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Born Virtuals and Avapreneurship:

*A case study of achieving successful outcomes in Peace Train –
a Second Life organization*

Robin Teigland, Stockholm School of Economics

Abstract

Borrowing from the international entrepreneurship business literature that uses the term “Born Globals,” I label organizations that have been created to discover and exploit opportunities primarily within virtual worlds as “Born Virtuals.” While relatively easy to establish, the challenge for Born Virtuals and avapreneurs, or entrepreneurial avatars, is to accomplish the critical task of coordinating the actions of multiple actors to achieve important outcomes – a challenge that has been repeatedly documented in research on virtual teams and organizations with geographically dispersed members. As such, this paper’s intent is to investigate two research questions: RQ1) What are the challenges for avapreneurs to achieving successful organizational outcomes in Born Virtuals? and RQ2) How can collective competence be developed such that these challenges can be overcome? To answer these questions, this paper presents a study of Peace Train, one Born Virtual organization created in Second Life. Peace Train was founded by three social avapreneurs interested in promoting peace in the world, and together with more than 100 volunteers, Peace Train organized during the course of eleven months PeaceFest 08, one of the largest fund-raising events to date in virtual worlds. This event attracted 8,000 to 10,000 unique avatars and raised 870,000 Linden dollars from approximately 3,000 individuals from across the globe, which were then donated to 10 real world charitable organizations.

Keywords: virtual world; entrepreneurship; virtual organization; born global; collective competence; Second Life; not-for-profit.

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Born Virtuals and Avapreneurship:

A case study of achieving successful outcomes in Peace Train – a Second Life organization

Robin Teigland, Stockholm School of Economics

An organization is a vehicle for cooperative endeavor, one in which the purpose is to coordinate the members' various activities in order to accomplish a goal that could not be achieved by any of its members individually. Through recent decades, most attention from organizational researchers has focused on investigating bureaucratic forms of organizing and not too surprisingly within more traditional physical, real world settings (O'Mahony & Ferraro, 2007). However, new forms of organizing are rapidly arising due to Internet-based communication technologies and in particular due to 3D environments. For example, through virtual worlds a group of geographically dispersed strangers from diverse national and demographic backgrounds may now relatively easily come together through their avatars and self-organize around common interests and even create for-profit and not-for-profit organizations that exist solely in the virtual world. Borrowing from the international entrepreneurship business literature that uses the term "Born Globals" to label organizations that from their inception discover and exploit opportunities in multiple countries (Autio et al., 2000; Knight & Cavusgil, 1996), I label these organizations "Born Virtuals" to specifically indicate that these organizations have been created by avatars to discover and exploit opportunities primarily within virtual worlds. In addition, I introduce the term, avapreneurship, or the act of entrepreneurship in virtual worlds.

While relatively easy to establish, the challenge for Born Virtuals and their avapreneurs is to accomplish the critical task of coordinating the actions of multiple actors to achieve important outcomes. The literature on virtual teams and organizations (e.g., Ancona & Caldwell, 1992; O'Mahony & Ferraro 2007) has suggested that this is quite a challenge as individual members may have different underlying goals and there are considerable practical difficulties in organizing activity due to differences in language, culture, and time zones among the members. Further research has shown that groups that are successful in achieving outcomes are those that develop collective competence among group members (Hansson, 1998; Sandberg & Targama, 1998). As we know relatively little about how social groups accomplish the critical task of coordinating the actions of multiple individuals to achieve important outcomes (Heath & Sitkin, 2001; O'Mahony & Ferraro 2007; Weick, 1979) and that virtual worlds are growing rapidly in terms of members, organizations, and economic activity (Castranova, 2007; Sivan, 2008; Spence 2008), it is pertinent that we investigate the organizing processes that enable Born Virtuals to overcome these challenges and to achieve successful organizational outcomes.

As such, in this paper, I investigate two research questions: *RQ1) What are the challenges for avapreneurs to achieving successful organizational outcomes in Born Virtuals? and RQ2) How can collective competence be developed such that these challenges can be overcome?* In so doing, I follow Heath and Sitkin's advice (2001) that more attention be devoted to general organizing processes such that we may deepen our understanding of how groups of people carry out their goals.

To address the above, I turn to the literature on virtual teams, virtual organizations, diverse teams, and project management as these provide valuable insights into organizing activity by groups of dispersed, diverse individuals. After developing the research questions from this literature, I then present the research site of Peace Train – a Born Virtual within Second Life. Peace Train was started in October 2007 when two avatars met in Second Life and discovered that they both shared a passion for peace: “an abiding hope and desire to advance the cause of peace in the world” (Peace Train). Interested in developing a new and effective means to promote peace, Peace Train’s first major activity was to gather followers and organize PeaceFest 08, “a global, interfaith, cross-cultural effort to create lasting peace through mobilizing dialogue, support and learning with real life peace organizations” (ibid). One of the largest fund-raising events to date in virtual worlds, PeaceFest attracted 8,000 to 10,000 avatars and raised 870,000 Linden dollars from approximately 3,000 individuals from across the globe that were then donated to 10 real world charitable organizations including UNICEF and Amnesty International (figure 1).



Figure 1. Donation to Uthango Social Investments by Peace Train raised during PeaceFest 08

To investigate the research questions, data collection for this study includes 1) interviews and surveys of the Peace Train core and extended members as well as PeaceFest 08 event facilitators, performers and participants and 2) extensive documentation during the eleven months leading up to and including the PeaceFest 08 event, such as e-mail correspondence, wikis, blogs, and SL notecards, text chat, snapshots, and machinimas. After presenting my findings based on the above, I then conclude the article with a discussion of these findings as well as areas for future research.

Background and Development of Research Questions

With the development of Internet-based communication technologies during the past years, diverse individuals from across the globe now have the ability to interact, build communities, and even create virtual organizations for commercial or other purposes. Virtual organizations have been defined as geographically distributed organizations “whose members are bound by a long-term common interest or goal, and who communicate and coordinate their work

through information technology” (Ahuja & Carley, 1999: 742). Researchers are increasingly turning their attention to emergent virtual organizations such as those involved with the production of open source software since they are becoming ever more prevalent (e.g., O’Mahony & Ferraro, 2007).

