Real VR: A Demographic Perspective

Steve Waite and Kris Tuttle – May 21, 2009

Research 2.0

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Last month, we published a report that identified what we believe is the next big thing in technology: **Real VR** (short for Real Virtual Reality).[1] As we noted in our report, we see huge potential for Real VR in the months and years ahead. The migration from 2D to 3D and the convergence of the real world and virtual worlds are likely to unleash a wave of business activity that could rival what was experienced with the Internet and World Wide Web in the mid-to-late 1990s. In this report, we take a closer look at Real VR from a demographic perspective. We believe the demographic data sheds light on where activity is likely to be concentrated in the months ahead and who is having success today.

Although Real VR is still in its early stages, there is no disputing the huge ramp in activity. Much of the activity to date has been in the 2D virtual world space. As Exhibit 1 shows, there has been a significant increase in the number of registered users in virtual worlds during the past several years. By the end of last year, there were an estimated 174 million registered virtual world users, up from 28 million in 2006 and about 3.5 million in 2001. Not only has there been tremendous growth, but there also has been a notable acceleration in both the number of users and the number of new virtual worlds being launched.

Registered Virtual World Users
(in millions)
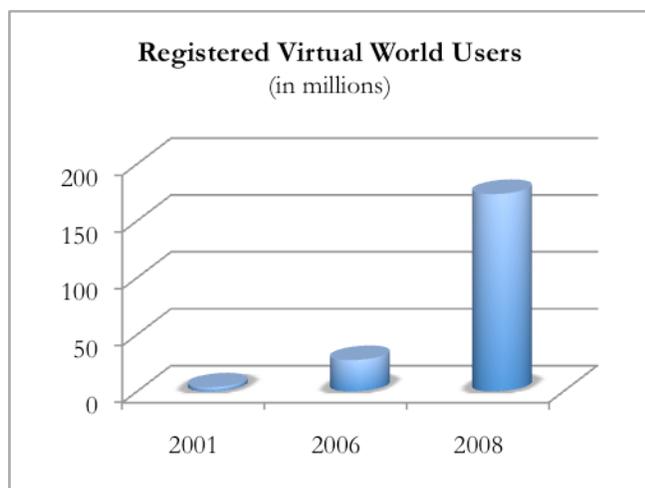
Sources: Castronova and K Zero

Exhibit 1

It is worth noting that all of this growth has come at a time when most of the virtual worlds are fairly primitive. In the next few months, we believe the quality and sophistication of what is available online will improve markedly. Early indications are that large consulting organizations and enterprises are planning to roll out custom virtual worlds with tens of thousands of users each. Even very young users are showing strong adoption of new offerings. Knowledge Adventure has introduced an online 3D world to its traditional offerings for three-to-eight-year-olds. Early usage patterns show that kids spend over an hour at a time online playing and learning in these educational 3D worlds.

We can drill down into the registered virtual users data and find out where the activity is and in which demographic segment.

VIRTUAL WORLDS RISING

Exhibit 2 shows there are quite a few online virtual worlds across the various demographic categories that have reached critical mass in terms of registered accounts. The data is through the first quarter of 2009.

Scanning the data, we see that the largest virtual world in terms of registered accounts is Habbo, which is targeted mainly to the age 10-13 demographic. Habbo was created by the Sulake Corporation, which

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[1] See: "Real VR: The Next Really Big Thing," Research 2.0, April 6, 2009.

is based in Helsinki, Finland. The site is described as a social network and virtual world for teens - a place where users can meet and make friends, design their own rooms, collect cool furniture, throw parties, and much more. At last count, Habbo had nearly 125 million registered accounts, well above the still-impressive 55 million for Neopets and 22 million for Club Penguin in the same demographic category. Habbo is estimated to have generated over $100 million in revenue last year, with more than 200 companies reportedly advertising on the site. The age 10-13 demographic has the most registered accounts of all demographic segments today, due primarily to the success of Habbo.

However, there are several virtual worlds that are quite popular in other demographic categories, notably Poptropica in the age 8-10 segment, Stardoll and WeeWorld in the age 12-15 demographic, and IMVU and Gaia in the age 15-20 category. As the table shows, there has been less activity in the older demographic segments (i.e., age 20 years and over). Second Life is the leader in registered accounts at 17 million in the age 30+ demographic segment. MTV 3D currently heads the pack in terms of registered accounts in the age 20-25 group.

Selected Virtual Worlds Registered Accounts
(First-quarter 2009, in millions)

Age 5-8	Users	Age 12-15	Users	Age 20-25	Users
Handipants	1	Stardoll	26	MTV 3D	4
		WeeWorld	26	There	2
Age 8-10		goSupermodel	8	Weblin	2
Poptropica	40			SceneCaster	2
Barbie Girls	17	**Age 15-20**		Activeworlds	1
Webkinz	5	IMVU	30		
Buildabearville	3	Gaia	15	**Age 25-30**	
		Meez	8	No significant activity	
Age 10-13		Outspeak	4		
Habbo	124	Taatu	1	**Age 30+**	
Neopets	50			Second Life	17
Club Penguin	22			Utherverse	2
Whyville	3				

Source: K Zero

Exhibit 2

Interestingly, there has not been any meaningful activity thus far in 2D or 3D virtual worlds in the age 25-30 demographic segment, but we expect this will change dramatically due to new initiatives from corporations and consumer-oriented worlds like vSide.

