Our essay proposition states that doing a large-scale representative survey instead of a multi-method living lab research generates more scientifically valid insights about user needs. The case study chosen to concretize our claim of disapproval towards the aforementioned proposition relates to the emergence and growing acceptance of video games – as not only an enhancement to learning and education and the groundwork of citizen science – but also as a new method for scientific inquiry. Indeed, our intention is to defend the claim that the development of social digital gaming environments have fostered communities of public and scientifically worthy inquiry potential.

Whilst demonstrating the viability of applying the living lab approach to video games, we shall prove that a multi-method living lab research does in fact reflect far more depth about user needs than a large-scale representative survey.

Theoretical Framework

According to Jo Pierson and Bram Lievens in the paper Configuring Living Labs for a Thick Understanding of Innovation, “understanding and involving users in broadband innovation has become a central issue in private and public research and policy on information and communication technologies in Europe and elsewhere. Furthering design and development of future technologies and services that are well adapted to potential users will lower the threshold for social acceptance and increase the potential for e-inclusion.” Pierson and Lievens also make the claim that “technologies should be studied in situ and in use as part of [the] socio-technical arrangements of humans and machines joined together in action and embedded in social contexts;” all the while introducing the definition of a living lab given by William J. Mitchell, former dean of MIT’s School of Architecture and Planning:

‘Living Labs is a research methodology for sensing, prototyping, validating and refining complex solutions in multiple and evolving real life contexts.’

According to Niitamo et al, 2006, Living Labs as Public Private Partnerships (PPP) are an emerging concept in which “firms, public authorities and citizens work together to create, prototype, validate and test new services, businesses, markets and technologies in real-life contexts.” Furthermore, it is claimed that a context adequately captured by a Living Lab “will both stimulate and challenge research and development as public authorities and citizens will not only participate in, but also contribute to, the whole innovation process.” Foslidt agrees that this user-centered approach from an early stage allows the getting of “feedback on services at different levels of development, where relatively large numbers of users may be involved in the [actual] innovation process.”

Case Study

Jodi Asbell-Clarke and Elizabeth Rowe define ‘social games’ in their paper Scientific Inquiry in Digital Games as games that “provide inherent community goals, bringing people together to solve problems and build knowledge.” Considering that such video games can emerge from a wide variety of genres, we have specifically chosen to focus on particular titles that come from categories such as ‘serious gaming’ and ‘free-to-play massively-multiplayer online games.’

According to Carl Hans et al, 2007, the Living Lab concept “need not be restricted to physical environments if the main defining factors are in place: a strong, real-life user base, the possibility to involve multiple stakeholders, and a flexible, multi-contextual framework.” Furthermore, the claim is made that immersive, massively-multiplayer gaming and related technologies not only fulfill the major requirements of the living lab methodology, but also bring potential added-value.

These are thus our claims, based on the aforementioned context:

1. Firstly, according to Eriksson et al, 2006, the multiplicity of context available in a living Lab is a distinctive sign of the quality of research; and in the case of free-to-play massively-multiplayer online games such as Warframe, developed by Digital Extremes, or free-to-play massively-online battle arena games such as Dota 2, published by Valve Corporation, the ability of players – or users – to construct and then openly sell objects (such as cosmetic items to be traded via player-to-player or community-to-player micro-transactions) present a number of opportunities: it allows not only operators of the games to keep designing inspiring content based on the needs and desires of the players, but simultaneously allows participants (users) to be truly co-creative in developing, modifying, sharing and otherwise utilizing 3D-technology in producing digital objects or alternative versions to be used in the game’s virtual environment.

2. Secondly, and in contrast to the implementation of new Living Labs often being based on a statistical analysis of a population displaying particular degrees of citizenship or engagement – meaning its user-base is built on specific demographic properties that fulfill the particular Living Labs immediate requirements – the population accessible to a Living Lab methodology applied to an immersive virtual world or MMO game is theoretically limitless. For example, with seriously lacking at a single dimension categorization of gamers (let’s say from an industry perspective), and while taking into account the free-to-play business model aforementioned: the players of Warframe or Dota 2 may erupt from a very diversified panel of life: some would be ‘teenagers’ with no income, some are ‘grown-ups’ with a willingness-to-pay that exceeds the cost of a regular triple A video game, some are ‘young adults’ with an excrated sense of thriftiness, some are ‘early-hackers’ and some are ‘bandwagon jumpers’. In short, age, financial status, educational or cultural background may vary immensely, and the volume of participants easily reach the tens or hundreds of thousands of players, in each segment. Another example could include the digital competence of gamers, varying once again from youngsters or teenagers having very little understanding of ICTs and media economics, to full-blown game developers or programmers with a developed sense of the Web 2.0 and the sharing economy.

