. One interesting platform for 3D virtual worlds is the Oulu-based project realXtend. The project has many participants from the Oulu area, mainly companies involved in 3D environments, games design and internet research (realXtend 2013, date of retrieval 16.12.2013). The platform is free to use and the different virtual environments created with the tool can be linked together. The project has also produced a viewer (see also page 30) which can be used to access realXtend worlds or Second Life (see Chapter 5 Case: Second Life).

Some of the companies have made the decision to open their source material to the public albeit working with proprietary software in the beginning (e.g. Linden Lab changed their approach in 2007 and opened up their Second Life® platform source code) (Linden Research, Inc. 2007, date of retrieval 15.6.2010).

Proprietary platform therefore is the opposite of the open source platform. The source code, file formats and software included are, in practice, only licensed to the purchaser and s/he has no right to redistribute, change or reverse engineer the product. Good examples of proprietary platforms are Blizzard's World of Warcraft® and CCP's EVE Online®

## **2.4 A Real Virtual World**

For the purposes of narrowing down the countless different virtual worlds (for a more comprehensive list, see APPENDIX) that exist, I have adopted the following criteria for defining the immersive virtual worlds that this thesis will concentrate on:

A 3D virtual world contains the following:

- It is a MMOG, a massively multiplayer online “game”
- It is true 3D (which leaves hundreds of 2D Flash-based virtual worlds out of the scope of this thesis, e.g. worlds like Club Penguin and Gaia Online)
- It allows many different activities in addition to linear game play, such as social networking and user-created content (this rules out many MMORPG’s, such as World of Warcraft®, Football Superstars™ etc.)
- Open-ended gameplay – there are no predefined goals or scripted end to the adventure. The players have the freedom to define and pursue their own goals
- Customizable avatars

Furthermore, Dr. Yesha Sivan defines the “Real Virtual World” with the following four factors (Sivan 2008, 7-8):

- 3D World
  - user can see objects, such as avatars, houses, cars
  - has land, a sky, a sun/suns, wind, gravity, water, fire
  - free movement of avatars and camera
- Community
  - sense of being a part of some bigger group
  - socialising with the other users
  - avatars that you see are controlled by other users (i.e. other “real” people)
- Creation
  - users can create their own content within the virtual world (e.g. objects, animations)
- Commerce
  - basis of the economy of the virtual world
  - virtual currency

### 3 A BRIEF HISTORY OF COMMERCIAL VIRTUAL WORLDS

Messinger et al, (2009, 295-296) trace the emergence of 3D virtual worlds back to first video games and social networks. According to them these paved the path for the virtual worlds of today. From the first arcade games of the late 1970's, through the gaming consoles of the 1980's and single-player and later local area network games of the 1990's and the massively multiplayer online games of the 21<sup>st</sup> century all changed the way people played and conceived gaming. Messinger et al. emphasize the significance of the innovations made in the gaming world in development of user-controlled and customizable avatars, multi-user interaction, 3D animation and user-created content to name a few. Parallel to the games phenomena the concept of social networking changed the way people relate to one another and made the idea of virtual world friends more acceptable. The first social networking site SixDegrees.com was launched in 1997 and it supported user-created profiles, friend lists and in 1998 it expanded to include the possibility to browse through friends' lists. The service attracted millions of users but was not able to convert to a sustainable business and was subsequently closed in 2000.

Innovations in gaming and the emergence of social networking lead to the creation of the 3D virtual worlds of today. First versions of 3D virtual worlds were seen in the 1990's (ActiveWorlds Aphaworld, first beta in 1995, release in 1997, VLearn 3D in 1998). Entropia Universe (by a Swedish software company called MindArk) was launched in January 2003, followed by Linden Lab's Second Life® in June of the same year. The following months and years saw the launch of many different virtual worlds, some had a more fantastic approach and some were aimed for children/teens. The peak of the hype in media for this new phenomena was reached in 2006 to 2008, with many real life companies, organizations and news agencies establishing presence in virtual worlds (especially in Second Life) (Linden Research, Inc. 2008, date of retrieval 8.12.2013) (New Business Horizons Ltd. 2009, date of retrieval 8.12.2013).

After the media hype the field of virtual worlds has not been idle. New game-oriented virtual worlds have been launched in the 2010's, for example Guild Wars 2, Rift, and Star Wars: The Old Republic. This type of MMORPG is very popular at the moment and there are several big launches coming up in 2014 as well. One of the most anticipated ones is the first online version of a long-standing game title 'Elder Scrolls' (first game was launched in 1994 and the fifth in 2012, with 13 expansions combined). The developers Bethesda Game Studios and ZeniMax Online Studios recently announced the release date of Elder Scrolls Online for April 2014 (Bethesda Softworks LLC 2013, date of retrieval 14.12.2013).

Another interesting development recently in the news is the story of Oculus VR, Inc. The company's vision is to provide affordable and easily wearable virtual reality technology for immersion. The news story the author (Velazco 2013, date of retrieval 15.12.2013) explains how Oculus VR has raised US\$75 million to develop and market the virtual reality equipment. Velazco quotes Oculus VR's CEO Brendan Iribe: "This is not just a fun alternative game console. It's going to apply to medicine, architecture, communications — way beyond just gaming and entertainment".

## 4 E-, M- AND V-COMMERCE IN IMMERSIVE VIRTUAL WORLDS

The meaning of the term "electronic commerce" has changed over time. Originally, electronic commerce meant the facilitation of commercial transactions electronically, usually using technology like Electronic Data Interchange (EDI) or Electronic Funds Transfer (EFT) (both introduced in the late 1970's) to send commercial documents like purchase orders or invoices electronically.

Later it came to include activities more precisely termed "Web commerce" -- the purchase of goods and services over the World Wide Web via secure servers (note HTTPS, a special server protocol which encrypts confidential ordering data for customer protection) with e-shopping carts and electronic pay services, like credit card payment authorizations.

In a well-accepted definition, e-commerce is the sharing of business information, maintaining of business relationships, and conducting of business transactions by means of telecommunication networks (Zwass 1996, 3-4). Kalakota and Whinston (1997, 274-275) further defined two main types of e-commerce (EC), business-to-business (B2B) and business-to-consumer (B2C). The latter can be further divided as seen in TABLE 1.

*TABLE 1. Further definition of different types of business-to-consumer e-commerce activities (Kalakota & Whinston, 1997, 275)*

Name	Definition
Collaborative commerce (c-commerce).	In this type of EC, business partners collaborate electronically. Such collaboration frequently occurs between and among business partners along the supply chain.
Business-to-consumers (B2C)	In this case the sellers are organizations, the buyers are individuals.
Consumers to businesses (C2B).	In this case consumers make known a particular need for a product or service, and organizations compete to provide the product or service to consumers.
Consumer-to-consumer (C2C).	In this case an individual sells products (or services) to other individuals.

Name	Definition
Intrabusiness (intraorganizational) commerce	In this case an organization uses EC internally to improve its operations. A special case of this is known as B2E (business to its employees) EC
Government-to-citizens (G2C) and to others	In this case the government provides services to its citizens via EC technologies. Governments can do business with other governments (G2G) as well as with businesses (G2B).
Mobile commerce (m-commerce).	When e-commerce is done in a wireless environment, such as using cell phones to access the Internet, we call it m-commerce.

As seen from the above mentioned references the terms and concepts of e- and m-commerce are not new. However what is meant with the term and what it covers has been evolving quite significantly over the years and has given birth to the concept of v-commerce. V-commerce refers to voice commerce in addition to e-commerce. It is also increasingly being used to refer to “virtual commerce with virtual goods within virtual environments” and that is the definition I will be using in this thesis paper. Note that the v-commerce definition does not incorporate the words “with virtual money”. This is important to realise, since some virtual worlds allow the use of virtual money which is interchangeable with real life currency and thus represent real life earning potential to users. One example of such virtual world is Second Life® (more on the subject in Chapter 5 Case: Second Life).

In relation to 3D immersive virtual worlds six (6) different revenue generating models have been found through research:

1. Own the virtual platform  
Creating the revenue by getting other companies and institutions to rent the platform to do their own business under the other five headings here
2. Sell virtual goods (v-commerce)  
This could range for example from avatar-related goods to music and pictures
3. Create virtual worlds, tools and utilities  
This might include 3D modelling, landscaping and animations
4. Consult

Offer consultation or agency services for other companies involved in the field

5. Use the virtual worlds effectively as an enterprise

Hold online meetings, collaboration, training, education etc. to save money on travel related costs

6. Market

Using marketing within a virtual world as a part of the marketing mix for real world products/services

Many commercial virtual worlds (game-related or otherwise) have adapted one or many of the above-mentioned revenue models. In the following TABLE 2 are listed some of the mixed revenue models.

TABLE 2. Examples of profit models of selected virtual worlds (adapted from Messinger et al. 2009, 207):

	Purpose	Population	Profit model
ActiveWorlds (AlphaWorld)	Education, augmentation,	Educational organisations, mass market	Subscription, extras
SAIC (Forterra Systems)	Education, augmentation	Organisations	Fixed fee / variable fee
HiPiHi	Open	Chinese Asian, mostly female	Subscription, extras, ads
Second Life	Open	Mass market	Subscription, extras, ads
World of Warcraft	Tactical/ thematic objective	Mass market	Fixed fee + subscription, extras

## 5 CASE: SECOND LIFE

“Second Life is a 3D world where everyone you see is a real person and every place you visit is built by people just like you” (Linden Research, Inc. 2013b, date of retrieval 7.12.2013).

Second Life started as a dream of an American entrepreneur Philip Rosendale who founded a company called Linden Research, Inc, better known for its business name Linden Lab, in 1999 (see Figure 4). First the company concentrated in the research and development of haptics (the sense of touch, tactile gaming interface (Robles De La Torre 2009, 1039-1038) and needed themselves a virtual platform to test their products. This line of research was later abandoned in favour of furthering the development of the platform which was then called LindenWorld (Linden Research, Inc. 2013a, date of retrieval 3.12.2013). The platform was dubbed Second Life in preparation for the closed beta launch in November 2002. Second Life was launched to the general public in June 2003.



Figure 4. Second Life avatar of Philip Rosendale (Rymaszewski, Wagner, Wallace, Winters, Ondrejka & Batstone-Cunningham 2006, iv)

## 5.1 Conception and Growth

When Second Life launched in 2003 the virtual world did not have an in-game currency, but the official in-game monetary unit Linden dollar (L\$) was introduced later that year. Linden dollars can be used within the game by users or “residents” as they are called, to buy goods and services from other residents. The currency is tradable, for example, via the LindeX currency exchange, which was introduced in 2005. The currency’s value fluctuates with the prices the residents set for selling and buying L\$.