Of late, virtual worlds have developed to the point that they now present yet another organizing platform as they are “online immersive ‘game-like’ environments where participants engage in socialization, entertainment, education, and commerce” (Mennecke et al., 2007). In these virtual worlds, individuals come together in a rich environment and experience a feeling of “nearness/togetherness” (Ives & Junglas, 2008: 155) in which they assume an identity as an avatar and interact with other avatars via computer-based chat and/or more recently, voice over IP. In some instances, individuals may even self-organize around their interests and create a Born Virtual—a virtual organization created by avapreneurs to discover and exploit opportunities primarily within virtual worlds.

Virtual worlds, such as Second Life and Entropia Universe, continue to grow both in size and sophistication (Spence, 2008) and as such are attractive platforms for Born Virtuals as they enable economic activity through their own virtual currency. Individuals and organizations may develop and sell their own virtual products and services to others in the virtual world, receiving payments that can then be extracted and converted to real world currency (Sivan, 2008). The range of a financial transaction is from a micropayment of less than one U.S dollar to the record-breaking payment of USD 100,000 for the Asteroid Space Resort in Entropia Universe in 2007¹. Adding up these transactions within one virtual world is quite substantial. For example, in 2008 the ‘GDP’ of Entropia Universe was USD 420 million (in the range of the gross domestic products of smaller developing countries)². Of further interest is that in March 2009 the Swedish government granted a real life banking license to the Swedish virtual world provider, Mind Ark, thus guaranteeing all financial deposits by Entropia Universe members.

The above indicates that virtual worlds provide great promise as platforms for organizing economic activity and thus deserve attention from researchers, particularly in terms of what is necessary for Born Virtuals and avapreneurs to achieve successful organizational outcomes. Previous research on organizational groups has identified the concept of collective competence, a concept that is very relevant to our research question. Collective competence has been defined as the ability of a group to work together towards a common goal and results in the creation of a collective outcome, an outcome that could not be accomplished by one member alone due to its complexity (Hansson, 1998; Sandberg & Targama 1998). This competence is argued to be not at the individual level but at the group level and as such is a collective competence that integrates both practical as well as interpersonal competence. Practical competence refers to the group members’ ability to integrate their individual competences and solve problems together and includes a combination of learned skills, working routines, and processes as well as thinking chains and reasoning. Interpersonal competence refers to the ability of group members to interact and collaborate with other members while accomplishing the group’s tasks. Collective competence is constituted while group members collaborate in the course of joint action or practice and creates a set of inter-subjective meanings that are expressed in and through their artifacts (Cook & Yanow, 1993; Ruuska, 2005; Sandberg, 1994, 2000). Thus, collective

¹ <http://www.marketwire.com/press-release/Entropia-Universe-770780.html>, accessed August 10, 2009.

² Conversation with Christian Bjorkman, MindArk, 2009.

competence is based on a shared understanding by the members of the group as a whole that enables the group to successfully achieve its ultimate organizational goals (Ruuska & Teigland, 2009).

Yet various, related bodies of literature suggest that groups of individuals from across the globe interacting through Internet-based communication channels are faced with significant challenges to achieving collective competence and thus successful organizational outcomes. First, the research on teams with members from diverse demographic backgrounds has found underlying differences in team members' behaviors, values, and attitudes and that members not only notice different information but also perceive the same information differently (Maznevski, 1994). As a result, team members tend to lack a shared social reality and may even fail to have a common "here-and-now" perspective (Blackar, 1984). This research has also found that such organizations often suffer from ineffective communication leading to obstacles to effective performance and in some cases even failure (Lerpold, 2003; Maznevski, 1994).

Second, research on virtual teams has found that even though virtual teams are commonly used by traditional real world organizations to organize activity across geographic locations, they quite often run into problems of team conflict that lead to considerable difficulties in achieving outcomes (Armstrong & Cole, 2002; Hinds & Mortensen 2005). For example, when commonalities among members are removed, e.g., location, culture, a team's mutual awareness of individual members is disrupted. As a result, the ability to develop shared understandings among members is inhibited (Cramton, 2001) and may result in team members misunderstanding each other when communicating electronically, thus leading to conflict (Wakefield et al, 2009). Moreover, practical challenges such as different time zones create coordination difficulties (Ancona & Caldwell, 1992).

Third, the research on virtual, community-based organizations has found that just as in any organizational form there is a constant tension between fulfilling individual goals and integrating them with a common objective (O'Mahony & Ferraro, 2007). Conflict tends to arise when members are unable to resolve problems of power, authority and governance thus inhibiting the linking of individual efforts to community goals and the coordination of these efforts to fulfill these goals.

Each of the above bodies of literature on various organizational forms has identified potential challenges for Born Virtuals. Thus, the above thus leads us to two research questions: *RQ1) What are the challenges for avapreneurs to achieving successful organizational outcomes in Born Virtuals? and RQ2) How can collective competence be developed such that these challenges can be overcome?*

Research Site and Data Collection

To address our research questions, we conducted an in-depth qualitative study of Peace Train and its first large-scale event, PeaceFest 08 (figure 2). The reason for choosing Peace Train is that it is an organization *entirely conceived of and founded within the virtual world of Second Life*, a true Born Virtual. While the two founding avapreneurs of Peace Train met in a jazz club in world, they did not disclose each other's real life identities until several months into the organization's activities. A second reason for choosing Peace Train is that it is a fundraising charitable organization and these organizations play an important role in society – raising and

donating large sums to organizations and individuals in need across the globe. For example, USD 203 billion were raised by U.S charitable organizations in 2000 (Andreasen & Kotler, 2003). Generally speaking, charitable organizations that have a global reach tend to be large, more formal organizations such as the International Red Cross, United Nations Children’s Fund (UNICEF), Amnesty International, and the Peace Corps, while more local charities tend to have a more local reach with volunteers and recipients generally within the same geographic vicinity. However, with the penetration of virtual worlds such as Second Life, individuals who share the same social interests from across the globe may now join together to participate in joint charitable activities regardless of geographical, cultural, or organizational boundaries (Teigland, 2010).



