# CONDUCTING HOTEL CO-BRANDING RESEARCH IN THE VIRTUAL WORLD OF SECOND LIFE: AN EXPLORATORY STUDY

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## ABSTRACT

This paper explains how Immersive Research techniques were used to capture data in real time through avatar activity in Second Life. This initial study is part of a larger-scale research project which aims to understand the optimal level of co-branding for the hotel industry. This paper considers the research methodology, the data collection process and gives a brief summary of the initial research findings. The virtual environment offers an opportunity for researchers to reach a global audience, conduct the research in a relatively short time frame, and do the research inexpensively. The study will be of interest to researchers who may wish to use a virtual 3D environment for their own research.

**Key Words**: Second Life; Virtual Worlds; Hotel Co-branding; Immersive Research; Hong Kong

## 1 Introduction

In 2008, a research team from a university in Hong Kong began a study with the research objective to understand the optimal level of co-branding for hotels. The optimal level can be defined as the most advantageous combination of the co-branding options of a hotel as perceived by the customer. During the early part of the study the team recognized the potential of using the virtual world of Second Life (SL) to help with the hotel branding research when reviewing two previous studies by Starwood Hotels and Courtyard by Marriott. The Starwood Group used SL as a test bed for the design of their Aloft brand by inviting visitors to a virtual Aloft in SL as well as holding focus groups meeting in the virtual hotel to discuss aspects of the design. Some members of the research team had been working in SL for more than a year, and had built a 29-storey, 264-room 'virtual teaching hotel' modelled on the architectural drawings for a real hotel due to be opened by The Hong Kong Polytechnic University in late 2010. They decided to use this virtual environment to conduct the study.

Virtual worlds are a phenomenon that have captured the imagination of educators and the general public, particularly over the past three to four years as the technology has matured and bandwidth has enabled real time, multi-user applications to be developed. Well-publicised Virtual worlds such as World of Warcraft and Second Life have established dynamic communities of active users numbering in their millions (Figure 1). According to Linden Lab, since its founding in 2003, over one billion hours have been spent by its 'residents' in Second

Life, "That's roughly 115,000 years spent doing everything from meeting and socializing with friends; to attending live concerts; to creating, selling, and shopping for virtual goods; to learning a foreign language; to attending business meetings; and much more" (Linden Lab, 2009).

Table 1: Registered accounts in Virtual Worlds 2009

| Age Range | Registered Accounts (millions) |
| --- | --- |
| 5 to 10 | 179m |
| 10 to 15 | 392m |
| 15 to 25 | 193m |
| 25+ | 39m |
| **Total** | **803m** |

Note: Adapted from Kzero Worldswide (2010)

Increasingly market researchers are realizing the importance of virtual worlds, and academics too have begun to explore this medium for their research. Second Life in particular has been widely adopted by educational institutions and individuals for teaching, learning and various types of research activity. Research in virtual worlds has taken two forms. The first has been to study who is using virtual worlds, what goes on, and why they are used (Williams, Yee & Caplan, 2008). The second form is research of 'real world' issues using the experiences of players or residents who inhabit these virtual worlds (Bainbridge, 2007). This real world-virtual world research still needs to prove that the medium is valid in producing acceptable scientific data that can be used in the real world. One of the challenges of this particular study was to establish whether the participants and their views are truly representative of their own real life personas. Secondly, whether the survey respondents are representative as a group of an equivalent real world sample and whether the inhabitants of virtual worlds are providing valid responses or are just fantasizing in the answers they provide and hiding their true views and opinions behind their virtual avatar. The study hopes to shed some light on these important questions.


## 2 Research Methodology

In order to gather the views of a truly international audience of typical business and leisure hotel users, it was decided to conduct the research completely in SL. This virtual environment gave the researchers access to a very large group of 'residents' (at the time of the survey 750,000 unique users were logging in each month) from around the globe. The study asked respondents to visit a guest room in the PolyU Virtual Teaching Hotel and to identify their most valued brands. Over 400 users took part in the first stage of the research and data was collected over a four-week period. The second phase involved asking the same respondents to rank each identified room profile based on range of room rates and different combinations of branded amenities.