Linden Lab’s business model was primarily based on subscription fees on all accounts. This was later changed to basic and premium accounts; the main difference being that the basic account itself does not cost a monthly fee and has limited land ownership rights.

The first designs of in-world economy at this point in 2003 included an in-game fee for each item the resident wanted to create and maintain in Second Life, as well as taxes based on the volume and altitude of each of the items (prims, as they are called in-game). This was later changed due to in-world uprising of residents who felt that the tax was hitting the content creators too hard, but leaving social residents open to engage in the content free-of-charge. (Linden Research, Inc. 2013a, date of retrieval 3.12.2013) (Rymaszewski, Wagner, Wallace, Winters, Ondrejka & Batstone-Cunningham 2006, 6). Today Linden Lab is making money via subscriptions (the above mentioned premium accounts), from selling and renting virtual land and from LindeX currency exchange fees.

- **Premium accounts**

- At the time of writing this (December 2013), the premium account costs US\$ 12.34/month or US\$ 89.28/year (including VAT for European users) (Linden Research, Inc. 2013c, date of retrieval 7.12.2013).

- **Selling and renting land**

- Even though residents own their own land and can sell or rent it further, they owe maintenance fees to Linden Lab each month (see TABLE 4 on page 24 for details)

- There are several ways residents can buy land
  - From other residents
  - Auctions for newly created land either with L\$ or US\$ (depending on the auction)
  - Private regions aka Islands (meant for biggest projects) (see TABLE 5 on page 24 for pricing)
    - Full Regions, the premier island product
    - Homestead Regions
      - lower performance than Full Region
      - quiet residential or light commercial use
      - only available for residents with at least one Full Region
    - Openspace Region
      - intended as scenery (forest, countryside or ocean)
      - only available for residents with at least one Full Region
- **Fees on the L\$ currency exchange, LindeX**
  - See more comprehensive explanation in the Chapter 5.2 Second Life and E-Commerce

Linden Lab publishes the size of the Second Life virtual land mass as grid size. The size of the land gives an indication to Linden Lab's revenue from maintenance fees ("rent of the land"). An independent website Gridsurvey.com collects this data (see TABLE 3). The land itself is divided not only by regions, but also by the maturity rating of the content within the said region. The maturity ratings are as follows:

- **General**
  - no sexually explicit content (animations, objects or scenarios)
  - suitable for all audiences
- **Moderate**
  - most of the non-adult activities; such as bars, clubs, malls, galleries, beaches, parks etc.
  - some implicit references to adult content might be allowed (clothing mainly)
- **Adult**
  - can only be searched, viewed or visited by residents who are 18 years old or over

- situated in the adult content mainland, Zindra or any private region designated as Adult
- all regions that have explicit adult behaviour
- all regions with intensely violent content
- depictions of drug use

The grid size and maturity ratings of the areas as of 7<sup>th</sup> of December 2013 are as follows:

TABLE 3. The main grid size of Second Life as of 7<sup>th</sup> of December 2013 (Shepherd, 2013a)

Ownership	Total	General	Moderate	Adult	Offline	Total area (km <sup>2</sup> )
Total	26360	3568	18374	4385	33	1727.53
Linden owned	6985	1621	5016	347	1	457.77
Private estates	19375	1947	13358	4038	32	1269.76

Figure 5 shows, that the grid size reached its peak in May 2010 at over 32 000 regions and has now declined to 26 000 in early December 2013.

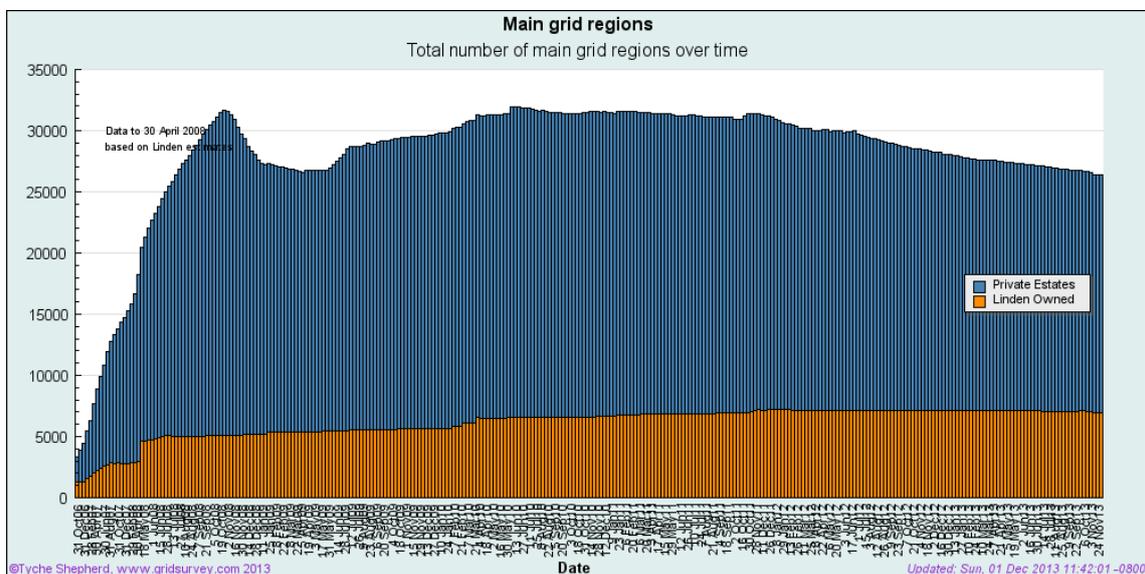


Figure 5. Number of main grid regions from October 2006 to December 2013. Legend: Blue = Private regions, Orange = Linden owned regions (Shepherd 2013a, date of retrieval 7.12.2013)

In the next figure (Figure 6) the maturity rating of the different regions is depicted. It is clearly visible, that the proportion of adult themed content is rising and is now at around 15% of all main grid regions.

The areas with different maturity ratings are depicted as a percentage of the whole (100 %). Legend: Green = General maturity rating, Orange = Moderate maturity rating and Red = Adult maturity rating.

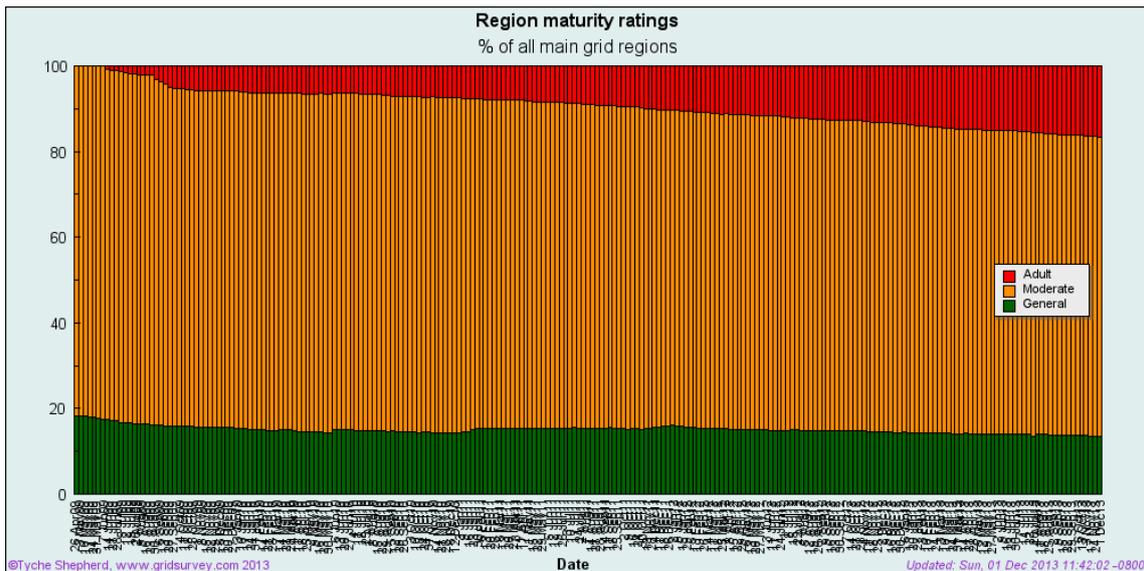


Figure 6. Regions with different maturity rating as percentage of all regions from April 2009 to December 2013 (Shepherd 2013a, date of retrieval 7.12.2013)

TABLE 4. Land use fees in Second life (Linden Research, Inc. 2013f, date of retrieval 7.12.2013)

Additional Land (over 512 sqm)	Parcel Size	Prims per Parcel (approximate)	Monthly Land Use fee*
1/128 Region	512 sqm	117	US\$5
1/32 Region	2,048 sqm	468	US\$15
1/16 Region	4,096 sqm	937	US\$25
1/8 Region	8,192 sqm	1,875	US\$40
1/4 Region	16,384 sqm	3,750	US\$75
1/2 Region	32,768 sqm	7,500	US\$125
Entire Region	65,536 sqm	15,000	US\$195

\* VAT will be added where applicable

The following table (TABLE 5) shows what a Full, Homestead or Openspace Region costs initially (column "Price") and how much is the monthly maintenance cost. All fees are due to be paid to Linden Lab.

TABLE 5. Private region pricing in Second Life (Linden Research, Inc. 2013e, date of retrieval 7.12.2013)

Type	Size	Price	Maintenance Fee (monthly)*
Full Region	65,536 sqm	\$1000	\$295
Homestead Region	65,536 sqm	\$375	\$125
Openspace Region	65,536 sqm	\$250	\$75

\* VAT will be added where applicable

In 2013 Second Life celebrated its tenth anniversary and the company released the following infographic (Figure 7):



Figure 7. Infograph of Second Life released on the 10th anniversary of the 3D virtual world (Linden Research, Inc. 2013d, date of retrieval 15.10.2013)

How many of the 1 million residents that log in every month are premium account holders, the infographic does not explain, but in an article by Jef Reahard (Reahard 2012, date of retrieval 5.12.2013) Linden Lab CEO Rod Humble is quoted saying: "I was taken aback by just how big Second Life was. To be honest, it had fallen off my radar until I got the call offering me the

position [of the CEO of Linden Labs]. And I looked at their numbers; this is a world that has got 1 million people logging in every month, generating well in excess of US\$75 million a year -- it's extremely profitable.”