Figure 2. Presentation slideboards and information about PeaceFest 08

As noted above, Peace Train was founded in October 2007. Preparations were initially organized within the virtual world of Second Life as the Peace Train group was formed and began to attract membership informally. Eventually, formal planning meetings were scheduled, drawing attendees primarily from countries in Europe and the Americas. The Peace Train team expanded to around 100 members, and it relied on technologies beyond Second Life to finalize planning (e.g., Google docs and calendars, team wiki and event blog). It is also important to note that at no point in the planning did the members of Peace Train ever meet physically in person. Taking advantage of technologies that allow real-time communication and presentation of visuals as well as a growing network of performers and artists in the space, the Peace Train team organized over 100 live events during the three/day PeaceFest from August 15 to August 17, 2008 (figure 3). While some of these events were live interviews and presentations with representatives of various charitable organizations around the world, the bulk of these events were of an artistic nature—live music, poetry, visual (two- and three-dimensional works), theatrical performances and even guided meditations and a virtual sailing contest. After an analysis of the attendance at the events, it was estimated that between 8,000 and 10,000 avatars from across the globe attended some portion of PeaceFest... way above the expectations of the Peace Train organization. In fact, some Peace Train members even stated that they were overwhelmed by the outpouring of avatars for PeaceFest. While it was difficult to get any demographic data on these avatars due to the nature of SL, it became clear through means such as discussions with other avatars and reading of avatar profiles that these individuals were truly

spread out geographically across continents. In addition, individuals performing or participating in the panels came from across the globe, e.g., Croatia, Uganda, South Africa (figure 4).



Figure 3. Virtual Africa location for PeaceFest 08



Figure 4. Worldwide locations of PeaceFest 08 participants

To reach interested individuals and avatars, a number of communication methods were used both in the real world and in Second Life. PeaceFest 08 volunteers learned about the event and the organization primarily through Second Life: group e-mails, word of mouth from other avatars, being part of communities, and seeing posters for the event at various Second Life venues, reading avatar profiles, and attending an information session in Second Life. The PeaceFest 08 panelists were primarily contacted out of world through more traditional means such as e-mail, Skype, and telephone, while the performers were primarily contacted through in world channels.

An important note is that despite the global reach and numerous languages, applications exist in Second Life that help overcome the challenge of avatars not all being able to speak the same language. For example, Babblor is a heads-up display (HUD) that translates between various languages in text chat. While translators are constantly being developed within virtual

worlds, Babblar enables an avatar to choose 1) a language to be translated from and 2) a language to be translated to. This is only a text chat translator, and while sometimes sketchy in its accuracy, it provided an essential capability allowing communication across cultures that otherwise would not have happened.

Of the 8,000 to 10,000 participants, some 3,000 contributed Linden dollars, the in-world currency, to Peace Train and the proceeds from the event were then donated to 10 real-world charitable organizations including UNICEF and Amnesty International as well as smaller, less well-known organizations in Ghana, Croatia, and South Africa (table 1).

Table 1. List of Participating Charitable Organizations

Organization	Location
Amnesty International	New York, NY, USA
UNICEF	New York, NY, USA
World Conference of Religions for Peace	New York, NY, USA
Kids4Peace	Atlanta, GA, USA
International Centre for Conflict and Human Rights Analysis (ICCHRA)	Accra, Ghana
Centro de Estudios Para la Paz (CEPPA)	San Jose, Costa Rica
Uthango Social Investments	Cape Town, South Africa
Coalition for Work with Psychotrauma and Peace (CWWPP)	Vukovar, Croatia
Media for Peace and Religious Tolerance Organisation (MPRTO)	Kampala, Uganda
UMUSEKE	Kigali, Rwanda

Data collection for this study consisted of 1) semi-structured, thematic interviews, 2) an online survey, and 3) secondary data for the period of October 2007 to December 2008. I first conducted a set of semi-structured interviews of Peace Train and PeaceFest 08 participants: three persons from Peace Train's steering group and two from participating organizations. Second, I created a short online survey with both closed and open-ended questions that was directed towards those individuals who had participated in organizing and helping out during PeaceFest 08. I received 17 completed surveys; however, it is difficult to calculate the response rate. Similar to many online communities, membership is fluid with people coming and going, making it difficult to draw a membership line around the organization and determine the total number of members. Third, I had access to a substantial amount of secondary material in the form of e-mails and documentation in more traditional formats, such as Word and PowerPoint, in addition to new formats available through Second Life, such as notecards, snapshots, and machinimas (films made in Second Life).

To conduct the analysis, I used an abductive research approach, implying that I started by identifying a particular phenomenon and then related that phenomenon to broader concepts (Coffey & Atkinson, 1996; Dubois & Gadde, 2002). It is appropriate to use the abductive approach when there is a high level of novelty in the research area and the researcher is investigating a new phenomenon and the underlying variables and their relationships (Ruuska,

2005). Of interest is that much of the virtual team research focuses on virtual teams that have been formally designated by management within one or more organizations and are not of an emergent nature. In addition, little research has been conducted focusing on charitable organizations and their activities within online environments. Thus, applying the abductive approach to the study of the relatively novel phenomenon of emergent charitable organizations within virtual worlds seems most appropriate.

Results

RQ1) What are the challenges for avapreneurs to achieving successful organizational outcomes in Born Virtuals?

With the collective competence concept in mind, I analyzed the Peace Train data looking for challenges to developing collective competence by Peace Train members. I found two primary challenges. First, the high fluidity of organizational membership in terms of avatars joining and leaving the project as well as varying levels of avatar commitment and engagement to achieving the goals impeded the group's ability to develop practical competence. Second, the ability to build and maintain trust among members affected the development of the group's interpersonal competence. I discuss each of these challenges in turn before presenting my findings regarding research question two - how these challenges were overcome within the Peace Train context.

Challenges to achieving practical competence.

As noted above, practical competence refers to the group members' ability to integrate their individual competences and solve problems together and includes a combination of learned skills, working routines, and processes as well as thinking chains and reasoning. In the case of Peace Train and the PeaceFest 08 event, the leadership team of avapreneurs primarily consisted of three individuals who labeled themselves Engineers surrounded by an extended group of around 100 individuals who were labeled Conductors or Passengers. However, when it came down to the number of people actually participating from start to end, there was a core group of around ten people who were "regulars" who would do things. In addition, there was a tremendous degree of fluidity in this group, which led to difficulties in distributing tasks and responsibilities and created insecurity as to whether tasks would be completed on time and to a sufficiently high degree of quality. Analysis of the interviews revealed that this fluidity was due to two main causes: 1) the fluid nature of community organizations – or social groups and 2) differences in communication and technology skills and preferences.

