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Demographics of Virtual Worlds

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Abstract

Virtual worlds, as both a concept and an industry, have changed radically over the past 10 years, from a toy for the technological elite, to an over-hyped marketing phenomenon, and with this radical change comes the need for reexamining the uses and utility of virtual world technologies and experiences. This paper provides such a reexamination. Within academia there are a number of issues that require further examination. The academic community appears to be divided into four camps: 1) those who embrace virtual worlds; 2) those who have ignored the evolving use of this technology; 3) those who are aware of but have not yet explored the technology; and 4) those who are entirely unaware that virtual worlds exist. Among those who study virtual worlds there is an overwhelming focus in terms of research, publications and funding on a single one of these worlds, Second Life, which serves only a fraction of the entire population utilizing virtual worlds or similar technologies. An overview of the size, shape and forms of virtual worlds may help with both of these issues, the ignorance of virtual worlds among some researchers and the overwhelming focus on a single example among others. This paper presents an in-depth survey and analysis of virtual worlds and related technologies.

Keywords: virtual worlds, typology, continuum, game space.

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Demographics of Virtual Worlds

By Jeremiah Spence, Department of Radio, TV & Film, University of Texas at Austin.

Virtual worlds, as both a concept and an industry, have changed radically over the past ten years, from a toy for the technological elite to an over-hyped marketing phenomenon, and with this radical change comes the need for reexamining the uses and utility of virtual world technologies and experiences. This paper offers such a reexamination.

Within academia in particular there are a number of issues that require further examination. The academic community appears to be divided into four camps: 1) those who embrace virtual worlds; 2) those who have ignored the evolving use of this technology; 3) those who are aware of but have not yet explored the technology; and 4) those who are entirely unaware that virtual worlds exist. Among those who study virtual worlds there is an overwhelming focus in terms of research, publications, and funding on a single one of these worlds, Second Life, which serves only a fraction of the entire population utilizing virtual worlds or similar technologies. An overview of the size, shape, and forms of virtual worlds may help with both of these issues, the ignorance of virtual worlds among some researchers and the overwhelming focus on a single example among others.

Conceptualization and Definitions of Virtual Worlds

In the broadest terms a virtual world can be conceptualized as "a place described by words or projected through pictures which create a space in the imagination, real enough that you can feel you are inside of it" (Damer, 2008). In this sense, a virtual world can be thought of as anything from the painted caves of our ancestors or shadow puppetry to such literary worlds as Dante's *Inferno* (Bittarello, 2008), Eco's monasteries (1983), Shakespeare's tragedies, Japanese samurai stories, Orson Welles' radio enactment of *The War of the Worlds* (1938), and the Wachowski brothers' *Matrix* movies. The computer, by mediating the experience of communication and interaction with large quantities of information, makes it possible to expand the relationship between the imaginary and the real into a persistent three dimensional space.

In his novel *Snow Crash* Stephenson (1992) provided one of the defining depictions of a non-game virtual world with Hiro Protagonist's exploits in the *metaverse*, a term that the novel introduced into the public discourse. Stephenson's metaverse is a three-dimensional virtual world where users interact with each other via avatars and through immersive technology; the users in this metaverse are able to experience and interact from a first-person perspective. The concept of the metaverse as laid out by Stephenson in his fictional work has proved instrumental in providing a vision for real-world computer programmers and technologists to emulate in their development of a variety of new virtual worlds, from SnowMoo, Active Worlds, There, and Second Life to Croquet and Google Lively.

Building on the metaverse vision presented in *Snow Crash*, technologists developed a *Metaverse Roadmap* that presented a "ten-year forecast and visioning survey of 3D Web technologies, applications, markets, and potential social impacts [... including] the convergence of Web applications with networked computer games and virtual worlds, the use of 3D creation and animation tools in virtual environments, digital mapping, artificial life, and the underlying trends in hardware, software, connectivity, business innovation, and social adoption that will

drive the transformation of the World Wide Web in the coming decade" (Smart, Cascio, & Paffendorf, 2007).

Although no single definition of virtual worlds exists, scholars continue to explore the key factors that separate virtual worlds from non-virtual worlds. Before discussing those factors, a distinction must first be made between game space and non-game space. A game can be understood as a "multi-agent interactive representation of subjective reality that defines a problem space with which the player can act as a solution explorer within the bounds of the space," (Hypography, 2007). Game space is a three-dimensional computer simulation that integrates elements of game into a persistent online massively multiplayer environment. Online games and online game spaces can be separated into two categories, those that are persistent and those that are not persistent. Persistence in this context refers to games and online game spaces that continue to exist when the user is not logged in, in contrast to the older style of computer games that stop when a user logs out. Contemporary examples of game space are the online worlds associated with World of Warcraft, Eve Online, and Ultima, among many others.

The concept of a virtual worlds can be distinguished from the concept of game space by the absence of the characteristics of a "game." Bell (2008) presents a number of previously proposed definitions of a virtual world and proposes a synthesized, more contemporary definition that attempts to take into account changes that have appeared in virtual worlds over the past several years (Chesebro, 1985; Bartle, 2003; Koster, 2004; Castronova, 2004). Bell states that a virtual world can be defined as "a synchronous, persistent network of people, represented as avatars, facilitated by networked computers" (2008, p. 1). Bell's definition has three key components:

- 1. "synchronous" indicates that shared activities necessitate synchronous or real-time communication
- 2. "persistent," as explained previously, indicates that a "virtual world cannot be paused" or does not shutdown when the user exits
- 3. the "avatar" is "any digital representation (graphical or textual), beyond a simple label or name, that has agency (an ability to perform actions) and is controlled by a human agent in real time" (2008, p. 1).