## **5.2 Second Life and E-Commerce**

Apart from the revenue Linden Lab is generating from Second Life, the users themselves are given many opportunities for making money in-game and exchanging their Linden dollars for other, recognized currencies, such as USD or EUR. Linden Lab's own LindeX allows residents to buy and sell Linden dollars for US dollars. A flat fee of US\$0.30 per purchase of L\$ is applied regardless of the sum in question. Selling L\$ will trigger a fee of 3.5% of the sum in question. Linden Lab has also set circuit breakers for its trading to protect the currency. The limits as per writing this are:

- >10% in any 12-hour period: projected 1 hour halt
- >20% in any 12-hour period: projected 2 hour halt
- >30% in any 12-hour period: close until at least noon the following day

The averages are determined at least hourly (Linden Research, Inc. 2013g, date of retrieval 7.12.2013).

The Linden dollar has been fairly stable throughout its history, the value fluctuating between about L\$250 to L\$270 / US\$1. The graphs below (Figure 8) show the highest and lowest exchange rates and the volume of the exchange in L\$ within a 90-day period between 10<sup>th</sup> of September and 7<sup>th</sup> of December 2013.

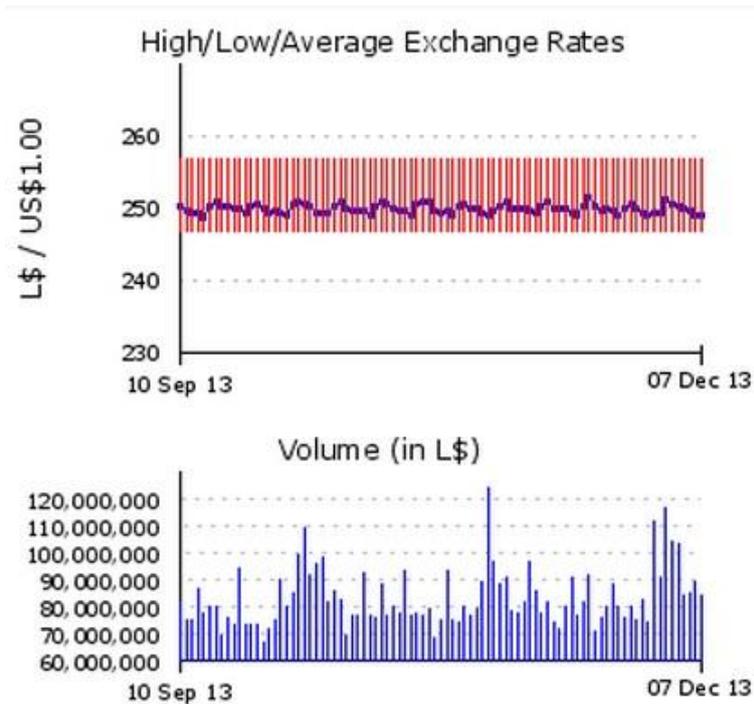


Figure 8. Fluctuation of the exchange rate of L\$ and US\$ and the volume of the exchange between in L\$ a 90-day period (Linden Research, Inc. 2013g, date of retrieval 7.12.2013)

### 5.2.1 Second Life and Making Money

The opportunity to earn “real” money in Second Life has drawn many entrepreneurial people into the world during its ten years in existence. Perhaps the most famous of all the business people within Second Life is Anshe Chung (her real name is Ailin Graef), who was reported (see the cover of the BusinessWeek magazine depicting Graef’s avatar in Figure 9) in 2006 to be the first ever Second Life millionaire. Anshe Chung started with the investment of US\$9.95 for a premium account. She dappled with fashion designs, escort services and event hosting, but then started to build her real estate empire much like one would in real life. She acquired a piece of land, cultivated it, subdivided it and sold or rented it forward. Whereas building magnificent castles and gardens would cost a fortune in real life, in Second Life it’s all about prisms. Once something has been designed and created, let’s say a palm tree, the same tree can be copied and placed indefinitely. She used her proceeds to acquire more and more land and during the process created a name for herself. Her business then grew to commissions for big corporate clients who would pay her to design and build their Second Life presences. Later her business in Second Life has expanded to the real world as well (Hof 2006, date of retrieval 15.9.2013; Anshe Chung Studios 2010, date of retrieval 16.11.2013; Graef 2006, date of retrieval 4.9.2013).



Figure 9. May 1<sup>st</sup> 2006 cover of the BusinessWeek Magazine (Hof 2006, date of retrieval 15.9.2013)

There are many recognized ways of doing business in Second Life and even a guide for aspiring entrepreneurs has been written. The guide “The Entrepreneur’s Guide to Second Life: Making Money in the Metaverse (Terdiman 2007, 15-17) depicts the following fields as possibly lucrative business areas: Fashion (clothing, hair, makeup, jewellery, accessories), land ownership and rental, construction (big and small), adult content creation (including items, animations, venues, escort services etc.) and the objects business (from avatar accessories to cars and furniture).

The fashion industry is, according to Terdiman (2007, 72), the biggest by far if measured by residents involved in it. The creations vary from a small handbag created as an accessory to full suits for some of the subgroups within Second Life. Since the residents can be small or fairly large, they can be human or animal or even a chair. The only limit for the avatar’s appearance is the imagination of the resident. Hence the fashion industry can cater to the needs of the people who want to appear as vampires, dragons, furry animals or walk around with the latest fashions from the real life Paris. The most common way to market one’s creations is a store or a boutique and therefore some land and items for the shop are required. The burgeoning fashionista can turn to the other businesses in Second Life to obtain the necessary land and real estate.

Selling and renting land is the biggest industry within Second Life (Terdiman 2007, 106) when calculated by the price. Obtaining large areas of “uncultivated” land, terraforming it, subdividing it

to smaller plots and selling or renting it on has the potential to make the land owner a relatively large sums of money – which can then be transferred to real world currencies.

Real estate, the designing and building houses, shops, castles, chalets, medieval village inns, huge office towers, space stations etc., can also be a big business. Many of the beautiful and efficient designs can sell for large sums of money and perhaps are the only competitor to land ownership when measured by the highest prices. The size of these built areas can vary from a small prefab house to a designing and building whole sims (regions or private islands, for example).

Where there are people, there is sex. Just like in the real world, the age-old saying “sex sells” also holds true in Second Life. There are a lot of adult rated content within, from life-like body appendices (the default Second Life avatar is sexless underneath its clothes) to fully furnished venues for simulated adult activity. These areas are blocked off from underage users.

Another of the business models the guide introduces is the interactive businesses. What is meant by interactive here is that the product or service itself requires the residents' presence in most cases and is meant to either entertain or inform the other residents. This could mean managing a venue (a bar, night club, beach party, concert, stand-up comedy show, play etc.), running a newspaper, offering educational services (e.g. teaching classes) or working as one of the entertainers in the above mentioned venues. Whereas this is categorised as a business area where the transactions are relatively small, there's a market there also.

### **5.2.2 Second Life and Saving Money**

In addition to making money within and from interactions in Second Life, discussion is ongoing whether Second Life has value as an e-collaboration tool (Kock 2008, 8-10; Anthes 2007, 34-35). Kock discusses the results of the 2007 International Conference on Information Systems, where many of the users of virtual worlds still doubted if the user interface of e.g. Second Life would ever allow efficient e-collaboration. The users at the conference found the CPU intensive program and its interface clumsy. Still many big companies, including IBM created significant presences in Second Life to bring their clients to meet the staff, to hold meetings and conferences and, perhaps, to work on collaborative projects (IBM Corp. 2007, date of retrieval 6.12.2013). Just building a venue for such is not yet enough, as seen on the next page:

“I walked into a huge, round auditorium called IBM Theatre I. The seats were all empty, and the stage was bare save for a big white board with some semi-interesting techno-items written on it, each followed by an ordinary Web address. Problem was, the addresses were grayed out, and when I clicked on them, nothing happened. Advice to vendors: If you are going to play this game, make sure it works.” (Anthes, 2007, 34)

Kock (2008, 8) predicts, that virtual worlds become important in B2C or even more potentially C2C trade and marketing, since a virtual world is exceptionally effective at putting people who are very far apart geographically together in the same room, albeit through an avatar.

### **5.3 Second Life – a Personal Experience**

In this chapter I will describe my own experience as a “newbie<sup>5</sup>” in search of commercial endeavours in Second Life. I had played many online games prior to stepping into Second Life and felt that I was quite well prepared to handle the user interface and the challenges of navigating this virtual world. Before logging in the first time, one has to install a viewer. I chose to install Linden Lab’s own Second Life viewer, but other options are available (Linden Research, Inc. 2013h, date of retrieval 12.12.2013). Upon creating my account I was prompted to give my avatar a name and choose one of the available “surnames” from a list provided. I emerged into the world as lxChel Azalee. I was also asked if I would like to purchase any of the in-world currency, Linden dollars. I chose to pass on the option, since earning money in-game could be an option for me. At this point my future within the virtual world was still open.

The first place I saw was called Orientation Island. There were some simple exercises for me to try out in order to master the game controls. I found the instructions and exercises somewhat bewildering despite of my online games experience. Eventually I was able to move forwards and landed in a place that resembled a park with a fountain in the middle and a lone resident sitting on a bench. Upon seeing me he jumped up and ran to me wanting to ask me questions. I was thrilled, thinking that this new place was very welcoming and finding other residents to talk to seemed to be very easy. As it turned out, this other resident was a newbie, just like me. He had entered Second Life in order to conduct interviews for his University class and had found the world very empty and confusing. We talked for a while and managed together to find a way to move into an area with more people (Second Life viewer has a function that enables searching any events that are happening around the virtual world).

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<sup>5</sup> a person who has recently started a particular activity. Especially: a newcomer to cyberspace (Merriam-Webster, Inc., 2013)

This new area looked like a town square with market stalls (empty) and park benches. I went on looking for any shops or other commercial activities and my companion went off to interview the residents that were milling about.

I found many different small boutiques selling ladies clothing and accessories, as well as new hairstyles, jewellery, shoes and makeup (see Figure 10). But what I did not find was any sales personnel or shop owners. As I was very “poor” in-game I could not afford to buy anything new for my avatar and had to move on to try and find other commercial or educational establishments.