The fluid nature of community organizations. With any community organization, individuals become involved of their own freewill and may come and go as they more or less choose while deciding to what degree they are committed and engaged throughout. The benefit of this is that those who do decide to commit and engage are those who share the overarching goal of the organization, thus there is less conflict at the group level resulting from conflicting individual goals. This may even be even more so in the case of community organizations in Second Life. In this virtual world while individuals may come from all kinds of backgrounds and geographic locations across the globe, they may step out of their real world lives and find others with very similar social interests. One interviewee noted the following, "One thing I would like to add that I found with people involved in this is that people feel so constrained in their real life

with jobs, kids... everything is so well defined in RL and then they go into SL and see that here I can do anything...and then find something like this and can make a meaningful contribution and they probably would not do so in real life.”

Yet as all the interviewees mentioned, the fluidity of members was one of the biggest problems to achieving Peace Train’s goals. One interviewee noted, “There were so many people in the group, some would stay in the group while some kind of faded away. It was really difficult to say anything about who was in the project and who was not...there were people who contributed a whole lot in the beginning who weren’t there at the end, but there were people who had not been there for the long haul but who put in blood sweat and tears at the end.” ” Another person commented that people would come up with ideas or take on responsibilities, but then they would just disappear. One even noted that there were people “who did really let us down...they lost interest and did not believe that something was going to actually happen and that this was something they would want to be affiliated with ...” ”

Similar to community organizations in the real world, an individual’s engagement and commitment could be affected by personal and professional matters occurring outside of the community organization in addition to issues related to the dynamics of the community organization. For example, in the case of Peace Train one of the core team members was completely offline for a considerable period due to a real life natural disaster (a hurricane), issues at work, and a computer meltdown. And another of the more engaged Conductors quit six to eight weeks after the project’s inception due to a feeling of alienation and lack of effort appreciation by the other Peace Train members.

However, Second Life presents another challenge due to its more transient nature. As many are exploring this new environment and even new personas, people may easily create an avatar, log in, come to an event, provide some ideas, take on some responsibilities, and then just as easily disappear - never to return again. So, the issue of identity is a challenging one to understand in this new world. People may choose to reveal or keep hidden their real life identities in addition to creating completely new avatars, making issues of accountability extremely difficult. For example, one individual who revealed his real life identity was very involved in PeaceFest 08, but due to personal issues, this person suddenly disappeared – never logging on again as that avatar. Another person met an avatar who was under 18 years old but who had logged in using his mother’s SL account. One interviewee summarized this challenge in the following statement, “Getting people to be accountable is really difficult in world since they are avatars – it depends on who they are as people, but you can not stop someone from drifting around...you have to prepare yourself that that can happen...it is the absolute reality of the situation.”

Differences in communication and technology skills and preferences.

Virtual organizations within the Second Life environment have an overwhelming number of in-world and real world communication technologies that their members can use to communicate. As in any virtual organization, there is the issue of choosing the right communication technology for the task. In general, there are issues of skill and experience in using the different communication technologies as well as one’s being able to locally fulfill the hardware requirements that determines which technology to use. This was not the case for Peace Train as the members of Peace Train were all at more or less the same technological level since

they were all active in Second Life before becoming involved. However, members of the leadership team did not always agree on which communication technology to use and at times this led to conflict. For example, one member preferred to use voice to discuss the issues at hand in meetings while one other member preferred to use the chat function. In addition, the former member preferred to use a combination of Second Life and out-of-world technologies, e.g., wiki, Google docs, while the latter preferred to use primarily Second Life technologies, e.g., notecards and chat logs, for project planning, documentation, and tracking decisions. Several reasons were offered for these differences in preference. First, there is the issue of identity and the willingness of an individual to expose himself/herself and to “reduce the boundary” between his/her avatar and his/her real life self. Moving to voice from chat reduces this boundary and exposes more of an individual’s real life self. To take an example, a real life man may choose to be a woman in Second Life; however, using the voice function would clearly remove this difference. Second, there may be an experiential issue—the team member wanting to combine Second Life with outside technologies was more experienced with these out-of-world technologies and less comfortable with Second Life technologies than those members wanting to use primarily Second Life technologies. This member made the following comment, “Communicating in text-only shorthand (alphanumeric), with run-on sentences complete with onomatopoeia was a real bear to comprehend.” The third reason offered was related to differences in working styles. The member wanting to use voice and combined Second Life and real world technologies had more of a traditional, structured working style in which status reports and spreadsheets with timelines and milestones would be kept and on which changes would be entered after meetings. The preference by the other team members for using Second Life technologies was a source of frustration and confusion as expressed in the following quotation, “For me personally, it was confusing when versions of notecards had been passed around, all with the same name. There is no filing structure within Second Life or easy way to manage versions.” However, one interviewee called the spreadsheet the “spreadsheet from hell”—commenting that keeping this spreadsheet up to date only took more time than just sharing the information directly, especially since the whole process was such a fluid one with changes occurring constantly. Moreover, using the chat function instead of the voice function, while taking longer to communicate, facilitated the keeping of a log.

Challenges to achieving interpersonal competence.

Turning to the second challenge, interpersonal competence refers to the ability of group members to interact and collaborate with other members while accomplishing the group’s tasks. As presented above, the ability to build and maintain trust among members affected the development of the group’s interpersonal competence and here we found two primary causes: 1) the relationship between real life and Second Life identities and 2) issues related to virtual world access.