The study is unique in using a virtual environment which offers an opportunity for researchers to reach a global audience, conduct the research in a relatively short time frame, do it inexpensively by eliminating travel and other expenses, and by coming up with a good quality data set. This paper focuses on the research methodology, the data collection process with a brief summary of the initial research findings. It will conclude with a review of the possibilities and drawbacks of using virtual environments for qualitative, quantitative and immersive research. The study will be of interest to researchers who may wish to take the opportunity to use a virtual 3D environment for their own research.

As a first step, a questionnaire was designed to ask respondents about the brands they preferred and valued in a hotel room setting. The hotel room details in the Virtual Hotel were prepared according to the Mobile Travel Guide's four diamond and American Automobile Association's four star standards. The set of features that can be branded in a hotel room was listed as coffee, coffee maker, tea, TV, in-room entertainment, iron, towels & bath robe, toothpaste, soap & shampoo & bath gel and hair dryer (Figure 1). SL participants were invited to review amenities and nominate the brands they would like. The next stage was to develop the data collection method.

Figure 1: Phase 1 - Hotel Room Features
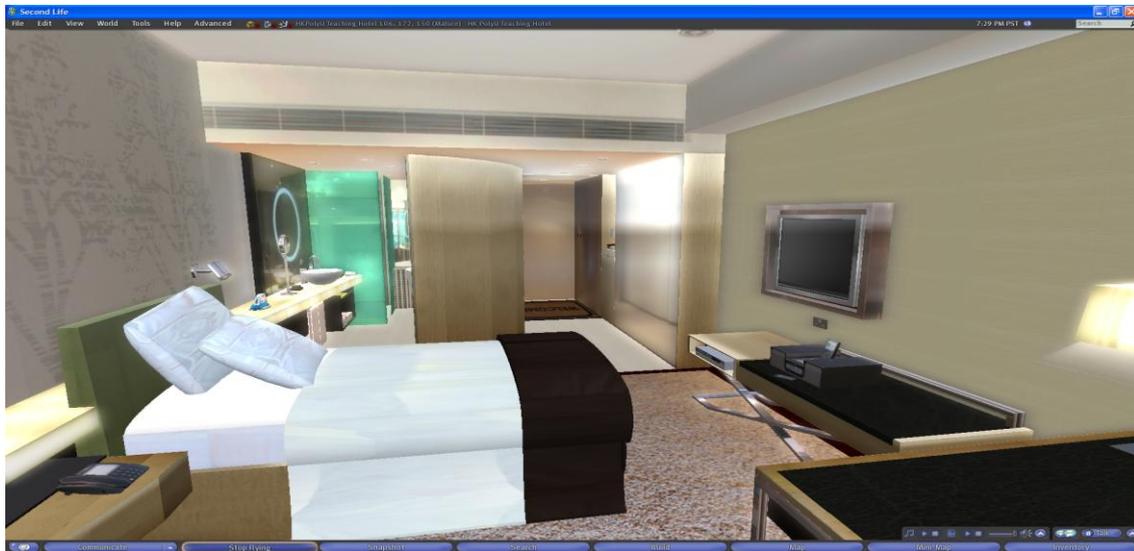


Various data collection methods have been used in virtual worlds: Projector Survey, Survey Sofa, Survey ATM, Head User Display (HUD) Survey, Survey Avatar Robots and Survey Question Kiosks (Table 2). We tested each of these methods and evaluated the advantages and disadvantages of each before deciding to use an enhanced immersive experience based on the Survey Question Kiosk developed by Bell, Castronova and Wagner (2009). This method stressed the importance of allowing survey participants to stay within the virtual world when answering a survey to avoid a break in immersion and with the possibility of hindering accurate recall of the virtual environment in completion of the survey. Most of the survey instruments we reviewed exist outside SL, and users are normally linked to an external website or online survey to enter their survey responses. Our data collection process uses some of the concepts developed by Bell et al, but we modified and enhanced it so that the users were much more engaged in the survey by interacting directly with the survey objects (hotel room artefacts) and being able to communicate or interact directly with a real person behind the avatar, not with a robot avatar. We wanted participants to experience a hotel guest room and feel and view the room amenities and environment in as realistic way as possible.