Schroeder emphasizes the experiential element of virtual worlds. Schroeder defines a *virtual environment* or, equivalently, a *virtual reality* as "a computer-generated display that allows or compels the user (or users) to have a sense of being present in an environment other than the one they are actually in, and to interact with that environment" (Schroeder, 1996, p. 25). The collaborative, multi-user element of *virtual environments* can be described as "environments or systems [in] which users experience other participants as being present in the same environment and interacting with them – or 'being there together'" (Schroeder, 2006; 2008, p. 1). How then does one differentiate between *virtual reality* or *virtual environments* and *virtual worlds*? Schroeder uses the term *virtual worlds* to refer to "persistent online social spaces," which, however, leaves one with the problem of differentiating between virtual worlds, as presented in this definition, and online game spaces (Schroeder, 2008). Researchers have noted an increasing degree of socialization taking place in persistent online game spaces, such as World of Warcraft, which brings them closer to Schroeder's definition of a virtual world; still,

the defining nature of the online game space continues to be the game (Axelsson & Regan, 2006).

The distinction centers on the emphasis on the social nature of virtual worlds without the "game" elements as the primary defining rules of the space. To state the distinction in another way: Games can exist in virtual worlds, but virtual worlds are not game spaces – they are social spaces. Frequently virtual worlds are described as serving the function of a third place or third space, referring to a public space where one shares leisure and social spaces with other people but that is neither home nor work. The third place is similar to the city square, town plaza, coffee shop, hang-outs, or salons of other eras (Oldenburg, 1991; 2000; Steinkuehler & Williams, 2006). Oldenburg (1989) explains that "third places exist on neutral ground and serve to level their guests to a condition of social equality. Within these places, conversation is the primary activity and the major vehicle for the display and appreciation of human personality and individuality" (p. 89) The connection between virtual worlds and the third place frequently reinforces the educational process (Bruckman & Resnick, 1993; Schwienhorst, 1998). The connection between the third place and online game spaces, such as World of Warcraft, has been extensively studied (Steinkuehler, 2005; Steinkuehler & Williams, 2006; Wadley, Gibbs, Hew, & Graham, 2003). Although some have attempted to expand the term third place to include all forms of computer-mediated communication (Soukup, 2006), the concept, as outlined by Oldenburg, applies directly to social virtual worlds. Virtual worlds are places of neutral ground and foster a certain degree of social equality, where one might pursue conversation, content creation, and the exchange of the goods

Tracing the development of virtual reality from the Sensorama simulator of 1962 to contemporary virtual modeling systems built on Silicon Graphics computers, Burdea and Coiffet define *virtual reality* as a high-end user computer interface that involves real time simulation and interactions through the visual, auditory, tactile, smell and taste senses (2003). The development of virtual reality technologies focuses on the three "I's": to feel the reality through *immersion*, to change and modify the reality through *interaction*, and to extend the function of the reality through *imagination* (Burdea and Coiffet, 2003).

Sivan sees the development of *gaming worlds* as the second component in the marriage of technologies that spurred the development of *virtual worlds*. Tracing a lineage from the first multi-user dungeons (MUDs) in the late 1970s to World of Warcraft and its contemporaries today, one finds that these increasingly complex gaming worlds provided the foundation for the development of the social aspect of virtual worlds (Sivan, 2008, p. 3; Bartle, 2004; Morningstar & Farmer, 1991; Taylor, 2006; Alexander, 2003; 2005).

Sivan describes *real virtual worlds* as depending on four elements: 3D (three-dimensionality), community, creation, and commerce, which collectively are referred to as 3D3C. In addition to placing three-dimensionality at the core what defines a real virtual world, the concept of 3D3C emphasizes the social nature of virtual worlds and the roles that content and commerce serve in reinforcing the integrity and cohesiveness of a real virtual world (Sivan, 2008).

Commercial Virtual Worlds Landscape

Obtaining accurate data on the size and shape of the universe of virtual worlds can be a complicated task, as most commercial virtual worlds consider their user data to be a trade secret. This leaves the researcher dependent mainly on data from press releases or consulting firms, which may or may not be accurate. Even obtaining a baseline of the total population of current registered users of commercial virtual worlds is a challenging task; the most frequently cited number is 300 million registered users (Hays, 2008). This is not the same as the total number of regular or current users, which is considered by most companies to be a trade secret and which is suspected to be considerably less than total number of registered users.

Refining Virtual Worlds Definitions

Building upon this foundation, this paper will use the following definition:

Virtual worlds are persistent, synthetic, three dimensional, non-game centric space. Virtual worlds are primarily social spaces that allow for other uses depending on the theme of the particular virtual world. Virtual worlds are either commercial or open source in design and implementation.

This definition characterizes virtual worlds as a distinct phenomenon, separate from MUDs; Massively Multiplayer Online Role Playing Games (MMORPGs), such as World of Warcraft, EverQuest, Eve Online; or other types three-dimensional online game spaces. Game spaces are virtual environments defined by their purpose of pursuing the objectives of a game. Games have rules, levels, and, ideally, a conclusion where the objectives of the game have been achieved (Hypography, 2008). Virtual worlds, by contrast, are not defined by the rules and goals of a particular game but instead are frequently focused around socialization and content creation. This is not meant to imply that MMORPGs do not have non-game activities taking place, such as socialization and commerce, but in a gaming world the primary function of the virtual environment is to facilitate the achievement of the objectives of the game. Similarly, game playing often takes place within a virtual world, but virtual worlds have many other activities taking place simultaneously which are generally as important as or more important than any game playing. These other activities include education, collaboration, support groups, sexual encounters, and content creation, among numerous other uses. In a virtual world, the user can easily stop gaming and, say, attend a university lecture or visit a nightclub.