The relationship between real world and Second Life identities. As noted above, Second Life offers the opportunity for individuals across the globe to explore different personas. As a result, different people approach Second Life in different ways. For some individuals, it is seen as an extension of who they are in the real world—using it as a means to further their real life professional career. For others, Second Life may offer the opportunity to escape from the real world. Each individual has his or her own reasons yet all may meet in Second Life. However, this environment in which the meeting is between avatars as opposed to more traditional face-to-face, physical meetings may present challenges to the ability to build and maintain trust between

members of the same virtual organization. One interviewee made the following comment, “In some interesting ways, it feels like it is easier to connect to people in Second Life, especially when you have the ability to read profiles before speaking/chatting with them. However, there is a fragility to that trust, I think, derived from the limited depth of interactions, and the sense that Second Life is a place where people will explore personas. So in some cases I saw great levels of trust quickly erode as suspicions related to an avatar’s relationships with others, personal explorations in Second Life, etc. came to the surface and put things into question.”

In the case of Peace Train, members never met in any real world, face-to-face situation—all interactions were conducted through Second Life or other Internet-based technologies (e.g. e-mail, Skype). As mentioned above, the members of Peace Train did not know anything about each other’s real life, such as first or last name, background, or profession. It was several months into the project before the members started to reveal parts of their real world identities. One interviewee commented, “We did not automatically throw down the gauntlet and say who we were in RL (real life). Peace Train was not part of our real life dynamic so it took a while for trust to be established. I did not know their real life names for a long time... several months into the project we started talking about it and this is my first name and last name and this is what I do in real life.”

Issues related to virtual world access. In addition to the issues discussed above related to technology skills and preferences, another issue related to technology arose. As all activities primarily occurred through Second Life, members were dependent on their computer hardware and software and Internet connections to work 100 percent of the time in order to participate. Problems arising in any of these areas could lead to one’s avatar being absent from important meetings and communications as well as conducting his or her Peace Train tasks and responsibilities. Related to the above issue of the boundary between real world and virtual world identities, individuals experiencing such technical problems may be completely cut off since they may hesitate to share alternative methods for connecting (e.g., cell phones, instant messaging, e-mail addresses) as this reduces the boundary between their virtual and real world identities. Thus, a technical issue could completely strand an individual and leave the team without a method to know what the issue is or how to fill in for them in the project work. This lack of communication can also lead to suspicion and mistrust among the other members as was experienced in Peace Train. One interviewee commented, “I had a computer meltdown—I downloaded a new viewer and it was conflicting with another driver... I was out of commission for three weeks...it created a lot of tension and suspicion... you’re only as good as your technology.”

In summary, I found several challenges to collective competence. On the one hand, challenges related to the development of practical competence led to conflicts that were more at the task level while on the other hand, challenges related to the development of interpersonal competence led to conflict in which individuals had more difficulty in separating the task conflict from personal conflict.

RQ2) How can collective competence be developed such that these challenges can be overcome?

As noted above, collective competence is created while group members collaborate in the course of joint action or practice and creates a set of inter-subjective meanings that are expressed in and through their artifacts (Cook & Yanow, 1993; Ruuska, 2005; Sandberg, 1994, 2000).

Thus, collective competence is based on a shared understanding by the members of the group as a whole that enables the group to successfully achieve its ultimate organizational goals (Ruuska & Teigland, 2009). With this in mind, I analyzed the data looking for the underlying factors that facilitated Peace Train in overcoming the challenges noted above in the first research question. I found the following: 1) co-development of a clear and inspiring vision and goal at the very beginning of the project, 2) a guiding critical mass of individuals with complementary skills at the core, 3) an empowered and trusted group of engaged individuals surrounding the core, 4) joint problem solving through boundary objects, 5) regular and effective communication through multiple channels in world and out of world, and 6) a flexible and cooperative mindset among members.

Co-development of a clear and inspiring vision and goal at the very beginning of the project.

The leadership team of avapreneurs of Peace Train drafted a vision statement and goal at the beginning of the project that was then discussed with a small group of involved individuals before a final version was agreed upon. The final statement related to the PeaceFest 08 event: “Destination Peace: PeaceFest 08 is a global, interfaith, cross-cultural effort to create lasting peace through mobilizing dialogue, support and learning with Real Life Peace organizations.” The goal as specified in the following statement was to orchestrate “a three-day event to be held in August of 2008, featuring artists, performances, panel discussions, and more. The PeaceFest will run around the clock in Second Life and will be integrated with Real Life events. The goal will be to raise funding and volunteerism for a variety of peace-related organizations that serve our global community.” First, the co-development of this vision and goal ensured that all those involved felt that they were part of the process and encouraged their commitment and engagement. Second, being able to communicate this on the Website as well as in all communications in world facilitated the ability to attract others with similar interests to the effort. As with any community organization, you cannot force people to join, rather you have to ignite their passion, yet this can only be achieved if one can easily communicate the vision and the goals of the organization.

A guiding critical mass of individuals with complementary skills at the core.

The leadership team of avapreneurs worked hard on creating a high level of collective competence among themselves (figure 5). One of the ways in which they achieved this was through continuous discussion and a renegotiation of each individual’s roles based on their interests and skills while overcoming conflict through revisiting the vision of Peace Train. In terms of skills, the core team consisted of individuals who had varying levels of the following skills:

- Second Life technical skills—to build, communicate, manage resources in Second Life, etc.
- Technical skills with other technologies—to conduct activities in Skype, shoutcast audio streaming technology, image editing software, Website management, blog posting.
- In world communication skills—to inspire people to join Peace Train, and to keep the information flowing internally within the group and externally to performers, contributors, and the public.
- Out of world communication skills—to ensure the real life to Second Life connection, explaining the event in understandable terms to various stakeholders.

- Conflict resolution skills—to keep the team together through working through interpersonal issues and implementing “crisis management.”
- Project management skills—to offer the right questions and process that will lead to a shared understanding of the project’s goals, scope, key milestones, tasks, etc., and to identify some norms for how the team operates.
- Execution skills—to figure out how to execute the ideas that the team develops.



Figure 5. Peace Train’s avapreneurs

While all individuals had some level of these skills, what was critical for Peace Train’s success was that one individual was particularly strong in one of these skills and as such would often take the lead in this area.

Empowered and trusted group of engaged individuals surrounding the core.