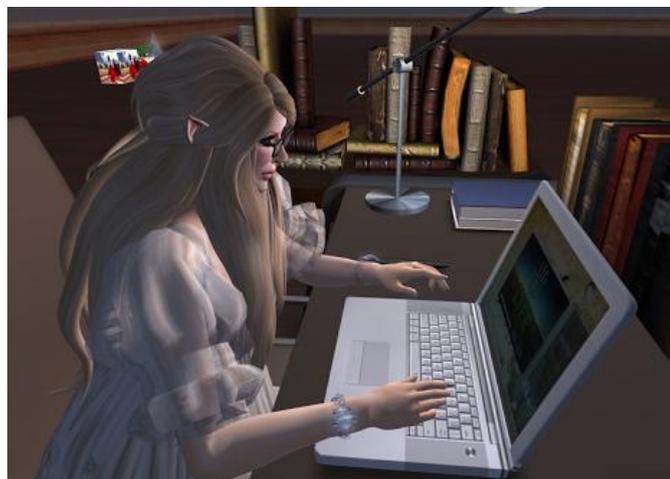


Figure 10. IxChel Azalee visiting a shop in Second Life (screenshot by the author)

Via the in-game search function I found that there was a class starting in one of the schools for newbies like me. The lecture was titled “How to start the journey through your Second Life”. I was thrilled to take part. I found the class easily enough through the in-game teleportation system and sat down in a room that looked like any real world classroom would. We had chairs and small tables and in front of the class there was a huge white screen. This prop was not used, however, since our instructor chose to explain things by speaking through the voice-chat function in-game, as well as accentuate the keyboard commands he was explaining to us by typing them into the in-game chat window. I hung around after the class and asked the instructor some questions about Second Life and entrepreneurship. He explained that he had been a resident for more than four

years now, and had made his living in-game by taking part in many marketing or market surveys<sup>6</sup>, camping (getting paid to stay at the promotable location) and by donations from his students. I of course felt a little embarrassed for not having paid anything for the class, but he hurried to explain that the newbie classes were never making him any money, since new residents seldom had any to give. He made his many from object-creation lessons that he held biweekly at one of the sandboxes around. He invited me to join the class when I wanted to learn to create and play around with the objects and textures in Second Life.

I was very happy after my first day in Second Life for having found such activities that I could participate in. Unfortunately my luck did not last and the next several days (I logged in to Second Life every couple of days for the next two weeks) my efforts to find entrepreneurs in Second Life came to nothing. At this point I cheated and called my real world friend Alicia Hoang Sario. She has many identities within Second Life. One of them is Arielle Lavecchia (see Figure 11). She designs, creates and sells women's gowns under the name "Drop Dead Gorgeous Designs" in Second Life (Linden Research, Inc. 2013i, date of retrieval 10.12.2013). She also extends her business from Second Life to real life by offering a service for Tarot card reading – the readings are done in the real world. She promised to come to my rescue and give me an insight into entrepreneurial Second Life.



*Figure 11. Arielle Lavecchia at her computer in Second Life (screenshot by Alicia Hoang Sario)*

We sat down together to talk about Second Life. She said she found the business climate of Second Life very competitive as she had chosen to enter the commercial life through women's

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<sup>6</sup> See for example <http://gigaom.com/2007/04/04/3-reasons-why-marketing-in-second-life-doesnt-work/> (date of retrieval 12.10.2013).

fashions which is the most numerous business model within Second Life (Terdiman 2007, 72-73). She explained to me how her own desire to look good within the game had lead her to learn how to design and create objects for Second Life and how she had gotten good feedback on her dresses from other residents. Her idea was not to make a huge profit with her designs, but to cover the costs of importing her custom created meshes (3D models). Residents are required to pay an upload fee for any new mesh content they upload to Second Life. This fee is based on the impact the new objects has on the world, it's weight against lang usage limits<sup>7</sup>. She's been happy with the sales so far – they have more than covered the costs of her few new meshes.

As stated, Arielle Lavecchia is not the only name Alicia Hoang Sario is called by in Second Life. Kirin Umino is another of her virtual identities and Kirin designs and builds cyberpunk and space –oriented 'housing' (see Figure 12) by commission as well as sells his wares online in the Marketplace ( (Linden Research, Inc. 2013j, date of retrieval 10.12.2013). This business, Alicia Hoang Sario states, brings in a relatively large sum of money per commission, but as it is very time-consuming, it has so far only been a hobby for her.



Figure 12. Kirin Umino at the main computer of his space station in Second Life (screenshot by Alicia Hoang Sario)

After the interview I felt better about the possibilities of finding meaningful and gainful business opportunities within Second Life and I went, once again, to look for other people to talk to. Unfortunately the adult content trend, which is clearly visible from Figure 6 (on page 23), was made blatantly obvious to me at this point. I could not find anyone in the General-rated areas, but

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<sup>7</sup> I could not find an up-to-date prize list or calculation formula for this fee

I could clearly see from the map, that the residents online were congregating in the Adult-rated areas. I did not want to venture there, so my efforts proved in vain.

To conclude I must say, that the experience I had in Second Life was disappointing from the general business point-of-view. I would not have been able to really interview anyone who was currently actively seeking to sell virtual goods in Second Life had I not known such a person in real life. But that said the world itself left my breathless at times. Some of the visual effects, designs and landscapes were truly ingenious, beautiful and creative.

## 6 CONCLUSIONS AND DISCUSSION

One purpose of this thesis was to determine what a virtual world is and how it can be defined. In Chapter 2 'What is an Immersive Virtual World?' I give several characterisations of a virtual world and describe the differences between game-oriented and open-ended worlds. Another purpose of this thesis was to list the commercially available 3D virtual worlds and analyse their potential for commercial benchmarking and future design and development purposes. This goal was difficult to meet, since the number of commercial virtual worlds can be counted in hundreds (see the APPENDIX for a selection). I was able to determine, that there's six (6) main revenue-creating models for a business to adopt and have given examples of the different approaches existing companies have taken. A further area of study is the newly re-emerged micropayment method, which has been adopted by many recently launched games (such as Supercell's Clash of Clans and many Facebook and mobile games). Microtransactions themselves are not a new phenomenon, but the first generation methods did not gain market share (Párhonyi, Nieuwenhuis & Pras 2005, 345-359). In the Chapter 5 Case: Second Life I took a closer look at the viability of Second Life as a business as well as discussed the possibilities of its residents to conduct business within the virtual world.

The global economy suffered a downturn in 2009 and is still recovering as I write this. Many companies had ventured into virtual worlds, especially Second Life, but withdrew when other projects were deemed more important and lucrative in the tightening competition for survival. I feel that despite the lull in interest there's a lot of potential within virtual words for either making money or for saving it via e-collaboration. Another interesting development is the Oculus VR's Rift goggles, which might fulfil the promise of 3D virtual reality for home (Velazco 2013, date of retrieval 15.12.2013; Oculus VR, Inc. 2013, date of retrieval 14.12.2013).

Philip Rosendale, the founder and former CEO of Linden Research, Inc., the creator of Second Life is also working on a new virtual world project (High Fidelity Inc. 2013, date of retrieval 12.12.2013). Not much of the project is yet known, but the company's website states: "We're building a new virtual world enabling rich avatar interactions driven by sensor-equipped hardware, simulated and served by devices (phones, tablets and laptops/desktops) contributed by end-users". This looks particularly interesting, because I think one of the reasons for declining business interest in Second Life is the rise of the adult themed content. Many businesses might be scared away from a virtual world, whose reputation has been tarnished (Cook 2013, date of retrieval 12.12.2013; Connolly 2007, date of retrieval 12.12.2013).

There is a lot of research in different scientific disciplines which try to define and explain the concept of an avatar (e.g. computing, marketing, psychology, communication etc.). In this thesis I have opened the term and defined some of the terminology and history of an avatar. I have also given examples of the use and provided some pictures of different avatars. The avatar itself is an interesting concept and from a personal point-of-view I can say, that I have grown attached to some of them which I have used in different virtual environments. Since the avatar in many of the game-oriented virtual worlds is something the player spends a lot of time developing and then again in Second Life the best selling products were created and sold to make your avatar look better, would a portable avatar that could be used in many different worlds potentially be worth a lot of money? Would this be technically viable and where would the information be stored?

There are no virtual shopping malls. This concept has not yet been realised, but I think it would be a very interesting field for future research and development. Would it be commercially viable and would it attract enough companies to participate? Would the virtual world look like a present day, real life shopping centre or would it be futuristic and creative? Would each of the 'shops' or venues in this new shopping place be separate, individual virtual environments which would be run by the proprietors themselves or would there be a service provider who runs it for them? Where and how could people create the one avatar and enter all these places with it? Could the avatar contain basic customer information, perhaps e.g. colour preferences and shoe size of the real person behind it?

The concept of a movable avatar could be linked back to the idea of single log-in that I introduced at the beginning of this thesis. The single-log in to several shopping malls or entertainment virtual worlds would make it very easy for any user to explore new opportunities and new environments, but would it also make it possible to leave a certain world easily and permanently? Does the affection and attachment we feel (see for example Banks & Bowman 2013; Watkins & Molesworth 2012 and Wolfendale 2007) towards our avatars make us stay with one virtual environment longer than we would if we could take our avatar with us when we leave? If it would be easier to uproot and move on, would this leave the proprietors of the virtual shopping mall more vulnerable? Or would it make it easier, since the customers could always come back and continue shopping after visiting another place for a while?

I started writing this thesis at the time when the hype about virtual worlds and Second Life was at its crest. It has been a very profound learning experience for me to realise, that the initial excitement and enthusiasm for the subject can ebb and flow with the public perception and

publicity around it. It was very hard for a burgeoning researcher like me to pick up the thread of revenue-creating ideas from the negative atmosphere some of the evolution of activities within e.g. Second Life accumulated in the media. In the end, the glimmer of optimism generated by the new and interesting ventures like Supercell, Oculus VR and High Fidelity were enough to rekindle my enthusiasm and trust in the subject itself. I firmly believe that the future is in virtual worlds and e-commerce as defined in this thesis.

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## APPENDIX

This appendix is a list of virtual worlds. This list includes a broad section of available virtual worlds. It makes no distinction between 2D and 3D applications. For reference, some Second Life link pages have been added. Some items are categorized as virtual worlds and MMORPG's, where I have felt the community within the game is strong and deserves to be called a world instead of a game.

Sources: Virtual Worlds Research at <http://worlds.ruc.dk> and various other web pages.