The framing of virtual worlds as being persistent, synthetic, and three-dimensional delineates virtual worlds from pre-three dimensional online virtual worlds, imaginary worlds, or literary worlds. As the virtual worlds industry grows and becomes more sophisticated, the industry is becoming more segmented, and a number of specific focuses—beyond the basic focus on socialization and content creation—are developing.

In order to obtain a clearer picture of the metaverse, this paper examines both primary and secondary data regarding the various types of virtual worlds—or things sometimes referred to as virtual worlds—that are in existence. The paper also documents and analyzes secondary data on the sizes and target audiences of the various virtual worlds. The secondary data source comes from the *Universe* and *Radar* graphics of the KZero Consultancy (2008a, 2008b), which can be found in Appendix 2. It provide a solid point of origin for exploring the metaverse,

offering general data on target audiences, sectors of focus, and supposed number of registered users for over 90 "virtual worlds" as classified by KZero.

The original research presented here, building upon the foundation of KZero, involved visiting the websites of 112 "virtual worlds," classifying them according to a macro-typology developed for this purpose, identifying the geographical location of each project, and, where possible, attempting to verify the population numbers for the different sites.

Commercial virtual worlds are rapidly growing both in size and sophistication as developers, investors, and marketing professionals develop increasingly refined and focused business models for monetizing virtual worlds. Increasingly the lines are being blurred between virtual worlds, as defined here, and other technologies. Game designers are finding that virtual worlds models are useful for increasing the amount of time user spend within the game space. Virtual world designers are using gaming design technology to create increasingly sophisticated user experiences. Entrepreneurs and technologists continue to experiment with the integration of virtual worlds technology with other Internet technologies, such as instant messaging, group collaboration tools, and social networking sites (SNS), such as Facebook, MySpace, or Orkut.

Continuum of Commercial Virtual Worlds

As previously explained, the term *virtual worlds* has been used to refer to a large variety of very different creations. Using the above definition of a virtual world, the survey undertaken for this project found that of the 112 projects evaluated only 41 (or 37% of the total) could clearly be classified as a virtual world. Additionally, 10% of the sample were clearly games – the companies classify the projects as games, they use gaming terminology, and so on. That leaves the remaining 50% of the sample up in the air: How should they be classified if they are neither games nor virtual worlds?

To classify these remaining projects, it is useful to introduce the concept of a technological hybrid. This is analogous to the concepts of cultural, racial, and global hybridity (Bhabha, 1994; Garcia Canclini, 1995; Young, 1995) used by other authors in other contexts. Generally speaking, the value of using the concept of hybridity in all these contexts is the same: It provides the necessary heuristic response to an over-simplified dichotomous distinction. In this case, the remaining 50% of the projects fall within a hybrid technological space which can be visualized as existing on a continuum between virtual worlds and game space.

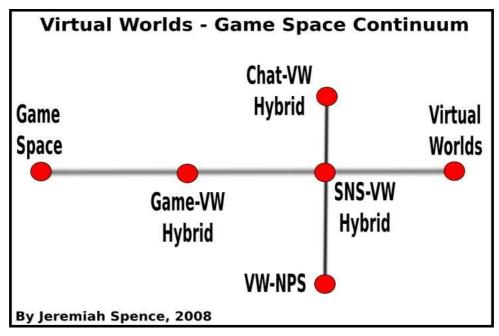


Fig. 1 – Virtual Worlds – Game Space Continuum by Jeremiah Spence

The linear continuum from virtual worlds to game space includes 95% of the projects surveyed; however, some of the most fascinating projects using some elements of virtual worlds technology fall outside this continuum. The 5% of the projects that did not fit along the continuum have been classified here as either *Chat-Virtual Worlds Hybrids* or *Non-Persistent Virtual World Spaces (VW-NPS)*. One example of a chat-vw hybrid is IMVU, which allows a user to enter a chat room with an avatar to interact with another user. IMVU can be compared to instant messaging with a visual element. Non-persistent virtual world spaces are best illustrated by the example of Qwaq, which provides a virtual world space specifically for business meetings or group collaborations. The space is created for the purpose of the encounter, and then, after the encounter is over, it shuts down. The settings and accrued content are saved, and when the space is needed for another meeting the settings and content are retrieved.

Given this breakdown of the projects surveyed, this paper will not pretend to give accurate demographics for the *games* category, as the category would inevitably include the large multitude of MMORPGs and similar game spaces that exist. All projects/sites examined in this survey can be found in Appendix 1.

The following frequency tables provide a summary of the demographics of non-game virtual worlds and virtual worlds related projects.

Table 1 – Status of Project

What is it?	Status of Project	Frequency	Percent
Virtual World	Live or Open Beta	34	73.9
	In Development	12	26.1
VW-Chat Hybrid	Live or Open Beta	4	100.0
Non-persistent VW			
Space	Live or Open Beta	1	100.0
Game-VW Hybrid	Live or Open Beta	22	59.5
	In Development	15	40.5
VW-SNS Hybrid	Live or Open Beta	8	61.5
	In Development	5	38.5

As can be seen in Table 1, there are 69 projects that are live or in the open beta stage, and there are 32 additional projects currently in the development phase or closed beta. If all 32 additional projects make it to the live phase, this will result in a total of more than 40 virtual worlds and more than 50 additional projects that integrate virtual worlds technology into their functionality. More succinctly, the *metaverse* is big.