While Peace Train had created a vision and an overarching goal, the operationalization of these created considerable challenges as noted above. For example, in the planning meetings, many individuals who came to the meetings were full of suggestions, yet clearly the group could not realize all of these suggestions. While the core team was open to new ideas, they found that quite often individuals who made the suggestions were not always willing to make those suggestions happen. Thus, as time progressed, the leadership team realized that they needed to empower others and trust and support them to make their ideas happen while not micro managing them. Individuals were encouraged to take on as much responsibility as they so desired as well as to work in the way they felt most comfortable, i.e., independently or in teams. One avapreneur commented, “We were open to those ideas, but we tried to let people make them happen themselves. For instance, one of our members had so many ideas, and at first wanted us to make them happen. We empowered this member to do them in her own venue, gave her kudos and support and publicity. Also, because of the transient nature of SL, we decided that we were not going to hound people...I feel strongly that this is the way to go.....to allow people to live out their own ideas and connect them to a great cause, but don’t take the ideas on as a task yourself.” Another avapreneur noted, “I had to (and I think each of us to some extent had to) let go of certain things, trusting that the ones in charge would get things done.” Moreover, as the nature of the project was very fluid and subject to change, the avapreneurs had to trust the

surrounding group of individuals to be flexible in terms of taking on new roles and responsibilities “on the cuff” as well.

Joint problem solving through boundary objects.

Similar to findings in the community of practice literature (e.g., Wenger 1998), we found that the creation of collective competence was greatly facilitated when the members of Peace Train conducted joint problem-solving tasks. Early in the project, the members sat down and decided to create a logo for PeaceFest 08. They thought that this would be a simple task; however, it resulted in quite some discussion related to their underlying assumptions and backgrounds. What is of interest in this particular example is that the logo served as a boundary object that facilitated the development of a shared understanding between the different project members. Boundary objects are objects that inhabit several intersecting worlds, satisfying the informational requirements of each of them (Star & Griesemer, 1989). Boundary objects facilitate the development of collective competence as they help project members to create a common language and make different views visible for discussion. They can be used as a common point of reference for conversations (Harvey & Chrisman, 1998) since individuals can all agree they are talking about the same issue, yet people attach different meanings to the issue. For the Peace Train core team, three concepts for the logo were developed. One of the avapreneurs wanted to go with the more conservative logo while two of the other avapreneurs did not want such a corporate image (figure 6). One avapreneur noted, “This was a music festival—we did not want a corporate image—we wanted bright and sunny and people to think of being happy and dancing.”



Figure 6. PeaceFest 08 logo

Regular and effective communication through multiple channels in world and out of world.

Regular and effective communication was a key element in gaining people’s involvement and commitment to the project. First, the avapreneurs decided to run weekly Monday meetings open to the Conductors and the extended group of other interested individuals (figure 7). These meetings were scheduled in the afternoon U.S time such that individuals within Europe could also attend. To prepare for these meetings, the agenda was communicated via Second Life notecards attached to group announcements. The agenda was a fairly standard one: welcoming new members, going through the current list of tasks, seeking volunteers, and discussing issues. Second, the core team took additional measures to ensure that the meetings were run efficiently. They often met just prior to the larger group meeting--enabling them to coordinate themselves

before discussing with others. They also developed the practice of simultaneously conducting a private voice conference call at the meetings with the purpose of coordinating the typing of messages and fielding of questions from the attendees who were using text chat. Moreover, this private conference call allowed for verbal handoffs between the Engineers that the extended group did not need to hear and even to discuss and to stop unwanted behavior by some of the attendees.



Figure 7. Weekly Peace Train planning meeting

In addition to the above, communication between meetings and to the extended group as well as out of world individuals occurred through several channels, e.g., chat, IMs, notecards, group notices, rezzable invitations, posters that gave notecards, and the Peace Train blog. Finally, for the events in PeaceFest 08, notices were placed on the Second Life community forum and at each of the various landing points of the PeaceFest 08 event, there were greeters (individuals tasked with welcoming attendees) and a free Heads Up Display (HUD) distributed to attendees. The HUD allowed the attendees to view a list of events and landmarks to those, enabling them to quickly choose what they wanted to attend, and teleport there efficiently. When the HUD needed updating, notecards were rapidly created and distributed, containing updated event information and landmarks. Table 2 provides a summary of the different channels and their purpose.

Table 2. Overview of multiple channels of communication

Channel	Purpose
E-mail	For coordinating meeting times and nearly all communications with panelists or external providers of services (e.g. logo work)
Web conference	For the Engineers to work through the project task list
In-world voice	For the Engineers when coordinating (live) during weekly group meetings
In-world chat	For informal and formal meetings with performers, group members, etc.
In-world notecards	For communicating large volumes of information to others who are off-line, and for sharing meeting agendas
In-world slideboards	For showing presentations as well as connecting to RL through showing pictures of real life activities and individuals
Greeter HUD	For presenting a list of events and their landmarks to attendees
Nicecast/ Shoutcast	For bringing the Skype conversations during the panels into SL
Out of world instant message	For quick check-ins and coordination
Skype	For discussions with panelists not familiar with Second Life
Project Website / blog	For promotional postings, and project updates and info for public consumption
Google docs	To list and share the PeaceFest agenda with a core set of contributors, to enable viewing of the latest information
Google calendar	To schedule actual PeaceFest events
Phone calls	For solving emergencies

A flexible and cooperative mindset.

Finally, perhaps the most important factor in overcoming the challenges was a flexible and cooperative mindset held by the avapreneurs and by many of the group's other members. As this was one of the first times that many of the members had participated in an in world fundraising event, numerous technical issues and practical challenges arose. One individual stated, "we were on a steep learning curve big time...we were flying blind those first few months...but we shared a common vision as a concept."

To overcome these challenges and move forward towards the goal, members were open to experimenting and trying new things--to learn by doing, as well as were flexible when the need for change presented itself. Another person said, "In Second Life you can do anything... you just figure out a way to do it... no one told us that these should be your best practices ... we did not know what we could do but we did not know either what we could not do." In addition, individuals were open to different ways of working, communication preferences, and opinions--focusing instead on the task and encouraging others to complete their tasks in their own way. As

one person mentioned, “In many cases, I have a specific point of view, but I know the process, and I know that not everyone is going to agree. But we have a collaborative vision, and I knew better than to take it personally.”