As we noted in our previous report, there is a range of uses for virtual worlds - increasingly 3D worlds - from education and business to socializing and gaming. It certainly will not be all fun and games, even though entertainment value likely will continue to drive Real VR activity, especially in the kids-to-teen demographic segment. Sulake, the Finnish company that launched Habbo, recently announced a new virtual world for mobile phones called "Bobba." Whereas Habbo is geared to the early-teen demographic segment (10-13 years old), Bobba is targeted to an older audience - 16 years and up. Users have created nearly 6,000 Bobba accounts to date. Nokia devices are being used currently to access the service, but Sulake plans to migrate to the iPhone this summer. The company is also likely to expand Bobba to other platforms, including PCs and possibly consoles in the future.

Young children will have their own educational virtual worlds to play and learn in as well. The 3-8 year old segment is being actively addressed by companies like Knowledge Adventure. Their CD-ROM based games have been used by tens of millions of children. They are also a trusted brand with parents looking for games that are educational and safe. Knowledge Adventure has launched and is building an online virtual world offering that is meeting with great success early on. Combining high quality 3D environments with educational content and interaction will have a major impact on child entertainment and education. The TV/movie "babysitter" will turn into an in-house entertaining teacher instead.

We expect many more virtual world applications to be launched for mobile devices and other platforms in the months ahead. This will help address the gap that exists in the age 20-25 demographic. These users are typically doing other things like school, socializing, traveling and working and must be addressed with Real VR applications that are based on mobile Internet technology. Indeed, every day brings a fresh, new Real VR application, and we believe it will be difficult to keep pace with the development of new applications in the future.[2] There will likely be the equivalent of the Cambrian explosion in new apps, and we believe this is where the real value lies.

GOING GLOBAL

We pointed out in our previous report that Real VR is global in nature and scope. When we look across the world from a demographic and technology perspective, we see great potential for companies in all major regions. Exhibit 3 provides estimates of Internet users by region broken down by demographic segment for children and teens. The data shows that Asia is likely to be a hotbed of Real VR activity in the future.

Internet Users by Region								
(in millions)								
	Age 5-9		Age 10-14		Age 15-19		Kids & Teens		Total Kids
Region	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	& Teens
Asia	18.4	15.5	20.2	18.1	21.3	19.5	59.9	53.1	113.0
Europe	8.3	8.0	8.6	8.0	9.6	9.1	26.5	25.1	51.6
Americas	8.1	7.8	8.3	8.0	9.2	8.7	25.6	24.5	50.1
Total	34.8	31.3	37.1	34.1	40.1	37.3	112.0	102.7	214.7

Sources: K Zero, U.S. Census Bureau and International Data Base
Exhibit 3

Asia's demographics are favorable and Internet penetration is high and rising in the region. There are 60 million boys who are Internet users and 53 million girls who fall within the age 5-to-19 demographic. This total is more than the size of Europe and North and South America combined. The chart shows that the demographic split within the various age groups across the different regions of the world is pretty even.

To date, the most successful online virtual world in China is Tencent QQ, which generally is referred to as QQ. QQ began as a free instant-messaging program in mainland China but has evolved into a broader platform that includes games, pets, etc. QQ recorded an estimated $1 billion in sales and $500 million in profits last year, making it the leading avatar-based service by users, revenues and profits worldwide. Other virtual worlds of note in Asia include iPart, Nanamimi, ID.com and 1001m. iPart resembles Stardoll, while the other virtual worlds share similarities with Habbo. Guodong is an example of a 3D entertainment platform in China that plugs into web pages and social networks. A service called Cmune creates mini-virtual worlds that can be accessed from either a browser or social network or with Apple's widgets or iPhone.

Splume was the first local company in Japan to introduce a 3D virtual world similar to Second Life. There have been several other services announced or launched in Japan, including AI sp@ce, Daletto World, Hatena World, Internet Adventure iA, Meet-me, ntomo, Poki Poki, PRUM and Vizimo. In South Korea, there has been the launch of Cyworld Mini-life, which is the 3D evolution of Cyworld, the country's most popular social network. PuppyRed is another service similar to Cyworld 3D targeted to teenage girls. Nurien, a 3D gaming social network, is another notable service launched in South Korea.

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[2] Those interested in following the development of new Real VR technologies and apps are encouraged to check out our blog posts at Research2.0.com and CreativeDestructionFund.com.