Table 2 - Median Age Range of Users

	Age		
What is it?	Range	Frequency	Percent
Virtual World	5-8	2	4.3
	8-10	3	6.5
	10-13	10	21.7
	13-15	3	6.5
	15-20	6	13.0
	20-25	10	21.7
	25-30	3	6.5
	30-40	9	19.6
	Total	46	100.0
VW-Chat Hybrid	13-15	1	25.0
	15-20	2	50.0
	20-25	1	25.0
	Total	4	100.0
Non-persistent VW			
Space	25-30	1	100.0
Game-VW Hybrid	5-8	6	16.2
	8-10	15	40.5
	10-13	6	16.2
	13-15	1	2.7
	15-20	7	18.9
	20-25	1	2.7
	25-30	1	2.7
	Total	37	100.0
VW-SNS Hybrid	8-10	1	7.7
	10-13	4	30.8
	13-15	1	7.7
	15-20	5	38.5
	20-25	2	15.4
	Total	13	100.0

The data in Table 2 clearly demonstrate that the overwhelming concentration of virtual worlds and users of related platforms is under the age of 20. This has a direct impact on the focus of virtual worlds research, an impact that cannot be overstated. The focus of research on Second Life causes the vast majority of virtual world activity to be overlooked. Furthermore, within 5 to 10 years these users will become post-adolescents and thus will be more affluent users and consumers of technology. Pedagogical and market-based tools and strategies will need to adapt accordingly.

 $Table\ 3\textbf{ - }Q3/Q4\ 2008\ Total\ Registered\ Accounts, in\ Millions$

What is it?	Registered Accounts in Millions	Frequency	Percent
Virtual World	0.1	1	2.2
	0.3	1	2.2
	1	1	2.2
	1.5	1	2.2
	2	1	2.2
	3	2	4.3
	13	1	2.2
	15	2	4.3
	19	1	2.2
	21	1	2.2
	100	1	2.2
	Population Under 1,000,000 or Have Not Released Data	21	45.7
	Not Open to the Public	+	45.7
	Total	12	26.1
VW Chat Hybrid		46	100.0
VW-Chat Hybrid	1.5	1	25.0
	20	1	25.0
	Population Under 1,000,000 or Have Not Released Data		
		2	50.0
	Total	4	100.0
Non-persistent VW Space	Population Under 1,000,000 or Have Not Released Data	1	100.0
Game-VW Hybrid	1	3	8.1
	2	1	2.7
	6	1	2.7
	7	1	2.7
	20	2	5.4
	45	1	2.7
	Population Under 1,000,000 or Have Not Released Data	13	35.1
	Not Open to the Public	15	40.5
	Total	37	100.0
VW-SNS Hybrid	24	1	7.7
• • •	Population Under 1,000,000 or Have Not Released Data	7	53.8
	Not Open to the Public	5	38.5
	Total	13	100.0
		1 -	

Based on the data in Table 3 the actual number of total registered accounts for virtual worlds is close to 194 million, while the total number of registered users of game-virtual world hybrids is 103 million. The total number of registered users of virtual world-social networking site hybrids is 24 million, and the total number of registered users of virtual world-chat hybrids is 21.5 million. The sum of these estimates of the total number of registered users of virtual worlds and related projects that integrate virtual worlds technology is 330.5 million; however, a number of qualifiers must be considered when interpreting this data. Most importantly, the total number of registered users is not the same as the total number of frequent users. For example, this data reports the total number of registered users of Second Life to be 15 million while the average number of users simultaneously logged in on any given day ranges from 50,000 to 100,000.

Table 4 - Sector of Focus of Project

What is it?	Focus	Frequency	Percent
Virtual World	Content Creation	8	17.4
	TV/Film/Books	1	2.2
	Sports	1	2.2
	Education/Development	5	10.9
	Fashion/Lifestyle	2	4.3
	Music	1	2.2
	Toys/Real World Games	2	4.3
	Role-Play/Fantasy/Quests	1	2.2
	Mirror World	4	8.7
	Misc	1	2.2
	Casual Gaming	4	8.7
	Socialising/Chat	16	34.8
	Total	46	100.0
VW-Chat Hybrid	Misc	1	25.0
•	Socialising/Chat	3	75.0
	Total	4	100.0
Non-persistent VW			1.00.0
Space	Misc	1	100.0
Game-VW Hybrid	Content Creation	2	5.4
	TV/Film/Books	4	10.8
	Sports	4	10.8
	Education/Development	3	8.1
	Fashion/Lifestyle	3	8.1
	Music	1	2.7
	Toys/Real World Games	4	10.8
	Role-Play/Fantasy/Quests	5	13.5
	Misc	1	2.7
	Casual Gaming	8	21.6
	Socialising/Chat	2	5.4
	Total	37	100.0
VW-SNS Hybrid	Content Creation	1	7.7
-	Education/Development	2	15.4
	Toys/Real World Games	1	7.7
	Misc	2	15.4
	Casual Gaming	1	7.7
	Socialising/Chat	6	46.2
	Total	13	100.0

Table 4 demonstrates that the overwhelming focus of most projects is chat and socialization, followed by content creation, with the exception of game-virtual world hybrids where the focus is more disperse.

Table 5-Where are the projects based?

What is it?	Headquarters	Frequency	Percent
Virtual World	US	32	69.6
	Canada	1	2.2
	Europe	9	19.6
	Asia	3	6.5
	Multi-national	1	2.2
	Total	46	100.0
VW-Chat Hybrid	US	1	25.0
	Europe	3	75.0
	Total	4	100.0
Non-persistent VW	US		
Space		1	100.0
Game-VW Hybrid	US	28	75.7
	Canada	1	2.7
	Europe	2	5.4
	Asia	1	2.7
	Multi-national	5	13.5
	Total	37	100.0
VW-SNS Hybrid	US	10	76.9
	Canada	1	7.7
	Europe	1	7.7
	Multi-national	1	7.7
	Total	13	100.0

Table 5 shows that a large majority of the projects are located in the United States, with Europe a distant second, and the rest of the world even farther back. Notably, no projects currently originate from Latin America or Africa.