NAME	CATEGORY	URL
3B	Uncategorized	<a href="http://3b.net/browser/newhome.html">http://3b.net/browser/newhome.html</a>
3D City	Virtual world	<a href="http://www.3d-city.net/">http://www.3d-city.net/</a>
3Dee Virtual Reality	Virtual world	<a href="http://www.funsites.com/in-virtu.html">http://www.funsites.com/in-virtu.html</a>
3Di OpenSim	Virtual world	<a href="http://3di.jp/en/">http://3di.jp/en/</a>
3DXplorer	Virtual world	<a href="http://www.3dexplorer.com/">http://www.3dexplorer.com/</a>
3rd Rock Grid	Virtual world	<a href="http://www.3drockgrid.com/">http://www.3drockgrid.com/</a>
8D World	Virtual world	<a href="http://www.8dworld.com/">http://www.8dworld.com/</a>
Abyss Museum of Ocean Science	Second Life link	<a href="http://slurl.com/secondlife/Gun/55/42/82">http://slurl.com/secondlife/Gun/55/42/82</a>
Action AllStars	Virtual world	<a href="http://www.actionallstars.com/reg/">http://www.actionallstars.com/reg/</a>
ActionJetz	Virtual world	<a href="http://www.actionjetz.com/">http://www.actionjetz.com/</a>
Active Worlds	Virtual world	<a href="http://www.activeworlds.com/">http://www.activeworlds.com/</a>
Active Worlds Educational Universe	Virtual world	<a href="http://www.activeworlds.com/edu/awedu.asp">http://www.activeworlds.com/edu/awedu.asp</a>
Adventure Rock	Virtual world, Online world	<a href="http://www.bbc.co.uk/cbbc/adventurerock/">http://www.bbc.co.uk/cbbc/adventurerock/</a>
Afterworld	Virtual world, MMOG	<a href="http://www.afterworld.ru/">http://www.afterworld.ru/</a>
Agape World Fellowship	Virtual world	<a href="http://www.agapeworldfellowship.org/">http://www.agapeworldfellowship.org/</a>
Ai Sp@ce	Virtual world	<a href="http://ai-sp.jp/">http://ai-sp.jp/</a>
Alganon	MMORPG, Virtual world	<a href="http://www.alganon.com/">http://www.alganon.com/</a>
All Points Bulletin	Virtual world, MMOG	<a href="http://www.apb.com/">http://www.apb.com/</a>
AllBoyArcade	Virtual world	<a href="http://www.allboyarcade.com/">http://www.allboyarcade.com/</a>
Anarchy Online	MMORPG, Virtual world	<a href="http://www.anarchy-online.com/">http://www.anarchy-online.com/</a>
Arounder	Virtual world	<a href="http://www.arounder.com/">http://www.arounder.com/</a>
Ashen Empires	Virtual world, MMORPG	<a href="http://www.ashenempires.com/">http://www.ashenempires.com/</a>
Association of Virtual Worlds	Virtual world	<a href="http://www.associationofvirtualworlds.com/">http://www.associationofvirtualworlds.com/</a>
Avatar Hangout	Virtual world	<a href="http://www.avatarhangout.com/">http://www.avatarhangout.com/</a>
Avatar Reality	Virtual world	<a href="http://www.avatar-reality.com/">http://www.avatar-reality.com/</a>
AWEDU	Virtual world	<a href="http://edu.activeworlds.com/">http://edu.activeworlds.com/</a>
AWOLnow	Virtual world	<a href="http://www.awolnow.com/">http://www.awolnow.com/</a>
AWOMO	Virtual world	<a href="http://www.awomo.com/">http://www.awomo.com/</a>
BaoBao BengBeng	Virtual world	<a href="http://www.bb-bb.cn/">http://www.bb-bb.cn/</a>
Barbie Girls	Virtual world	<a href="http://barbiegirls.com/">http://barbiegirls.com/</a>
Beanie Babies 2.0	Virtual world	<a href="http://beanie-babies.ty.com/modules/login/tyfree.cfm">http://beanie-babies.ty.com/modules/login/tyfree.cfm</a>
Be-Bratz	Virtual world	<a href="http://www.be-bratz.com/">http://www.be-bratz.com/</a>
Bella Sara	Virtual world	<a href="http://www.bellasara.com/">http://www.bellasara.com/</a>
Blaxxun	Virtual world	<a href="http://blaxxun.keemmo.net/portal.php">http://blaxxun.keemmo.net/portal.php</a>

NAME	CATEGORY	URL
Blue Mars	Virtual world	<a href="http://bluemarsonline.com/">http://bluemarsonline.com/</a>
Bobba Bar	Virtual environment	<a href="http://www.bobba.com/">http://www.bobba.com/</a>
BoomBang	Virtual world	<a href="http://www.boombang.tv/eng/index.php">http://www.boombang.tv/eng/index.php</a>
Buildabearville	Virtual world	<a href="http://www.buildabearville.com/">http://www.buildabearville.com/</a>
Bunnytown	Virtual world	<a href="http://atv.disney.go.com/playhouse/bunnytown/index.html">http://atv.disney.go.com/playhouse/bunnytown/index.html</a>
C.U.O.N. Grid	Virtual world	<a href="http://sim-linuxmain.org:8081/CuonGrid/index.html">http://sim-linuxmain.org:8081/CuonGrid/index.html</a>
Cackleberries	Virtual world	<a href="http://cackleberries.com/">http://cackleberries.com/</a>
CampPete	Virtual world	<a href="http://play.camppete.com/">http://play.camppete.com/</a>
Cartoon Doll Emporium	Virtual world	<a href="http://www.cartoondollemporium.com/">http://www.cartoondollemporium.com/</a>
Caspian Learning	Virtual world	<a href="http://www.caspianlearning.co.uk/technology.html">http://www.caspianlearning.co.uk/technology.html</a>
Chamber of Chat	MMORPG, Virtual world	<a href="http://www.chamberofchat.com/">http://www.chamberofchat.com/</a>
Chipuya Town	MMORPG, Virtual world	<a href="http://chipu.jp/pc/">http://chipu.jp/pc/</a>
Chobots	Online world	<a href="http://www.chobots.com/">http://www.chobots.com/</a>
Chuggington	Virtual world	<a href="http://chuggington.com/">http://chuggington.com/</a>
Club BK	Virtual world	<a href="http://clubbk.com/">http://clubbk.com/</a>
Club Cooe	Uncategorized	<a href="http://www.clubcooe.com/">http://www.clubcooe.com/</a>
Club Penguin	Virtual world	<a href="http://clubpenguin.com/">http://clubpenguin.com/</a>
Club Pony Pals	Virtual world	<a href="http://www.clubponypals.com/">http://www.clubponypals.com/</a>
Cyberlandia	Virtual world	<a href="http://www.cyberlandia.net/">http://www.cyberlandia.net/</a>
Cybernet Worlds	Virtual world	<a href="http://www.cybernetworlds.com/">http://www.cybernetworlds.com/</a>
Cybertown	Virtual world	<a href="http://www.cybertown.com/">http://www.cybertown.com/</a>
DDM Collective in Second Life	Second Life link	<a href="http://slurl.com/secondlife/The%20Collective/6/52/34">http://slurl.com/secondlife/The%20Collective/6/52/34</a>
Digital Dollhouse	Virtual world	<a href="http://www.digitaldollhouse.com/">http://www.digitaldollhouse.com/</a>
Digital Space	Virtual world	<a href="http://www.digitalspace.com/">http://www.digitalspace.com/</a>
DinoKids	Virtual world	<a href="http://dinokids.com/">http://dinokids.com/</a>
Dinosaur Junction	Online world	<a href="http://www.dinosaurjunction.com/">http://www.dinosaurjunction.com/</a>
Discovery Education Netork Second Life	Second Life link	<a href="http://slurl.com/secondlife/Eduisland%20II/91/101/22">http://slurl.com/secondlife/Eduisland%20II/91/101/22</a>
Disney's Toontown	Virtual World, MMOG	<a href="http://toontown.go.com/">http://toontown.go.com/</a>
Dizzywood	Virtual world	<a href="http://www.dizzywood.com/">http://www.dizzywood.com/</a>
Don Bain's Virtual Guidebooks	Uncategorized	<a href="http://www.virtualguidebooks.com/">http://www.virtualguidebooks.com/</a>
Dreamworld	Virtual world	<a href="http://www.virtualworld.sl/">http://www.virtualworld.sl/</a>
Dynasty Warriors Online	Uncategorized	<a href="http://www.musou-online.jp/index.asp">http://www.musou-online.jp/index.asp</a>
Edusim	Virtual world	<a href="http://edusim3d.com/">http://edusim3d.com/</a>
Eekoworld	Virtual world	<a href="http://pbskids.org/eekoworld/">http://pbskids.org/eekoworld/</a>
Ekoloko	Virtual world	<a href="http://play.ekoloko.com/ekoloko/index.html">http://play.ekoloko.com/ekoloko/index.html</a>
Emerald Network	Uncategorized	<a href="http://www.emeraldnetwork.com/">http://www.emeraldnetwork.com/</a>
Empire of Sports	Virtual world	<a href="https://www.empireofsports.com/">https://www.empireofsports.com/</a>
English Village	Second Life link	<a href="http://slurl.com/secondlife/English%20Village/136/117/108">http://slurl.com/secondlife/English%20Village/136/117/108</a>
EnterZon	Online world	<a href="http://enterzon.com/">http://enterzon.com/</a>
Entropy Universe	Virtual world, MMORPG	<a href="http://www.entropiauniverse.com/">http://www.entropiauniverse.com/</a>
Etopia Village	Second Life link	<a href="http://slurl.com/secondlife/Etopia%20Island/192/55/22">http://slurl.com/secondlife/Etopia%20Island/192/55/22</a>
Euro VR	Uncategorized	<a href="http://www.eurovr.com/index.php?title=Welcome_to_Euro_VR">http://www.eurovr.com/index.php?title=Welcome_to_Euro_VR</a>
EVE Online	MMORPG, Virtual world	<a href="http://www.eveonline.com/">http://www.eveonline.com/</a>
Everyscape	Virtual world	<a href="http://www.everyscape.com/">http://www.everyscape.com/</a>
Evolver	Virtual world	<a href="http://evolver.com/">http://evolver.com/</a>
ExitReality	Virtual world	<a href="http://www.exitreality.com/">http://www.exitreality.com/</a>
Exploratorium, The	Second Life link	<a href="http://slurl.com/secondlife/Exploratorium/159/120/23">http://slurl.com/secondlife/Exploratorium/159/120/23</a>