3. Thirdly, and in terms of involving multiple stakeholders, we introduce Foldit – a “multi-player online game that engages non-scientists in solving hard prediction problems. Foldit players interact with protein structures using direct manipulation tools and user-friendly versions of algorithms from the Rosetta structure prediction methodology, while they compete and collaborate to optimize the computed energy. […] Players [are in effect] working collaboratively [to] develop a rich assortment of new strategies and algorithms, unlike any other computational approaches.” Still according to Seth Cooper et al, 2010, “the integration of human visual problem-solving and strategy development capabilities with traditional computation algorithms through interactive multiplayer games [has now become] a powerful new approach to solving computationally-limited scientific problems.” A prime example can be found in the 2011 instance where Foldit players helped unlock the structure of the P-MPV retroviral protease, providing opportunities for the design of new anti-retroviral drugs, such as anti-HIV medicine. Here we may point out the fact that the participation in the replacement structure had been unable to be solved by researchers for over a decade. According to Khatib et al., 2011, “the critical role of Foldit players in the solution of the P-MPV PR structure shows the power of online games to channel human intuition and three-dimensional pattern matching skills to solve challenging scientific problems.”

In summary, immersive virtual worlds and MMO gaming technologies are argued to fulfill a major required factor for Living Lab maturation, and that is a “virtual infrastructure to share and transfer ideas and results,” according to Eriksson et al, 2006.
Yet, there are still doubts to be found regarding both the realm of video games and the Living Lab concept. According to Hans et al. 2007, the carefully selected population offered by traditionally implemented Living Labs “may need to be sacrificed in order to access such volume of participants, as the user base of virtual worlds may not yet be a truly representative cross-section of a population as such.” That is indeed quite a downside considering the challenges of intellectual property rights, and the dilemmas that may arise along the way regarding the ownership of co-created digital objects, issues that go way beyond those which the Living Lab concept inherently imposes.

Another counterargument may emanate from Ingrid Hoofd and her questioning of whether video games may – or especially, may not – aid morally upright civic engagement by young people. She mentions Kahne et al. 2009, in her research, and point out the fact that “most research conducted on video games and citizenry [do speculate] that playing video games simply takes time away from the exigencies of democratic citizenship; and assume that the violent and individualistic content of video games [leads] to anti-civic behavior.” So unlike our earlier claim that the video game player demographic may be in constant expansion, it would seem as if past assumptions made about the violent components of certain video games are still being considered – presumably based on research examples carried out on commercially successful triple A titles such as the Call of Duty or the Grand Theft Auto franchises; but very much unlike the free-to-play cooperative/competitive games used in our case study. One could have hoped that more than a decade later, and given the much wider variety of commercially and artistically accepted video games, the video game player demographic would indeed finally be acknowledged as ever-increasing in quality and in potential scientific and civic viability.

The Alternative View

When looking to generate valid insights through large-scale representative surveys, one must keep in mind the three key concepts of social research: reliability, representativeness, and validity. Large-scale surveys indeed tend to have a higher generalizability of results, due to its larger scale of sampling. A survey’s reliability, however, “relies upon [the] standardization of research instruments, to [be able to adequately] measure the same thing again and again,” which in turn is what provides reliability.12 Yet, downfall arises with claims of validity since survey answers are often directly dependent on the concrete question being asked; and according to Mc Neill et al. 2005, “the data collected [then] seems to be a product of the research method used rather than of what is [actually] being studied.”13 One may thus assume that attempting to generate valid insights about user needs or behavior via large-scale surveys and based solely on participant answers may not prove entirely consistent with their actual behavior or preference. In a contrasting light, the Living Lab approach seems to adequately combine the strengths of both quantitative and qualitative methodology; given that insights derived from a multi-method research and ‘thick’ description are more likely to resemble real life.

Conclusion

Based on the background literature and our case study, we have thus found that the Living Lab approach could actually adequately allow for the design and conducting of large-scale qualitative research – when combined with gaming and information and communication technologies, and given the particular retainment of ethnographic research characteristics outlined above. Generating in-depth insights about user needs through an iterative and interactive process allows for a much better and dedicated response to user needs and preferences – at early, and then varying stages of product or service development. For the case of online games, it enables the creation of tailored, co-created or even self-created content, the fostering of truly innovative communities, the shifting from a reactive player base to a proactive user base, and a new-found scalability for qualitative multi-method research methods. Finally, we have also determined that a large-scale representative survey will most often demonstrate its true value when adequately combined with other methods, rather than as main pivotal angle of any research.

References


Essay Proposition:

Doing a large-scale representative survey instead of a multi-method living lab research generates more scientifically valid insights about user needs.

Case Study:

*Applying Gaming Technology to the Living Lab Concept*