Conclusion

There are several conclusions that can be drawn from this survey of the demographics of virtual worlds. First, *virtual world* as a concept and construct must be clearly defined and delineated. Second, approxiametly 60% of the projects examined in this project fell outside the strict definition of virtual worlds and can be considered to exist along a continuum from pure virtual worlds to pure game space projects. Third, the *metaverse* is big. Fourth, the major concentration of virtual worlds users is under the age of 20. This cannot be ignored, and we as researchers and educators are doing a disservice to the field and the public if we continue to focus our research solely on Second Life. Fifth, the majority of functioning virtual worlds and related projects are focused on socialization and chat, and, finally, the majority of projects are being developed in the United States and Europe.

This large-scale survey sets forth the boundaries of what can be considered virtual worlds and what can be considered peripheral technologies. This is not to presume that peripheral technologies are of less importance; to the contrary, it is quite possible that important unforeseen developments in virtual worlds technology will come directly out of these peripheral technologies. However, the delineation of the realm of virtual worlds provides the researcher and the research community with a clear agenda for focusing and clarifying the scope of new studies. It cannot be emphasized enough that the on-going focus of researchers on Second Life, although convenient and seemingly comfortable to the over-30 crowd, is a detriment to the research community and society at large. As the concentration of both virtual worlds use and development is taking place in the under-25 demographic range, researchers must follow suit and explore these new platforms. This expanded scope of research should not be concentrated solely under the guise of "youth in virtual worlds"—since the vast majority of virtual worlds use is targeted to the under-25 demographic, all examinations of virtual worlds should include these "younger" spaces. Therefore, "Consumer Behavior in Virtual Worlds," "Culture of Virtual Worlds," or "Pedagogy and Learning in Virtual Worlds" cannot, with intellectual honesty, be considered to be inclusive or exhaustive if one does not go beyond the bubble or comfort zone of Second Life.

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				Virtual V	Vorlds				
Virtual World Name	Status	Age Range	Approximate Age	Population of Registered Users, in Millions	Sector	Website	Country Where the Project is Based	Region Where the Project is Based	Macro- Typolog y
	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data				
HiPiHi	Live or Open Beta	30-40	30	0.1	Content Creation	http://www.hipihi.c om/index_english. html	China	Asia	Virtual World
vSide	Live or Open Beta	15-20	18	0.3	Toys/Rea I World Games	http://www.vside.com	US	US	Virtual World
Activeworld s	Live or Open Beta	20-25	23	1	Content Creation	http://www.active worlds.com/	US	US	Virtual World
Kidscom	Live or Open Beta	8-10	9.7	1.5	Socialisin g/Chat	http://www.kidsco m.com/	US	US	Virtual World
There	Live or Open Beta	20-25	20.5	2	Socialisin g/Chat	http://www.there.c om/	US	US	Virtual World
vMTV	Live or Open Beta	20-25	20.5	3	TV/Film/B ooks	http://content.vmt v.com/mtv_centra l/	US	US	Virtual World

Whyville	Live or Open Beta	10-13	10.9	3	Education /Develop ment	http://www.whyvill e.net	US	US	Virtual World
Gaia	Live or Open Beta	15-20	17	13	Role- Play/Fant asy/Ques ts	http://www.gaiaon line.com/	US	US	Virtual World
Barbie Girls	Live or Open Beta	10-13	9.5	15	Toys/Rea I World Games	http://www.barbie girls.com/home.ht ml	US	US	Virtual World
Second Life	Live or Open Beta	30-40	33	15	Content Creation	http://secondlife.com	US	US	Virtual World
Club Penguin	Live or Open Beta	10-13	11.8	19	Casual Gaming	http://www.clubpe nguin.com/	Canada	Canada	Virtual World
Stardoll	Live or Open Beta	13-15	15	21	Fashion/L ifestyle	http://www.stardol l.com	US	US	Virtual World
Habbo	Live or Open Beta	10-13	12.8	100	Socialisin g/Chat	http://www.habbo.	Japan- Finland	Multi- national	Virtual World
Action Allstars	In Developme nt	8-10	9.2	Not Open to the Public	Sports	http://www.action allstars.com/	US	US	Virtual World
Amazing Worlds	In Developme nt	25-30	30	Not Open to the Public	Mirror World	http://www.amazi ngworlds.com/	US	US	Virtual World

Cyber Town	Live or Open Beta	20-25	26	Not Open to the Public	Content Creation	http://www.cybert own.com/main_ns frames.html	US	US	Virtual World
iheartland	In Developme nt	20-25	24	Not Open to the Public	Content Creation	http://blog.iheartla nd.com/	US	US	Virtual World
KooDooZ	In Developme nt	10-13	12	Not Open to the Public	Education /Develop ment	http://www.koodo oz.com/	US	US	Virtual World
Medikidz	In Developme nt	10-13	11	Not Open to the Public	Education /Develop ment	http://www.mediki dz.com/	UK	Europe	Virtual World
Muxlim	In Developme nt	13-15	14	Not Open to the Public	Content Creation	http://spaces.muxl im.com/	Finland	Europe	Virtual World
Mycosm	In Developme nt	20-25	25	Not Open to the Public	Content Creation	http://www.mycos m.com/	US	US	Virtual World
Near	In Developme nt	25-30	29	Not Open to the Public	Mirror World	http://nearglobal.c om/	UK	Europe	Virtual World
Papermint	In Developme nt	15-20	16	Not Open to the Public	Casual Gaming	http://www.paper mint.com/	Germany	Europe	Virtual World