Table 2: Review of Virtual World Survey Methods

| Method | How it Works | Advantages | Disadvantages |
|--------|--------------|------------|---------------|
| **Projector survey** | Sitting on a chair to do survey on the projector screen. | Simulates real life survey environment. | Cannot interact with objects. A normal online survey |
| **Survey Sofa** | Avatar sits on a sofa to do survey within SL from Derval | User friendly, visual 3D environment | When sofa is occupied by a participant, others cannot take |

| | | | |
|---|---|---|---|
| | & Menti (2008). | | the survey. A normal online survey |
| **Survey ATM** | Users click on an ATM console and transport to an external web page, from Kemp & Livingstone (2006). | Link to external webpage to do the survey. | A normal online survey. |
| **HUD** (Head User Display) **Survey** | User attached head user display to conduct survey | Survey can conduct variety of basic question types such as multiple-choice, rating scale, checklist and open ended. | Can only display short questions. HUD objects must be worn on avatar's head when using.. Blocks users' view when taking the survey. |
| **Survey Avatar Robots** (artificial intelligence avatar robot) | Scripted avatar robot detects an avatar passing by, catches up with them and asks them to take part in the survey. | Simulates real person asking questions. Questions are asked and answered by using SL chat channel. | Hard to get answers right. Easily interrupted |
| **Survey Question Kiosk** | Virtual Data Collection Interface (VDCI). | Fully functional Survey tool. Can conduct multiple-choice & long answers | Lacks the personal interaction that would take place if an avatar conducted the survey |
| **The PolyU Virtual Hotel Survey Method** | A personal data collection method based on VDCI Kiosk and enhanced for more personal interviewing. | As with (6.) above. In addition, information about participants can be reordered. Answers can be sent to any email account. Automatically pays participants. | Labour intensive, requires many hours spent in busy areas making contact with users/residents to ask them to take part in the research. |

## 3   Data collection

Meeting and enlisting participants was a challenge – and this was done by what we called 'Travel Scanning' – transporting the research avatar around the thousands of islands/destinations in SL where avatars gathered. SL allows users to see the most densely populated areas with the number of avatars shown as green dots on the world map (similar to Google Maps). We found groups of avatars would congregate at events such as exhibitions, music shows, discos and other social gatherings. Our avatar would teleport to these destinations and offer survey information note-cards to residents. In most cases residents were interested in the survey, but others were too busy or indifferent to the approach. We also advertised the research on various forums and user groups in SL.

Once the participant had received the note-card explaining the survey they were able to click on a hyperlink to be transported (teleported) directly into the entrance of one of the hotel guest rooms to begin the survey. Again, note-cards were used to ask questions and users clicked various objects in the hotel room to provide their answers to the questionnaire. Users were also able to leave comments and questions in the 'chat channel' within SL and this could be recorded and stored by the researchers. When the answers were entered they were stored and sent to an assigned external email address where they were later analysed in SPSS. On completion of the survey, participants were able to receive a payment in SL currency for their help – approximately US$1 per participant which they could then use to purchase virtual objects such as clothing or artefacts within SL. We also gave them the survey hat to add to their personal inventory of stored items. A flowchart of the data collection process is shown in Figure 2.
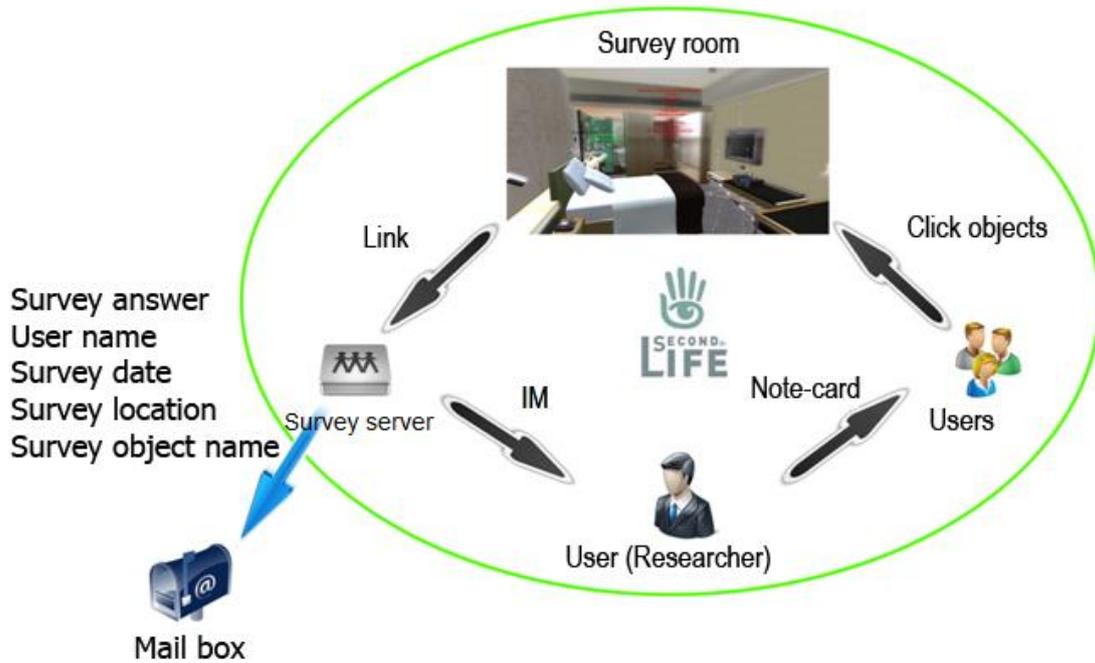
Figure 2: Data Collection Process and System