In the end, the project was a success and became “something extraordinary and connected people from many ethnicities and geographies who all share a common goal.” Another person noted, “It worked well that the engineers, conductors and other members brought their unique skill set to the project. The only competency we all needed was work ethic and the desire to be peaceful.”

Discussion

Before concluding, a few further findings related to the following issues deserve discussion: 1) choice of communication technology, 2) conflict in organizations, and 3) structural characteristics and collective competence.

Choice of communication technology

The findings here draw into question previous research findings that individuals tend to match the communication technology and its level of media richness to the complexity of the task at hand. In other words, the higher the complexity of the task, the richer the communication channel is. For example, the telephone is richer than e-mail (Maznevski & Chudoba, 2000). However, in the case of Peace Train I found that this was not necessarily the case as other issues came into play such as that of the reluctance of individuals to reveal their real life identities—preferring to stay with text chat over moving to voice. A second issue related to different work styles—with individuals viewing the use of text chat as a more efficient medium in terms of project documentation than voice. However, the most interesting finding is that at no time throughout the 11 months leading up to PeaceFest 08 did any of the Peace Train members ever physically meet face-to-face in the real world... further calling into question previous findings that individuals have to meet face-to-face to achieve successful outcomes (ibid).

Conflict in organizations

When comparing our findings from Peace Train to research on projects in more formal or bureaucratic organizations, we find that the conflict experienced by Peace Train members was more at an operational level than at a strategic level. This operational conflict was largely related to resource allocation and the interdependence of tasks. In more formal organizations, conflict may arise due to conflicting member goals, i.e., individuals do not have the same shared vision or understanding of the vision nor share the same goals with the project (Ruuska & Teigland, 2009). One of the primary reasons for this lack of strategic conflict may be that through virtual worlds such as Second Life, individuals may seek out and form a community or organization with others who share similar social interests and goals regardless of where they physically are located.

Structural characteristics and collective competence

Comparing the structure of the Peace Train organization to that of other community organizations, we find a similar structure—a critical mass of tightly knit insiders surrounded by decreasing rings of decreasingly engaged committed participants. Our findings can be compared to the work on communities of practice that suggests that there are different levels of community of practice participation: 1) full participation (insider), 2) peripherality (legitimate peripheral participant), and 3) full non-participation (outsider) (Wenger, 1998). In full participation, the person is an inclusive community member. He or she has gained legitimacy through engaging with other community actors in common actions and has acquired the formal and informal ability to behave as a community member (Lave & Wenger, 1991). Peripherality connotes legitimate partial participation in the community. Full non-participation is total exclusion from the community and occurs because the individual either does not desire to participate or the individual is not allowed to participate by the community. Further research on electronic communities supported through listserv technology (Teigland & Wasko, 2004) found that the network is structured as a star with a critical mass surrounded by peripheral connections emanating outwards. There are no cliques, rather the core actively responds to many unique and overlapping individuals, and the periphery engages in both receiving and providing advice to others. However, the primary difference between the structure of electronic communities and that of communities of practice is that individuals in the core of electronic communities are not as closely tied to each other as they are in communities of practice. Interestingly, our findings then are more similar to the community of practice literature that is based on research of face-to-face communities than to research on electronic communities supported through listserv technology as we found a group of tightly knit individuals in the core.

Of importance to future efforts similar to that of Peace Train, one takeaway from this study is that not all individuals need to be equally involved in the virtual organization. Rather, successful outcomes may be achieved if there is a core of individuals who have a burning passion for the goals of the organization, who develop a high degree of collective competence, and who are then surrounded by layers of individuals with decreasing levels of engagement and commitment. Thus, success is achieved even though the degree of collective competence weakens as one moves away from the core.

Conclusion and Future Research

In conclusion, while Born Virtuals and avapreneurs face certain challenges to developing collective competence, these can be overcome through leveraging the communication and immersion features that are particular to virtual worlds. I hope that researchers and practitioners involved in the organization of economic activity in virtual worlds find this research of interest. In terms of limitations however, I would like to note that this study is very limited in the generalizability of the results. It is difficult to assess how representative the findings are for other Born Virtuals than those similar to the one examined here. Clearly more in-depth studies comparing types of Born Virtuals is necessary as well as research focusing on comparing Born Virtuals across other dimensions such as virtual worlds is suggested. While virtual worlds are a relatively new organizational platform, there is much to do in terms of investigating issues such as leadership and power, organizational commitment, and organizational structure. Additionally, as noted in the beginning of this paper, Born Virtuals share similarities with Born Globals. Clearly, further research should be conducted comparing Born Virtuals with Born Globals and

entrepreneurs and avapreneurs such that cross-fertilization between the two areas would be possible. Finally for practitioners, I hope that the findings are helpful in enabling them to develop collective competence in their own Born Virtuals.

This research also reveals that virtual worlds such as Second Life do provide tremendous potential for organizing economic activity. For example, these worlds provide numerous opportunities to real world organizations such as the local charity organizations involved in PeaceFest 08 to expand their global reach or increase their awareness with others across the globe who have shared interests. Moreover, Born Virtuals may have the ability to mobilize a workforce more easily than organizations in the real world as they reach out to individuals with similar interests across the globe. One interviewee commented that the ability to participate in virtual world charitable activity made people who otherwise felt powerless feel empowered as noted in this statement, "This is a way of empowering people who otherwise feel powerless, they see what is going on in the world, but there is nothing they feel they can do locally, perhaps do not want to be part of a mob protesting. Rather they want to be part of a solution and through SL they have this opportunity." Several of the volunteers also mentioned that while they were not active presently nor did they plan to be active in charitable activities in their real life, they were quite active in Peace Train and in some cases in other charitable activities in SL. Second Life provided these individuals with an opportunity to contribute to a charitable organization without having to leave the comfort of their home.

On a final note, Peace Train continues to be an active organization since PeaceFest 08. The momentum of PeaceFest 08 has carried the original Peace Train Engineers to form a 501 c, or federally recognized non-profit organization, in the United States. The group continues to sponsor events in Second Life that raise awareness of peace-related efforts globally, and it successfully ran PeaceFest 2009. With its official non-profit status, the group will be able to further legitimize its presence, promote its cause, and provide its donors, at least those who are U.S. taxpayers, the benefit of tax-deductible contributions.