NAME	CATEGORY	URL
Fantage	Virtual world	<a href="http://fantage.com/">http://fantage.com/</a>
Fashion Fantasy Game	Virtual world	<a href="http://www.fashionfantasygame.com/">http://www.fashionfantasygame.com/</a>
Fiesta	Virtual world	<a href="http://fiesta.outspark.com/">http://fiesta.outspark.com/</a>
Football Superstars	Virtual World, MMORPG	<a href="http://footballsuperstars.com/">http://footballsuperstars.com/</a>
Forbidden City	Virtual world	<a href="http://www.beyondspaceandtime.org/">http://www.beyondspaceandtime.org/</a>
Forterra, Inc	Virtual world	<a href="http://www.forterrainc.com/">http://www.forterrainc.com/</a>
Fould Whispering, Strange Matters	Second Life link	<a href="http://slurl.com/secondlife/Macbeth/44/54/54">http://slurl.com/secondlife/Macbeth/44/54/54</a>
FrancoGrid	Metaverse	<a href="http://www.francogrid.com/">http://www.francogrid.com/</a>
Franktown Rocks	Virtual world	<a href="http://www.franktownrocks.com/">http://www.franktownrocks.com/</a>
Free Realms	Virtual world	<a href="http://www.freerealms.com/">http://www.freerealms.com/</a>
Freggers	Virtual world	<a href="http://www.freggers.com/">http://www.freggers.com/</a>
Frenzoo	Online world	<a href="http://www.frenzoo.com/">http://www.frenzoo.com/</a>
Fresbo World	Virtual world	<a href="http://www.fresboworld.com/v2/">http://www.fresboworld.com/v2/</a>
FriendsHangout	Virtual world	<a href="http://www.friendshangout.com/">http://www.friendshangout.com/</a>
Full Screen QTVR	Uncategorized	<a href="http://www.fullscreenqtv.com/">http://www.fullscreenqtv.com/</a>
Gaia Online	Virtual world	<a href="http://www.gaiaonline.com/">http://www.gaiaonline.com/</a>
Garden Party	Online world	<a href="http://www.gardenpartyworld.com/">http://www.gardenpartyworld.com/</a>
Genome Island	Second Life link	<a href="http://slurl.com/secondlife/Genome/174/4/23">http://slurl.com/secondlife/Genome/174/4/23</a>
GeoSim Philly	Uncategorized	<a href="http://www.geosimphilly.com/">http://www.geosimphilly.com/</a>
GermanGrid	3D world	<a href="http://www.germangrid.eu/frontend/welcome">http://www.germangrid.eu/frontend/welcome</a>
GiantGrid	Virtual world	<a href="http://www.giantgrid.nl/">http://www.giantgrid.nl/</a>
Global Kids on the Main Grid	Second Life link	<a href="http://slurl.com/secondlife/Teaching/226/160/25">http://slurl.com/secondlife/Teaching/226/160/25</a>
Gogofrog	Virtual world	<a href="http://www.gogofrog.com/">http://www.gogofrog.com/</a>
Google Earth	Mirror world	<a href="http://earth.google.com/">http://earth.google.com/</a>
goSupermodel	Online world	<a href="http://us.gosupermodel.com/">http://us.gosupermodel.com/</a>
Grid4Us	Virtual world	<a href="http://grid4us.net/index_en.php?page=home&amp;btn=1">http://grid4us.net/index_en.php?page=home&amp;btn=1</a>
Guppylife	Virtual world, MMO	<a href="http://www.guppyworks.com/">http://www.guppyworks.com/</a>
Habbo Hotel	Virtual world	<a href="http://www.habbohotel.com/">http://www.habbohotel.com/</a>
Handipoints	MMORPG, Virtual world	<a href="http://www.handipoints.com/">http://www.handipoints.com/</a>
Healthinfo Island	Second Life link	<a href="http://slurl.com/secondlife/Healthinfo%20Island/132/140/23">http://slurl.com/secondlife/Healthinfo%20Island/132/140/23</a>
Hello Kitty Online	MMORPG, Virtual world	<a href="http://en.hellokittyonline.eu/">http://en.hellokittyonline.eu/</a>
Hello World! VR Mag	Uncategorized	<a href="http://www.vrmag.org/">http://www.vrmag.org/</a>
Heritage Key	Online world	<a href="http://heritage-key.com/">http://heritage-key.com/</a>
Hip Chicas	Virtual world	<a href="http://hipchicas.com/site/php/index.php?lang=1">http://hipchicas.com/site/php/index.php?lang=1</a>
HiPiHi	Second Life, Virtual world	<a href="http://www.hipihi.com/index_en.html">http://www.hipihi.com/index_en.html</a>
Ikariam	Online world	<a href="http://en.ikariam.com/">http://en.ikariam.com/</a>
Imaging Place, The	Second Life link	<a href="http://slurl.com/secondlife/Emerson%20Island/119/136/62">http://slurl.com/secondlife/Emerson%20Island/119/136/62</a>
IMVU	Uncategorized	<a href="http://www.imvu.com">http://www.imvu.com</a>
Infoisland, Librarians in Second Life	Second Life link	<a href="http://slurl.com/secondlife/Info%20Island%20International/114/238/3">http://slurl.com/secondlife/Info%20Island%20International/114/238/3</a>
International Schools Island	Second Life link	<a href="http://slurl.com/secondlife/International%20Schools/83/61/25">http://slurl.com/secondlife/International%20Schools/83/61/25</a>
International Spaceport Museum	Second Life link	<a href="http://slurl.com/secondlife/Spaceport%20Alpha/50/80/24">http://slurl.com/secondlife/Spaceport%20Alpha/50/80/24</a>
iPalaces	Virtual world	<a href="http://www.ipalaces.net/">http://www.ipalaces.net/</a>
Island of Svarga	Second Life link	<a href="http://slurl.com/secondlife/Svarga/7/124/22">http://slurl.com/secondlife/Svarga/7/124/22</a>
ISTE Island	Second Life link	<a href="http://slurl.com/secondlife/ISTE%20Island/91/58/31">http://slurl.com/secondlife/ISTE%20Island/91/58/31</a>
Ivory Tower of Prims	Second Life link	<a href="http://slurl.com/secondlife/Natoma/204/70/25/">http://slurl.com/secondlife/Natoma/204/70/25/</a>
Jamland Opensim Grid	Virtual world	<a href="http://www.jamland.de/mediawiki/index.php/Hauptseite">http://www.jamland.de/mediawiki/index.php/Hauptseite</a>
Jo Jo Fit	Virtual world	<a href="http://jojofit.com/">http://jojofit.com/</a>

NAME	CATEGORY	URL
Jokaydia	Second Life link	<a href="http://slurl.com/secondlife/jokaydia/105/148/23">http://slurl.com/secondlife/jokaydia/105/148/23</a>
Jumpstart 3D Virtual World	Virtual world	<a href="http://www.jumpstart.com/">http://www.jumpstart.com/</a>
Just Leap In	Uncategorized	<a href="http://www.justleapin.com/">http://www.justleapin.com/</a>
Kabillion	Online world	<a href="http://www.kabillion.com/">http://www.kabillion.com/</a>
Kaneva	Virtual world	<a href="http://www.kaneva.com/">http://www.kaneva.com/</a>
Karga: The Other World	Virtual world	<a href="http://www.aptalkarga.com/en/entry.html">http://www.aptalkarga.com/en/entry.html</a>
KetnetKick	Online world	<a href="http://www.ketnet.be/ketnetkick/home">http://www.ketnet.be/ketnetkick/home</a>
Kids.com	Virtual world	<a href="http://www.kidscom.com/">http://www.kidscom.com/</a>
KingsAge	Virtual world	<a href="http://www.kingsage.com/">http://www.kingsage.com/</a>
Kiwi Heroes	Virtual world	<a href="http://www.kiwiheroes.com/">http://www.kiwiheroes.com/</a>
Koinup	Virtual world	<a href="http://www.koinup.com/">http://www.koinup.com/</a>
Konstruktion Zone	Virtual world	<a href="http://konstruktionzone.com">http://konstruktionzone.com</a>
Kookeys	Online world	<a href="http://www.kookeys.com/">http://www.kookeys.com/</a>
Lasuni	Virtual world	<a href="http://lasuni.com/">http://lasuni.com/</a>
Literature Alive	Second Life link	<a href="http://slurl.com/secondlife/Eduisland%20II/191/205/22">http://slurl.com/secondlife/Eduisland%20II/191/205/22</a>
Littlest Pet Shop Online	Virtual world	<a href="http://lpso.com/">http://lpso.com/</a>
Liv World	Online world	<a href="http://www.livworld.com/">http://www.livworld.com/</a>
Logicamp	Virtual world	<a href="http://www.logicamp.com/">http://www.logicamp.com/</a>
LoudCrowd	Online world	<a href="http://loudcrowd.com/start">http://loudcrowd.com/start</a>
Maid Marian	MMORPG, Virtual world	<a href="http://www.maidmarian.com/">http://www.maidmarian.com/</a>
Manor, The	Uncategorized	<a href="http://www.madwolfsw.com/">http://www.madwolfsw.com/</a>
McWorld	Virtual world	<a href="http://vw.happymeal.com/en_US/">http://vw.happymeal.com/en_US/</a>
Me2	Online world	<a href="http://www.me2universe.com/">http://www.me2universe.com/</a>
Media Grid: Immersive Education	Online world	<a href="http://immersiveeducation.org/">http://immersiveeducation.org/</a>
Meet-Me	Uncategorized	<a href="http://www.meet-me.jp/">http://www.meet-me.jp/</a>
Meetsee	Virtual world	<a href="http://meetsee.com/">http://meetsee.com/</a>
Meez	Virtual world	<a href="http://www.meez.com/">http://www.meez.com/</a>
Meta7	Virtual world	<a href="http://www.meta7.com/">http://www.meta7.com/</a>
Metropolis Metaversum	Virtual world	<a href="http://www.hypergrid.org/">http://www.hypergrid.org/</a>
Millsberry	Uncategorized	<a href="http://millsberry.com/">http://millsberry.com/</a>
Mini Friday	Virtual world	<a href="http://www.minifriday.com/">http://www.minifriday.com/</a>
Miniego	Online world	<a href="http://miniego.com/">http://miniego.com/</a>
Minyanland	Virtual world	<a href="http://www.minyanland.com/">http://www.minyanland.com/</a>
Miss Bimbo	Virtual world	<a href="http://www.missbimbo.com/">http://www.missbimbo.com/</a>
Mobage Town	Virtual world	<a href="http://www.mbga.jp/pc/">http://www.mbga.jp/pc/</a>
Moipal	Uncategorized	<a href="http://www.moipal.com/">http://www.moipal.com/</a>
Moo Canada Eh?	Virtual world	<a href="http://www.moo.ca/splash">http://www.moo.ca/splash</a>
Moove	Virtual world	<a href="http://moove.com/">http://moove.com/</a>
Multiverse	Virtual world	<a href="http://www.multiverse.net/">http://www.multiverse.net/</a>
Muniz Online	Online world	<a href="http://www.munizonline.com/">http://www.munizonline.com/</a>
Muse	Virtual world	<a href="http://www.musecorp.com/">http://www.musecorp.com/</a>
Muxlim Pal	Virtual world	<a href="http://pal.muxlim.com/">http://pal.muxlim.com/</a>
My Animal Family	Online world	<a href="http://www.mafkidsclub.com/">http://www.mafkidsclub.com/</a>
MyePets	Virtual world	<a href="http://www.myepets.com/">http://www.myepets.com/</a>
MyOpenGrid	Virtual world	<a href="http://www.myopengrid.com/index.php?page=home&amp;btn=1">http://www.myopengrid.com/index.php?page=home&amp;btn=1</a>
Mytopia	Virtual world	<a href="http://www.mytopia.com/">http://www.mytopia.com/</a>
Neopets	Virtual world	<a href="http://www.neopets.com/">http://www.neopets.com/</a>