WORLDS COLLIDE

These examples from the various regions around the world illustrate the global nature and scope of Real VR. We believe there will continue to be various legal, regulatory and economic factors that will influence the development of Real VR in the different regions. We do not expect the pace of activity to be equal across borders. When Second Life was launched, it resembled the Wild West in the early days of America. A host of security and legal issues cropped up almost immediately in Second Life, and its creator, Linden Lab, is scrambling to deal with them.

The legal and IP issues across real and virtual world are already challenging our notions about how things should work in virtual worlds. A few examples illustrate some of what we can expect to see in the near future. Taser International, the creator of the stun gun, recently filed a trademark infringement lawsuit against Linden Lab, claiming the publisher is illegally selling virtual goods based on the Taser stun guns. Although not widely covered by the press, there have been many such cases. Recently, the Trump Organization enforced its exclusive rights to the "Miss Universe" trademark in Second Life. Quite a few of these cases focus on the right to use a picture or music in a virtual world and whether that infringes on a copyright.

Herman Miller is an interesting example of a company that embraced virtual worlds to stem widespread violations. A number of members of Second Life were selling "virtual knockoffs" of the Aeron chair. Instead of suing, the company hired a virtual world development firm to create a very attractive version of the chair and made it available for sale in Second Life, along with a "Get Real!" advertising campaign. The company even offered a free chair to anyone who had a knockoff but promised to destroy it. By offering a superior and fully licensed alternative the sales of other versions, the company ended up owning its real brand in the virtual world.

Governments are grappling with how to tax virtual world activities and enforce basic laws like right to property. China has imposed a 20% tax on virtual goods profits, but this has raised questions about how such a tax can be paid and collected if the virtual world limits convertibility. Will governments create their own virtual tax organizations? In the Netherlands, two youths were found to be criminally liable for theft of virtual goods within a game. They were sentenced to detention and civil services. In the eyes of the court they were as guilty as if they had stolen something from a neighborhood store. Should these crimes be tried in real courts or virtual ones? Should the penalties be paid in the real world or the online worlds? There is wide debate over the "jurisdiction" of the end-user license agreements for virtual worlds and

These developments illustrate the interplay between the real world and virtual worlds. We expect a host of bizarre lawsuits and assorted regulatory confrontations in the future. These developments will affect the evolutionary dynamics of Real VR in the various regions across the world. Questions about how to reconcile virtual- and real-world use cases in terms of legality, privacy, security and even ethics will start to loom large as adoption ramps. Some law firms, like Pillsbury, have formed virtual law practice areas and recruited noted industry leaders into their groups in the past six months.

THE BUILDING BLOCKS ARE IN PLACE

As the data has indicated, the demographics are favorable to the evolution of virtual worlds – worlds that are likely to become so lifelike that it will be difficult in certain circumstances to differentiate between what is real and what is virtual. We believe the migration to 3D will unleash a powerful wave of innovation in the future and fundamentally transform the virtual worlds' landscape. There are already

signs of this today. Many of the technologies used to deliver rich and vibrant 3D landscapes and images are still in a primitive stage of development, but they appear to be evolving at a relatively fast pace. Here are a few notable points:

➤ Desktops and other user display technologies are going 3D this year. The 2D desktop generally provides a flat and very limited view for us. It works well for simple activities. Users are using more active windows now like video and chat, but they all take up valuable "screen real estate" because of the nature of 2D. In 3D, visual elements can be placed in perspective with one another. For example, a video or slide show literally can be "in the background." More technically, it also will allow virtual representations of real objects to be operated on in much more intuitive and productive ways.

➤ Numerous introductions of 3D consumer products are flowing into the market. A few of these include cameras, browsers and TVs. A number of these consumer 3D trends could end up being fads, but some of them will endure, especially for specialized applications like games, sports and some types of films. Nvidia also started offering a high-end, 3D display with special glasses in a kit form a few months ago, with Samsung supplying the displays. Panasonic and other firms are putting substantial development resources into 3D HD cameras and displays.

➤ The gap between virtual designs and real manufactured objects is shrinking. Most physical objects are designed using powerful software platforms from companies like Dassault Systems. Increasingly, Dassault and others are delivering tools that can realistically simulate actual manufacturing operations. Companies that can produce 3D prototypes have been around for some time (Stratasys [SSYS] and 3D Systems [TDSC]), and contract manufacturing continues to move closer to on-demand. What does it mean? We believe it will translate into the ability to move real objects into the virtual space and vice versa.

➤ Technology companies like Intel are investing large sums of money to provide the needed infrastructure at scale for this to go mainstream. Smaller firms like Nvidia are focused on this area as the key to their long-term growth.

Intel's technical marketing manager, Steve Cutler, recently noted that the company believes it will reach new heights in visual computing and realistic computer-generated images in the next few years. Intel envisions, as do we, Internet users around the world seamlessly accessing connected 3D virtual worlds in the coming decade.

The road ahead seems clear. Real VR has the potential to be one of the biggest technology waves ever. The demographics are favorable, and there is a great deal of interest among companies today - big and small - in Real VR.

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