The initial survey (brand selection) took almost four weeks to complete. During the collection period, the researchers needed to open each email which contained a unique survey answer. Then extract each participant's avatar name and email address (for use for the second stage survey). The data was then entered into SPSS (Statistical Package for the Social Sciences) and the results were analyzed. To ensure we only received one questionnaire from each participant we only invited SL users who had their SL account opened before we began the survey, and we checked their name against the existing user names to avoid duplication. We also checked the data manually, and excluded results that were invalid for various reasons.

## 4  Data Analysis

The initial Phase 1 study has so far has exceeded the expectations of the researchers. The response to the survey was extremely positive, and very good quantitative feedback was received. Lessons were also learned, and we will disseminate the complete findings in due course. Over a four-week period more than 700 participants visited the hotel rooms and 400 of them completed the survey in full. Participants came from 39 countries, with 54 percent from the USA and Canada, 30 percent from Europe and the Middle East, 12 percent from Asia-Pacific, three percent from South America and one percent from elsewhere. Fifty-nine percent of respondents were female, with 29.6 percent of respondents aged between 26-35 years of age, 26.5 percent aged under 25 years, 23.5 percent aged between 36-45 years of age, and 20.4 percent aged over 45 years of age.

Results from this stage of the study indicated that coffee, TV, toothpaste and shampoo & shower gel were the most preferred features to be branded in a 4-star hotel room setting, and these were used for Phase two of the research. Most preferred brands for each item were also identified. Additional information collected from the respondents (apart from age range and country of residence) included their education and income level, frequency and length of stay, type of overnight accommodations used for business and leisure stays (See Table 3).

Table 3: Phase 1 Respondents' socio-demographics and trip characteristics

| Variables | Phase 1 |
|---|---|
| Age group (%) | |
| 25 or less | 21.75 |
| 26-35 | 26.25 |
| 36 - 45 | 25.00 |
| 46 - 55 | 17.00 |
| 56 - 65 | 9.00 |
| 66 or above | 1.00 |
| Gender (%) | |
| Female | 59.75 |
| Male | 40.25 |
| Region of residence (%) | |
| Asia Pacific | 12.00 |
| Europe | 30.00 |
| North America | 54.00 |
| South America | 3.00 |
| Other | 1.00 |
| Education (%) | |
| Secondary | 3.50 |
| High school | 15.75 |
| College | 33.25 |
| Undergraduate | 17.00 |
| Postgraduate | 30.50 |
| Monthly household income before taxes (mean) (US Dollar) | 26,372.83 (71% valid) |
| Travel experience (%) | |
| Inexperienced | 8.50 |
| Some experience | 34.00 |
| Average experience | 22.75 |
| Experienced | 24.00 |
| Very experienced | 10.75 |
| Average hotel stay annual (%) | |
| 1-3 times | 53.25 |
| 4-6 times | 24.50 |
| 7-9 times | 12.75 |
| over 10 times | 9.50 |
| Average length of stay (%) | |
| 1-3 days | 53.50 |
| 4-7 days | 35.75 |
| 8 days & more | 10.75 |
| Accommodation types (%) | |
| Friend's or relative house | 17.25 |
| Guesthouse | 9.25 |
| Hotel | 73.5 |
| Travel expenses paid by (%) | |
| Myself | 48.75 |
| Company | 31.0 |
| Family members | 16.25 |
| Other | 4.0 |