NAME	CATEGORY	URL
New Media Consortium Campus	Second Life link	<a href="http://slurl.com/secondlife/NMC%20Campus/136/91/23">http://slurl.com/secondlife/NMC%20Campus/136/91/23</a>
New World Grid	Virtual world	<a href="http://www.newworldgrid.com/">http://www.newworldgrid.com/</a>
New World Grid	Virtual world	<a href="http://www.newworldgrid.com/">http://www.newworldgrid.com/</a>
Next Island	Virtual world	<a href="http://www.nextisland.com/">http://www.nextisland.com/</a>
Nexus: The Kingdom of the Winds	MMORPG, Virtual world	<a href="http://www.nexustk.com/">http://www.nexustk.com/</a>
NFL Rush Zone	Virtual world	<a href="http://nflrz.nflrush.com/">http://nflrz.nflrush.com/</a>
Nickropolis	Uncategorized	<a href="http://www.nick.com/club/">http://www.nick.com/club/</a>
Nicotto Town	Virtual world	<a href="http://www.nicotto.jp/">http://www.nicotto.jp/</a>
NOAA Island	Second Life link	<a href="http://slurl.com/secondlife/Meteora/177/161/27">http://slurl.com/secondlife/Meteora/177/161/27</a>
Novoking	Virtual world	<a href="http://www.novoking.com">www.novoking.com</a>
Nurien	Uncategorized	<a href="http://www.nurien.com/">http://www.nurien.com/</a>
Oberin	Virtual world, MMORPG	<a href="http://www.oberin.com/">http://www.oberin.com/</a>
Ogoglio Project	Online world	<a href="http://ogoglio.com/">http://ogoglio.com/</a>
Ohio U SL Campus Learning Kiosks	Second Life link	<a href="http://slurl.com/secondlife/Ohio%20University/81/202/27">http://slurl.com/secondlife/Ohio%20University/81/202/27</a>
Olive	Virtual world	<a href="http://www.forterrainc.com/">http://www.forterrainc.com/</a>
Onverse	Virtual world	<a href="http://onverse.com/">http://onverse.com/</a>
Open Cobalt	Virtual world	<a href="http://www.opencobalt.org/">http://www.opencobalt.org/</a>
Open Neuland	Virtual world	<a href="http://open-neuland.talentraspel.de">http://open-neuland.talentraspel.de</a>
Open Sim	Second Life, Virtual world	<a href="http://opensimulator.org/wiki/Main_Page">http://opensimulator.org/wiki/Main_Page</a>
OpenCroquet	Virtual world	<a href="http://www.opencroquet.org/index.php/Main_Page">http://www.opencroquet.org/index.php/Main_Page</a>
OpenKansai	Virtual world	<a href="http://os.taf-jp.com/">http://os.taf-jp.com/</a>
Openlife Grid	Virtual world	<a href="http://openlifegrid.com/">http://openlifegrid.com/</a>
OSGrid	Virtual world	<a href="http://www.osgrid.org/">http://www.osgrid.org/</a>
Our World	Virtual world	<a href="http://www.ourworld.com/">http://www.ourworld.com/</a>
Outerworlds	Virtual world	<a href="http://www.outerworlds.com/">http://www.outerworlds.com/</a>
Oz World	Online world	<a href="http://oz.ongameport.com/">http://oz.ongameport.com/</a>
Palace, The	Uncategorized	<a href="http://www.thepalace.com/">http://www.thepalace.com/</a>
Pandanda	Online world	<a href="http://pandanda.com/">http://pandanda.com/</a>
Panfu	Virtual world	<a href="http://www.panfu.com/#">http://www.panfu.com/#</a>
Panoramic Earth	Uncategorized	<a href="http://www.panoramicearth.com/index.php">http://www.panoramicearth.com/index.php</a>
Panwapa	Online world	<a href="http://www.panwapa.com/">http://www.panwapa.com/</a>
Papermint	Virtual world	<a href="http://www.papermint.com/">http://www.papermint.com/</a>
Parallel Kingdom	Virtual world	<a href="http://www.parallelkingdom.com/">http://www.parallelkingdom.com/</a>
PBS Kids Play	Online world	<a href="http://www.pbskidsplay.org/">http://www.pbskidsplay.org/</a>
Piczo	Uncategorized	<a href="http://www.piczo.com/?cr=3">http://www.piczo.com/?cr=3</a>
PlaneShift	MMORPG, Virtual world	<a href="http://www.planeshift.it/">http://www.planeshift.it/</a>
Planet Cazmo	Virtual world	<a href="http://www.planetcazmo.com/">http://www.planetcazmo.com/</a>
Planet Soccer	Virtual world	<a href="http://www.planetsoccerlive.com/">http://www.planetsoccerlive.com/</a>
Planet V-Tech	Online world	<a href="http://www.planetvtech.com/vtech/index.aspx">http://www.planetvtech.com/vtech/index.aspx</a>
Playdo (Lulilab)	Uncategorized	<a href="http://www.lulilab.com/">http://www.lulilab.com/</a>
Playstation 3 Home	Uncategorized	<a href="http://www.us.playstation.com/PSN/Home">http://www.us.playstation.com/PSN/Home</a>
PolyU Resort Island	Second Life link	<a href="http://slurl.com/secondlife/HKPolyU%20Resort/121/167/26">http://slurl.com/secondlife/HKPolyU%20Resort/121/167/26</a>
Poptropica	MMOG, Virtual world	<a href="http://www.poptropica.com/">http://www.poptropica.com/</a>
Powerpets	Virtual world	<a href="http://www.powerpets.com/">http://www.powerpets.com/</a>
Precious Girls Club	Virtual world	<a href="https://www.preciousgirlsclub.com/pgc/pgcHome.jsp">https://www.preciousgirlsclub.com/pgc/pgcHome.jsp</a>
Protosphere	Virtual world	<a href="http://protonmedia.com/">http://protonmedia.com/</a>
Prototerra	Virtual world	<a href="http://www.prototerra.com/">http://www.prototerra.com/</a>

NAME	CATEGORY	URL
Pseudospace	Virtual world	<a href="http://www.pseudospace.net/">http://www.pseudospace.net/</a>
Qwaq now Teleplace	Uncategorized	<a href="http://www.teleplace.com/">http://www.teleplace.com/</a>
Raven Island	Virtual world	<a href="http://g.whyville.net/smmk/spark/gates">http://g.whyville.net/smmk/spark/gates</a>
Reaction Grid	Virtual world	<a href="http://reactiongrid.com/">http://reactiongrid.com/</a>
Real Xtend	Second Life, Virtual world	<a href="http://www.realxtend.org/">http://www.realxtend.org/</a>
RealXtend	Virtual world	<a href="http://www.realxtend.org/">http://www.realxtend.org/</a>
Red Light Center	Uncategorized	<a href="http://www.redlightcenter.com/">http://www.redlightcenter.com/</a>
Revnjenz	Virtual world	<a href="http://www.revnjenz.com/revnjenzn/index.php">http://www.revnjenz.com/revnjenzn/index.php</a>
Ridemakerz	Online world	<a href="http://play.ridemakerz.com/">http://play.ridemakerz.com/</a>
Rise	Virtual world	<a href="http://rise.unistellar.com/">http://rise.unistellar.com/</a>
RobotGalaxy	Online world	<a href="http://www.robotgalaxy.com/play/index.html">http://www.robotgalaxy.com/play/index.html</a>
Rocketon	Virtual world	<a href="http://www.rocketon.com/">http://www.rocketon.com/</a>
Roiworld	Virtual world	<a href="http://www.roiworld.com/">http://www.roiworld.com/</a>
Roma Victor	MMORPG, Virtual world	<a href="http://www.roma-victor.com/">http://www.roma-victor.com/</a>
RumorFeller	Virtual world	<a href="http://www.rumorfeller.com/">http://www.rumorfeller.com/</a>
Ryzom	MMORPG, Virtual world	<a href="http://www.ryzom.com/">http://www.ryzom.com/</a>
Saga of Ryzom	Virtual world, MMORPG	<a href="http://www.thepalace.com/assets/faqs.html">http://www.thepalace.com/assets/faqs.html</a>
Scenecaster	Virtual environment	<a href="http://scenecaster.com/web/home.php">http://scenecaster.com/web/home.php</a>
SchMOOze University	Virtual world	<a href="http://schmooze.hunter.cuny.edu/">http://schmooze.hunter.cuny.edu/</a>
ScienceSim	Online world	<a href="http://sciencesim.com/wiki/doku.php">http://sciencesim.com/wiki/doku.php</a>
Sciland Virtual Continent	Second Life link	<a href="http://slurl.com/secondlife/SciLands/29/35/23">http://slurl.com/secondlife/SciLands/29/35/23</a>
Sea Pals	Online world	<a href="http://www.seapalsworld.com/">http://www.seapalsworld.com/</a>
Second Earth	Second Life link	<a href="http://slurl.com/secondlife/Second%20Earth%201/130/127/29">http://slurl.com/secondlife/Second%20Earth%201/130/127/29</a>
Second Life	Second Life	<a href="http://www.secondlife.com/">http://www.secondlife.com/</a>
Secret Builders	Virtual world	<a href="http://www.secretbuilders.com/">http://www.secretbuilders.com/</a>
Secret City	Virtual world	<a href="http://www.secretcity.de/">http://www.secretcity.de/</a>
Segarra Open Grid	Virtual world	<a href="http://segarraopengrid.com/">http://segarraopengrid.com/</a>
Shidonna	Virtual world	<a href="http://www2.shidonna.com/default.htm">http://www2.shidonna.com/default.htm</a>
Shining Stars	Virtual world	<a href="http://www.shiningstars.com/">http://www.shiningstars.com/</a>
Slenz Project	Second Life link	<a href="http://slurl.com/secondlife/Koru/128/128/27">http://slurl.com/secondlife/Koru/128/128/27</a>
Sloodle Project	Second Life link	<a href="http://slurl.com/secondlife/Sloodle/129/119/22">http://slurl.com/secondlife/Sloodle/129/119/22</a>
Small Worlds	Virtual world	<a href="http://www.smallworlds.com/login.php?login=true">http://www.smallworlds.com/login.php?login=true</a>
Smeet	Online world	<a href="http://us.smeet.com/smeet-web/index.htm">http://us.smeet.com/smeet-web/index.htm</a>
Sociotown	Virtual world	<a href="http://www.sociotown.com/">http://www.sociotown.com/</a>
Spineworld	Virtual world	<a href="http://www.spineworld.com/#/home">http://www.spineworld.com/#/home</a>
Sportsblox	Virtual world	<a href="http://www.sportsblox.com/">http://www.sportsblox.com/</a>
Stardoll	Virtual world	<a href="http://www.stardoll.com/en/">http://www.stardoll.com/en/</a>
Super Secret	Virtual world	<a href="http://www.supersecret.com/">http://www.supersecret.com/</a>
Taatu	Virtual world	<a href="http://www.taatu.com/">http://www.taatu.com/</a>
Tamagotchi's Tama & Earth Expo	Virtual world	<a href="http://famitama.com/pc/index_ja.html">http://famitama.com/pc/index_ja.html</a>
Tapped In	Virtual world	<a href="http://www.tappedin.org/">http://www.tappedin.org/</a>
TechWorlds	Uncategorized	<a href="http://www.techworlds.org/">http://www.techworlds.org/</a>
Teen Second Life	Virtual world	<a href="http://teen.secondlife.com/">http://teen.secondlife.com/</a>
Terra Incognita	Second Life link	<a href="http://slurl.com/secondlife/Terra%20incognita/156/100/33">http://slurl.com/secondlife/Terra%20incognita/156/100/33</a>
Tertiary Grid	Virtual world	<a href="http://tertiarygrid.com/">http://tertiarygrid.com/</a>
Timeline of Earth	Second Life link	<a href="http://slurl.com/secondlife/livingintheuniverse/">http://slurl.com/secondlife/livingintheuniverse/</a>
Timik	Virtual world	<a href="http://timik.pl/">http://timik.pl/</a>