Vivaty	In Developme nt	20-25	20	Not Open to the Public	Socialisin g/Chat	http://www.vivaty. com/	US	US	Virtual World
Yogurtistan	In Developme nt	20-25	20	Not Open to the Public	Socialisin g/Chat	http://www.yogurtistan.com:8080/jsp/index.jsp	Turkey	Europe	Virtual World
3-D Explorer	Live or Open Beta	30-40	30	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://www.3dxplo rer.com/	France	Europe	Virtual World
Forterra	Live or Open Beta	30-40	30	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://www.forterrainc.com/	US	US	Virtual World
Franktown Rocks	Live or Open Beta	10-13	10	Population Under 1,000,000 or Have Not Released Data	Music	http://www.frankto wnrocks.com/	US	US	Virtual World

Frenzoo	Live or Open Beta	15-20	16	Population Under 1,000,000 or Have Not Released Data	Fashion/L ifestyle	http://www.frenzo o.com/beta/	Hong Kong	Asia	Virtual World
GeoSim Philly	Live or Open Beta	30-40	31	Population Under 1,000,000 or Have Not Released Data	Mirror World	http://www.geosi mphilly.com/	US	US	Virtual World
Kaneva	Live or Open Beta	20-25	21	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://www.kanev a.com/	US	US	Virtual World
Lively	Live or Open Beta	15-20	16	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://www.lively.c om/html/landing.h tml	US	US	Virtual World

MinyanLan d	Live or Open Beta	10-13	10	Population Under 1,000,000 or Have Not Released Data	Education /Develop ment	http://www.minya nland.com/	US	US	Virtual World
Multiverse	Live or Open Beta	20-25	23	Population Under 1,000,000 or Have Not Released Data	Content Creation	http://www.multiv erse.net/index.ht ml	US	US	Virtual World
Nexus	Live or Open Beta	30-40	30	Population Under 1,000,000 or Have Not Released Data	Education /Develop ment	http://www.ecsorl. com/solutions/EC S_EMNx.html	US	US	Virtual World
Planet Cazmo	Live or Open Beta	10-13	11	Population Under 1,000,000 or Have Not Released Data	Casual Gaming	http://www.planet cazmo.com/	US	US	Virtual World

Protospher e	Live or Open Beta	30-40	30	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://www.proton media.com/	US	US	Virtual World
SmallWorld s	Live or Open Beta	15-20	17	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://www.smallw orlds.com/login.p hp	New Zealand	Asia	Virtual World
Taatu	Live or Open Beta	13-15	13.5	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://world- cdn.taatu.com/ind ex.html	Belgium	Europe	Virtual World
Tootsvilles	Live or Open Beta	5-8	7	Population Under 1,000,000 or Have Not Released Data	Casual Gaming	http://www.tootsvil le.com/index.html	US	US	Virtual World

Twinity	Live or Open Beta	30-40	36	Population Under 1,000,000 or Have Not Released Data	Mirror World	http://www.twinity. com/en	US	US	Virtual World
Utherverse	Live or Open Beta	30-40	32	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://www.utherv erse.com/	Netherla nds	Europe	Virtual World
Vastpark	Live or Open Beta	25-30	27	Population Under 1,000,000 or Have Not Released Data	Misc	http://www.vastpa rk.com	US	US	Virtual World
Virtual Tweens / Ekoloko	In Developme nt	10-13	10	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://vtweens.co m/	US	US	Virtual World

Vizwoz	Live or Open Beta	10-13	11	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://www.vizwoz .com/	UK	Europe	Virtual World
Zwinky Cuties	Live or Open Beta	5-8	7	Population Under 1,000,000 or Have Not Released Data	Socialisin g/Chat	http://www.zwinky cuties.com	US	US	Virtual World

	Virtual World-Social Networking Site Hybrids												
Virtual World Name	Status	Age Range	Approximat e Age	Population of Registered Users, in Millions	Sector	Website	Country Where the Project is Based	Region Where the Project is Based	Macro- Typology				
	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data								
WeeWorld	Live or Open Beta	13-15	14.3	24	Socialising/ Chat	http://www. weeworld.c om/	US-UK	Multi- national	VW-SNS Hybrid				
Club Cooee	In Developme nt	10-13	12	Not Open to the Public	Misc	http://en.bl og.clubcoo ee.com	Germany	Europe	VW-SNS Hybrid				
Grockit	In Developme nt	10-13	11	Not Open to the Public	Education/ Developme nt	http://www. grockit.com /login	US	US	VW-SNS Hybrid				
Metaplace	In Developme nt	15-20	19	Not Open to the Public	Content Creation	https://ww w.metaplac e.com/	US	US	VW-SNS Hybrid				
Onverse	In Developme nt	20-25	23	Not Open to the Public	Socialising/ Chat	http://www. onverse.co m/	US	US	VW-SNS Hybrid				
Rocketon	In Developme nt	15-20	16	Not Open to the Public	Casual Gaming	http://www. rocketon.c om/	US	US	VW-SNS Hybrid				

EGO	Live or Open Beta	15-20	19	Population Under 1,000,000 or Have Not Released Data	Socialising/ Chat	http://www. ego- city.com/	US	US	VW-SNS Hybrid
Green	Live or Open Beta	10-13	11	Population Under 1,000,000 or Have Not Released Data	Education/ Developme nt	http://green .com/	US	US	VW-SNS Hybrid
My Mini Life	Live or Open Beta	10-13	12	Population Under 1,000,000 or Have Not Released Data	Socialising/ Chat	http://www. myminilife. com/	US	US	VW-SNS Hybrid
SceneCast er	Live or Open Beta	20-25	24	Population Under 1,000,000 or Have Not Released Data	Misc	http://www.scenecaster.com	Canada	Canada	VW-SNS Hybrid

vLES - Virtual Lower East Side	Live or Open Beta	15-20	19.5	Population Under 1,000,000 or Have Not Released Data	Toys/Real World Games	http://www. vles.com/	US	US	VW-SNS Hybrid
Xivio	Live or Open Beta	8-10	8.6	Population Under 1,000,000 or Have Not Released Data	Socialising/ Chat	http://www. xivio.com	US	US	VW-SNS Hybrid
Zwinky	Live or Open Beta	15-20	17	Population Under 1,000,000 or Have Not Released Data	Socialising/ Chat	http://zwink y.smileyce ntral.com	US	US	VW-SNS Hybrid

Compiled by Jeremiah Spence, November 2008, from various sources.