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Bibliography

- Ahuja, M. & K. Carley. (1999). Network structure in virtual organizations. *Organization Science*, 10 (6): 741-747.
- Ancona, D.G. & Caldwell, D.F. (1992). Bridging the boundary: external process and performance in organisational teams. *Administrative Science Quarterly*, 37, 634-65.
- Andreasen, AR & Kotler, P, (2003). *Strategic Marketing for Nonprofit Organizations* (6th ed.). Upper Saddle River: Prentice Hall.
- Armstrong, D. J., & Cole. P. (2002). Managing distances and differences in geographically distributed work groups. In P. J. Hinds, S. Kiesler (Eds.). *Distributed Work*. MIT Press, Cambridge, MA, 167-186.
- Autio, E., Sapienza, H. J. & Almeida J. G. (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. *Academy of Management Journal*, 41 (5), 909-924.
- Blakar R.M. (1984). *Communication: A social perspective on clinical issues*. Oslo: Universitetsforlaget.
- Brown, J.S. & Duguid, P. (2000). *The Social Life of Information*. Boston: Harvard Business School Press.
- Castranova, E. (2007). *Exodus to the Virtual World: How Online Fun is Changing Reality*. New York: Palgrave Macmillan.
- Coffey, A. & Atkinson, P. (1996). *Making sense of qualitative data: Complementary research strategies*. Thousand Oaks, CA: Sage.
- Cook, S.D.N. & Yanow D. (1993). Culture and organizational learning. *Journal of Management Inquiry*, 2 (4), 373-390.
- Cramton, C. D. (2001). The mutual knowledge problem and its consequences for dispersed collaboration, *Organization Science*, 12 (3), 346-371.
- Dubois, A. & Gadde, L.E. (2002). Systematic combining: An abductive approach to case research. *Journal of Business Research*, 55, 553-560.
- Hansson H. (1998). *Kollektiv kompetens*. Göteborg: BAS.
- Harvey F & Chrisman, N. (1998). Boundary objects and the social construction of GIS 590 technology. *Environment and Planning, A* 30, 1683-94.
- Heath, C. & S. Sitkin. (2001). Big-B versus Big-O: What is organizational about organizational behavior? *Journal of Organizational Behavior*, 22, 43-58.
- Hinds, P. J. & Mortensen, M. (2005). Understanding conflict in geographically distributed teams: the moderating effects of shared identity, shared context, and spontaneous communication,” *Organization Science*, 16 (3), 290-307.
- Ives, B., & Junglas, I. (2008). APC Forum: Business Implications of Virtual Worlds and Serious Gaming. *MIS Quarterly Executive*, 7 (3), 151-156.
- Knight, G. A. & Cavusgil, S. T. (1996). The born global firm: A challenge to traditional internationalization theory. *Advances in International Marketing*, 8, 11-26.
- Lerpold L. (2003). *Reputation by Association: Exploring Alliance Formation and Organizational Identity Adaptation*. Published doctoral dissertation. Stockholm: Stockholm School of Economics.
- Lave, J. & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- Maznevski M. (1994). Understanding our differences: performance in decision-making groups with diverse members. *Human Relations*, 47 (5), 531-552.

- Maznevski, M.L. & Chudoba, K. M. (2000). Bridging space over time: Virtual team dynamics and effectiveness. *Organization Science*, 11 (5), 473-492
- Mennecke, B. E., E. M. Roche, et al. (2007). Second Life and Other Virtual Worlds: A Roadmap for Research. *Twenty-Eighth International Conference on Information Systems*, Montreal, Canada.
- O'Mahony, S & Ferraro, F. (2007). The emergence of governance in an open source community. *Academy of Management Journal*, 50 (5), 1079-1106.
- Peace Train, <http://slpeacefest.wordpress.com>, cited March 1, (2009).
- Ruuska I. (2005). *Social Structures as Communities for Knowledge Sharing in Project-based Environments*. Published doctoral dissertation. Helsinki: Helsinki University of Technology.
- Ruuska, I. & Teigland, R. (2009). Ensuring Project Success through Collective Competence and Conflict Management in Public-private Partnerships: A Case Study of a Swedish Triple Helix e-government Initiative. *International Journal of Project Management*.
- Sandberg, J. (1994). *Human Competence at Work: An Interpretative Approach*. Göteborg: BAS.
- Sandberg, J. (2000). Understanding human competence at work: An interpretative approach. *Academy of Management Journal*, 43 (1), 9-25.
- Sandberg, J. & Targama, A. (1998). *Ledning och förståelse*. Lund: Studentlitteratur.
- Second Life, <http://secondlife.com/whatis/marketplace.php>, cited March 1, 2009.
- Sivan, Y. (2008). 3D3C Real Virtual Worlds Defined: The Immense Potential of Merging 3D, Community, Creation, and Commerce. *Journal of Virtual Worlds Research*, 1 (1).
- Spence, J. (2008). Demographics of Virtual Worlds, *Journal of Virtual Worlds Research*, 1 (2).
- Star, S.L. & Griesemer, J.R. (1989). Institutional ecology, 'translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-1939. *Social Studies of Science*, 19, 387-420.
- Teigland, R. (2003). *Knowledge Networking: Structure and Performance in Networks of Practice*. Published Doctoral Dissertation. Stockholm: Stockholm School of Economics.
- Teigland, R. (2010). What benefits do virtual worlds provide charitable organizations? A case study of Peace Train – a charitable organization in Second Life. In Wankel, C. & Malleck, S. (Eds.). *Emerging Ethical Issues of Life in Virtual Worlds*, Information Age Publishing.
- Teigland, R. & Wasko, M.M. (2004). Extending Richness with Reach: Participation and Knowledge Exchange in Electronic Networks of Practice. In P. Hildreth & C. Kimble (Eds.), *Knowledge Networks: Innovation through Communities of Practice*. London: Idea Group Inc., 230-242.
- Wakefield, R., Leidner, D, and Garrison, G. (2009). A Model of Conflict, Leadership, and Performance in Virtual Teams. Working Paper.
- Weick, K.E. (1979). *The social psychology of organizing*, (2nd ed.). Reading, MA: Addison-Wesley Publishing Company.
- Wenger E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.