NAME	CATEGORY	URL
Tinier Me	Virtual world	<a href="http://www.tinierme.com/tinierme/top.html">http://www.tinierme.com/tinierme/top.html</a>
Tixeo	Virtual world	<a href="http://www.tixeo.com/">http://www.tixeo.com/</a>
Toontown Online	MMORPG, Virtual world, Online world	<a href="http://toontown.go.com/">http://toontown.go.com/</a>
Tootsville	Virtual world	<a href="http://www.tootsville.com/">http://www.tootsville.com/</a>
Toppstown	Virtual world	<a href="http://www.toppstown.com">http://www.toppstown.com</a>
TowerChat	Uncategorized	<a href="http://www.towerchat.co.uk">http://www.towerchat.co.uk</a>
Travels of Wiglington and Wenks, The	Virtual world	<a href="http://www.wiglingtonandwenks.com/">http://www.wiglingtonandwenks.com/</a>
Tronji	Virtual world	<a href="http://www.nicetech.co.uk/">http://www.nicetech.co.uk/</a>
Twinity	Virtual world	<a href="http://twinity.com/en">http://twinity.com/en</a>
Twinverse	Virtual world	<a href="http://twinverse.com/">http://twinverse.com/</a>
Twisted Sky	Virtual world	<a href="http://twistedsky.net/TSkyWeb/">http://twistedsky.net/TSkyWeb/</a>
Ty Girlz	Virtual world	<a href="http://ty-girlz.ty.com/">http://ty-girlz.ty.com/</a>
U.B. Funkeys	Online world	<a href="http://www.ubfunkeys.com/index.html">http://www.ubfunkeys.com/index.html</a>
UC Davis Virtual Hallucination Facility	Second Life link	<a href="http://slurl.com/secondlife/sedig/27/45/22/">http://slurl.com/secondlife/sedig/27/45/22/</a>
UFS Grid	Virtual world	<a href="http://www.ufsgrid.com">http://www.ufsgrid.com</a>
Unica Universe	Uncategorized	<a href="http://grid.unica.it/index.php?page=home&amp;btn=1">http://grid.unica.it/index.php?page=home&amp;btn=1</a>
Uni-Verse	Virtual world	<a href="http://www.uni-verse.org/">http://www.uni-verse.org/</a>
Urbaniacs	Online world	<a href="http://www.urbaniacs.com/">http://www.urbaniacs.com/</a>
Utherverse	Virtual world	<a href="http://www.utherverse.com/">http://www.utherverse.com/</a>
Uvatar	Virtual world	<a href="http://www.uvatar.com/">http://www.uvatar.com/</a>
Uworld	Virtual world	<a href="http://www.uworld3d.com/">http://www.uworld3d.com/</a>
Vastpark	Virtual world	<a href="http://www.vastpark.com/">http://www.vastpark.com/</a>
Wazzamba	Virtual world	<a href="http://www.wazzamba.com">http://www.wazzamba.com</a>
V-Business Grid	Virtual world	<a href="http://v-business.com/">http://v-business.com/</a>
Weather Channel	Second Life link	<a href="http://slurl.com/secondlife/Weather/117/14/26">http://slurl.com/secondlife/Weather/117/14/26</a>
Web City Office Towers	Online world	<a href="http://www.officetowers.com/">http://www.officetowers.com/</a>
WebbliWorld Home	Virtual world	<a href="http://www.webbliworld.com/">http://www.webbliworld.com/</a>
Webkinz	Virtual world	<a href="http://www.webkinz.com/us_en/">http://www.webkinz.com/us_en/</a>
Weblo	Virtual world	<a href="http://www.weblo.com/">http://www.weblo.com/</a>
Webosaurs	Virtual world	<a href="http://www.webosaurs.com/">http://www.webosaurs.com/</a>
WebWilds	Online world	<a href="http://www.webwilds.com/">http://www.webwilds.com/</a>
Weeworld	Virtual world	<a href="http://www.weeworld.com/">http://www.weeworld.com/</a>
Wells Fargo Stagecoach Island	Virtual world	<a href="http://blog.wellsfargo.com/StagecoachIsland/">http://blog.wellsfargo.com/StagecoachIsland/</a>
whyrobbierocks.com (styletool.com)	Virtual world	<a href="http://www.styletool.com/">http://www.styletool.com/</a>
Whyville	Virtual world	<a href="http://www.whyville.net/smmk/nice">http://www.whyville.net/smmk/nice</a>
Wiggle Time	Online world	<a href="http://wiggletime.com/public/home.aspx">http://wiggletime.com/public/home.aspx</a>
Wilder Westen (Wild West)	Virtual world	<a href="http://wilder-westen.talentraspel.de">http://wilder-westen.talentraspel.de</a>
WiloStar3D	Online world	<a href="http://www.wilostar3d.com/default.asp?iId=HILHG">http://www.wilostar3d.com/default.asp?iId=HILHG</a>
Windows Live Local	Uncategorized	<a href="http://preview.local.live.com/">http://preview.local.live.com/</a>
Wirtland	Virtual world	<a href="http://www.wirtland.com/">http://www.wirtland.com/</a>
Virtual Alamo	Second Life link	<a href="http://slurl.com/secondlife/ISTE%20Island%204/245/183/30">http://slurl.com/secondlife/ISTE%20Island%204/245/183/30</a>
Virtual Family Kingdom	Virtual world	<a href="http://www.virtualfamilykingdom.com/">http://www.virtualfamilykingdom.com/</a>
Virtual Ibiza	Virtual world	<a href="http://www.virtualibiza.com/">http://www.virtualibiza.com/</a>
Virtual Milano	Virtual world	<a href="http://www.vrinternal.com/vrmilano/index.html">http://www.vrinternal.com/vrmilano/index.html</a>
Virtual Morocco	Second Life link	<a href="http://slurl.com/secondlife/Casablanca/145/67/26">http://slurl.com/secondlife/Casablanca/145/67/26</a>
Virtuel City	Uncategorized	<a href="http://www.virtuelcity.com/">http://www.virtuelcity.com/</a>
Wiseneheimer	Online world	<a href="https://www.wisehealthkids.com/default.aspx">https://www.wisehealthkids.com/default.aspx</a>

NAME	CATEGORY	URL
Vivaty	Virtual world	<a href="http://www.vivaty.com/">http://www.vivaty.com/</a>
Wizworld Online	Online world	<a href="http://www.wizworldonline.com/">http://www.wizworldonline.com/</a>
Vizwoz	Virtual world	<a href="http://www.vizwoz.com/">http://www.vizwoz.com/</a>
vMTV	Virtual world	<a href="http://virtual.mtv.com/homepage/">http://virtual.mtv.com/homepage/</a>
Wonderland	Virtual world	<a href="http://www.openwonderland.org/">http://www.openwonderland.org/</a>
Voodoo Chat	Uncategorized	<a href="http://www.voodoochat.com/">http://www.voodoochat.com/</a>
Woogi World	Virtual world	<a href="http://www.woogiworld.com/">http://www.woogiworld.com/</a>
WoozWorld	Virtual world	<a href="http://www.woozworld.com/">http://www.woozworld.com/</a>
WoozWorld	Virtual world	<a href="http://www.woozworld.com/">http://www.woozworld.com/</a>
World of Cars	Virtual world	<a href="http://worldofcars.go.com/">http://worldofcars.go.com/</a>
Worlds.com	Virtual world	<a href="http://www.worlds.com/">http://www.worlds.com/</a>
WorldSimTerra Grid	Virtual world	<a href="http://www.worldsimterra.com">http://www.worldsimterra.com</a>
VPChat	Virtual world	<a href="http://www.vpchat.com/">http://www.vpchat.com/</a>
vSide	Uncategorized	<a href="http://www.vside.com/">http://www.vside.com/</a>
VZones	Virtual world	<a href="http://www.vzones.com/">http://www.vzones.com/</a>
Xeko	Virtual world	<a href="http://www.xeko.com/">http://www.xeko.com/</a>
Xivio	Virtual world	<a href="http://www.xivio.com">http://www.xivio.com</a>
Yogurtistan	Virtual world	<a href="http://www.yogurtistan.com/">http://www.yogurtistan.com/</a>
Yohoho! Puzzle Pirates	Virtual world, MMORPG	<a href="http://www.puzzlepirates.com/">http://www.puzzlepirates.com/</a>
Your Alternative Life	Virtual world	<a href="http://www.youralternativelife.com/">http://www.youralternativelife.com/</a>
Yoville	Virtual world	<a href="http://apps.facebook.com/yoville/">http://apps.facebook.com/yoville/</a>
Zed City	Online world	<a href="http://city.zed.com/">http://city.zed.com/</a>
Zibbie Zone	Virtual world	<a href="http://www.zibbies.com/">http://www.zibbies.com/</a>
Zora	Virtual world	<a href="http://ase.tufts.edu/devtech/projects.html">http://ase.tufts.edu/devtech/projects.html</a>
Zwinktopia	Uncategorized	<a href="http://www.zwinky.com/">http://www.zwinky.com/</a>
Zwinky Cuties	Virtual world	<a href="http://www.zwinkycuties.com/zqt/index.jhtml">http://www.zwinkycuties.com/zqt/index.jhtml</a>