	Virtual World-Chat Hybrids												
Virtual World Name	Status	Age Range	Approximat e Age	Population of Registered Users, in Millions	Sector	Website	Country Where the Project is Based	Region Where the Project is Based	Macro- Typology				
	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data								
Weblin	Live or Open Beta	20-25	21.5	1.5	Misc	http://www. weblin.com	Germany	Europe	VW-Chat Hybrid				
IMVU	Live or Open Beta	15-20	20	20	Socialising/ Chat	http://www. imvu.com/	US	US	VW-Chat Hybrid				
sMeet	Live or Open Beta	15-20	19	Population Under 1,000,000 or Have Not Released Data	Socialising/ Chat	http://us.s meet.com	Germany	Europe	VW-Chat Hybrid				
Visitoons	Live or Open Beta	13-15	13.7	Population Under 1,000,000 or Have Not Released Data	Socialising/ Chat	http://www. visitoonsch at.com/En/i ndex.aspx	Spain	Europe	VW-Chat Hybrid				

Compiled by Jeremiah Spence, November 2008, from various sources.

	Non-persistent Virtual World Space												
Virtual World Name	Status	Age Range	Approximat e Age	Population of Registered Users, in Millions	Sector	Website	Country Where the Project is Based	Region Where the Project is Based	Macro- Typology				
	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data								
Qwaq	Live or Open Beta	25-30	29	Population Under 1,000,000 or Have Not Released Data	Misc	http://www. qwaq.com/	US	US	Non- persistent VW Space				
Compiled by a	leremiah Spence	, November 2008	3, from various s	Data									

30

Game Space-Virtual World Hybrids												
Virtual World Name	Status	Age Range	Approximat e Age	Population of Registered Users, in Millions	Sector	Website	Country Where the Project is Based	Region Where the Project is Based	Macro- Typology			
	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data							
Handipoint s	Live or Open Beta	5-8	7.5	1	Education/ Developme nt	http://www. handipoints .com	US	US	Game-VW Hybrid			
Moshi Monsters	Live or Open Beta	8-10	10	1	Role- Play/Fanta sy/Quests	http://www. moshimons ters.com/	US	US	Game-VW Hybrid			
Webkinz	Live or Open Beta	8-10	9	1	Toys/Real World Games	http://www. webkinz.co m	US	US	Game-VW Hybrid			
Buildabear ville	Live or Open Beta	8-10	8.8	2	Toys/Real World Games	http://www. buildabear ville.com	US	US	Game-VW Hybrid			
goSuperm odel	Live or Open Beta	13-15	13	6	Fashion/Lif estyle	http://www. gosupermo del.com	Denmark	Europe	Game-VW Hybrid			
Meez	Live or Open Beta	15-20	17.5	7	Socialising/ Chat	http://www. meez.com	US	US	Game-VW Hybrid			

Jumpstart	Live or Open Beta	5-8	7.7	20	Education/ Developme nt	http://www. jumpstart.c om/	US	US	Game-VW Hybrid
Poptropica	Live or Open Beta	8-10	9.6	20	Casual Gaming	http://www. poptropica. com/	US	US	Game-VW Hybrid
Neopets	Live or Open Beta	10-13	10	45	Casual Gaming	http://www. neopets.co m/index.ph tml	US	US	Game-VW Hybrid
8D	In Developme nt	15-20	16	Not Open to the Public	Role- Play/Fanta sy/Quests	http://www. 8dworld.co m/English/ Home.html	US-China	Multi- national	Game-VW Hybrid
Chugginton	In Developme nt	5-8	7	Not Open to the Public	Education/ Developme nt	http://www. ludorum.co m/propertie s/chuggingt on.html	US-UK	Multi- national	Game-VW Hybrid
DMCWorld	In Developme nt	15-20	18	Not Open to the Public	Music	http://www. dmcworld.c om/home.a sp	US	US	Game-VW Hybrid
Empire of Sports	In Developme nt	15-20	18	Not Open to the Public	Sports	http://www. empireofsp orts.com/	US	US	Game-VW Hybrid

Football Superstars	In Developme nt	25-30	27	Not Open to the Public	Sports	http://footb allsupersta rs.com/	US	US	Game-VW Hybrid
FusionFall	In Developme nt	10-13	13	Not Open to the Public	Role- Play/Fanta sy/Quests	http://www. fusionfall.c om/	US	US	Game-VW Hybrid
Hello Kitty	In Developme nt	8-10	8.7	Not Open to the Public	Toys/Real World Games	http://www. hellokittyon line.com/us /index.php ?c=&s=	Japan	Asia	Game-VW Hybrid
Home	In Developme nt	15-20	19	Not Open to the Public	Misc	http://com munity.eu. playstation. com/playst ationeu/bo ard/messa ge?board.i d=b_EN_P S3_Home& thread.id=6	US-Japan	Multi- national	Game-VW Hybrid
Interzone Futebol	In Developme nt	20-25	22	Not Open to the Public	Sports	http://www. interzonefu tebol.com/	US-Brazil	Multi- national	Game-VW Hybrid
Kidstudio	In Developme nt	8-10	8.3	Not Open to the Public	Casual Gaming	http://www. kidstudio.c om/	Canada	Canada	Game-VW Hybrid