Note: Sample size was 400 exactly.

During the development of this initial paper, further data collection for Phase 2 has been completed to confirm the preferred brands, combination of brands and price sensitivity. Conjoint analysis was used in Phase 2 as a research technique to identify how respondents' value offered components of a multi-branded hotel room. Conjoint analysis was used by researchers in the design of Courtyard by Marriott and later in the design of Fairfield Inns.

Ding, Geschke, & Lewis (1991) also used conjoint analysis to demonstrate how Sheraton Hotel and Towers, Stamford, USA could vary their room rates depending on a number of options including food and beverages, room type, and other factors to provide optimal weekend packages for their guests and in doing so, pricing strategies were recommended which helped predict the buying behaviour of their customers.

## 5. Implications for Researchers

Overall, this study could serve as a guideline for multi-branding in a hotel room setting for positioning the hotel brand. In addition, data collected in this study will be further utilized through simulations that allow determining the most favourable combinations of amenities and associated brands for respondents with different socio-demographic backgrounds and travelling patterns. Researchers interested in using virtual worlds for their studies should note the following:

a) Virtual worlds are good platforms for research. Based on the feedback we received from the participants, participants like the visual medium and interactive nature of this study. Visual and concrete type of studies would be appropriate in this platform.

b) The technical expertise of the researcher is important when designing the surveys in the virtual world. We used a complicated method that involved knowledge and expertise that might not be readily available to all researchers. As mentioned earlier, there are different survey methods available and so researchers should choose methods that would work best for them given their resources and constraints.

c) The technical expertise of the participants should also be taken into consideration and clear instructions should be provided to explain how to answer the survey.

d) Unlike other types of surveys, it is relatively easy to engage and re-engage participants. Once the participants' avatar name and contact information is captured, the same avatar can be contacted for future studies. This allows researchers to collect data from the same participants over time.

e) Conducting surveys in virtual worlds is a cost-effective option given that there few materials costs during data collection and only a small honorarium is paid to respondents.

f) As with real world studies, the researcher need to spend time in the virtual world to set up the data collection platform and get familiar with the environment and test the data collection process.

f) Depending on the purpose of the research, researchers can select different types of virtual worlds as platforms – Second Life is not the only option available.

g) Conducting surveys in virtual worlds is an eco-friendly method, with a very low carbon footprint.

## 6. Research Limitations

We faced three main challenges in collecting data:

a) International time zones. Our researcher in Hong Kong needed to collect data across various time zones when SL users were active. This meant mainly working in the mornings (Hong Kong time) to collect data from users in North and South America and in the evenings to get data from Europe and Asia.

b) Language issues. A large number of users of SL come from Korea and Japan – however, we found the English language level of some of these users was often not good enough for us to be able to easily engage them in the survey.

c) Very time consuming to travel across the thousands of islands in SL to meet users, who may, or may not agree to take part in the survey. This method of data collection requires persistence, patience and a thick skin at times.

Although the study was conducted in a 4-star setting, replication studies can easily be conducted for other types of hotels. It would also be possible to conduct tourism research due to the range of tourism attractions such as replica 3D cities (Munich, London, Paris, Dublin, Tokyo etc), National Tourism Boards (Scotland, England, Netherlands, Australia etc) and tourism attractions such as Andulusia, Sanada Jouka, St Paul's Cathedral, Stonehenge, Sistine Chapel, Guadalajara, Arabia, Eiffel Tower and many more.

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