Konstructio n Zone	In Developme nt	8-10	8.4	Not Open to the Public	Content Creation	http://www. konstructio nzone.com /kz/app/ho me	US	US	Game-VW Hybrid
LEGO Universe	In Developme nt	10-13	10	Not Open to the Public	Role- Play/Fanta sy/Quests	http://unive rse.lego.co m/en- us/Default. aspx	Denmark- US	Multi- national	Game-VW Hybrid
Pixie Hollow	In Developme nt	8-10	8	Not Open to the Public	TV/Film/Bo oks	http://pixieh ollow.go.co m/	US	US	Game-VW Hybrid
Robot Galaxy	In Developme nt	8-10	9.2	Not Open to the Public	Role- Play/Fanta sy/Quests	http://www. robotgalax y.com	US	US	Game-VW Hybrid
TechDeck Live	In Developme nt	15-20	19	Not Open to the Public	Sports	http://www. techdeckliv e.com/	US	US	Game-VW Hybrid
Bunnytown	Live or Open Beta	8-10	9	Population Under 1,000,000 or Have Not Released Data	TV/Film/Bo oks	http://playh ouse.go.co m/v1/mark eting/index. html	US	US	Game-VW Hybrid

Digital Dollhouse	Live or Open Beta	10-13	10	Population Under 1,000,000 or Have Not Released Data	Fashion/Lif estyle	http://www. digitaldollh ouse.com/	US	US	Game-VW Hybrid
Dizzywood	Live or Open Beta	10-13	10	Population Under 1,000,000 or Have Not Released Data	Casual Gaming	http://www. dizzywood. com	US	US	Game-VW Hybrid
Lolas Land	Live or Open Beta	8-10	9	Population Under 1,000,000 or Have Not Released Data	Fashion/Lif estyle	http://www. lolasland.c om/	UK	Europe	Game-VW Hybrid
Mini-Match	Live or Open Beta	8-10	9	Population Under 1,000,000 or Have Not Released Data	TV/Film/Bo oks	http://mini match.cart oonnetwor k.com/	US	US	Game-VW Hybrid

Ourworld	Live or Open Beta	15-20	15.5	Population Under 1,000,000 or Have Not Released Data	Casual Gaming	http://ourw orld.com/v 11/	US	US	Game-VW Hybrid
Roblox	Live or Open Beta	10-13	11	Population Under 1,000,000 or Have Not Released Data	Content Creation	http://www.roblox.com//	US	US	Game-VW Hybrid
Seapals	Live or Open Beta	5-8	7	Population Under 1,000,000 or Have Not Released Data	Casual Gaming	http://www. seapalswor ld.com/	US	US	Game-VW Hybrid
Spicy Town	Live or Open Beta	8-10	8.5	Population Under 1,000,000 or Have Not Released Data	TV/Film/Bo oks	http://www. spicyside.c om/index.a spx	US	US	Game-VW Hybrid

Ty-girls	Live or Open Beta	8-10	8	Population Under 1,000,000 or Have Not Released Data	Toys/Real World Games	http://tygirlz .com/	US	US	Game-VW Hybrid
Whirled	Live or Open Beta	8-10	9.1	Population Under 1,000,000 or Have Not Released Data	Casual Gaming	http://www. whirled.co m/	US	US	Game-VW Hybrid
Woogi World	Live or Open Beta	5-8	7	Population Under 1,000,000 or Have Not Released Data	Socialising/ Chat	http://www. woogiworld .com/	US	US	Game-VW Hybrid
ZooKazoo	Live or Open Beta	5-8	7	Population Under 1,000,000 or Have Not Released Data	Casual Gaming	http://www. zookazoo.c om	US	US	Game-VW Hybrid

Game Spaces										
Virtual World Name	Status	Age Range	Approximat e Age	Population of Registered Users, in Millions	Sector	Website	Country Where the Project is Based	Region Where the Project is Based	Macro- Typology	
	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data	*Based on Kzero Data					
Chapatiz	Live or Open Beta	5-8	7.9	0.8	Casual Gaming	http://uk.ch apatiz.com/	France-UK	Multi- national	Game	
Cars	In Developme nt	8-10	10	Not Open to the Public	TV/Film/Bo oks	none	US	US	Game	
Chobots	In Developme nt	8-10	9.8	Not Open to the Public	Education/ Developme nt	http://www. chobots.co m/	Ukraine	Europe	Game	
Club PonyPals	In Developme nt	10-13	10	Not Open to the Public	Toys/Real World Games	http://www. clubponypa ls.com/	US	US	Game	
ERepublic	In Developme nt	25-30	28	Not Open to the Public	Misc	http://www. erepublik.c om/en	US	US	Game	
Freaky Creatures	In Developme nt	10-13	12	Not Open to the Public	Toys/Real World Games	http://www. myfreakycr eatures.co m/	US	US	Game	

Kiwi Heroes	In Developme nt	10-13	11	Not Open to the Public	Education/ Developme nt	http://www. kiwiheroes. com/	Canada	Canada	Game
My Animal Family	In Developme nt	5-8	6	Not Open to the Public	TV/Film/Bo oks	http://www. bitstudio.co m/projects/ 3- projects/4- my-animal- family.html	US	US	Game
Revnjenz	In Developme nt	13-15	14	Not Open to the Public	Toys/Real World Games	http://www. revnjenz.co m/revnjenz new/index. php	US	US	Game
Webcarzz	In Developme nt	8-10	9.5	Not Open to the Public	Role- Play/Fanta sy/ Quests	http://www.mind-control.com/news.php?articleID=26	US	US	Game
Spineworld	Live or Open Beta	10-13	12	Population Under 1,000,000 or Have Not Released Data	Role- Play/Fanta sy/ Quests	http://www. spineworld. com	Sweden	Europe	Game

39

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