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An Exploration of Entrepreneurship in Massively Multiplayer Online Role-Playing Games: Second Life[®] and Entropia Universe[®]

By Stéphane Kieger, France

Abstract

Virtual worlds represent a new market with a distinct economy and many individuals are trying to exploit this very new technology in the search of profitable opportunities. The current paper proposes to study entrepreneurship in the Massively Multiplayer Online Role-Playing Games (MMORPG) Second Life[®] and Entropia Universe[®] in which monetary trades are possible. A survey was proposed to the community of players of both games, and from a sample of 244 players, nineteen entrepreneurs were contacted for a second survey. The traits of the entrepreneurs were compared to those of the players and entrepreneurship was observed in Second Life[®] and Entropia Universe[®]. In fact, all the necessary conditions are present for entrepreneurship: a new technology giving new sources of revenues, an entrepreneur willing to invest money in order to increase his wealth, and a market with an economy well understood. The different entrepreneurs have developed successful ventures in several markets, and they had well defined the strategy they wanted to adopt. They have examined the different markets in which they have entered although they did not use all the tools known in the marketing fields. Further, some steps in the process of creation of the venture may not be important and some may be done relatively swiftly, thus the venture creation in MMORPG may be relatively easy. In conclusion, the venture creation may be relatively undemanding in virtual worlds, and this opens new possibilities for the future.

Keywords: entrepreneurship; opportunity recognition; Second Life[®]; Entropia Universe[®]; MMORPG.

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An Exploration of Entrepreneurship in Massively Multiplayer Online Role-Playing Games: Second Life[®] and Entropia Universe[®]

By Stéphane Kieger, France

“Cyberspace consists of transactions, relationships, and thought itself, arrayed like a standing wave in the web of our communications. Ours is a world that is both everywhere and nowhere, but it is not where bodies live.”

Barlow (1996)

On May 1st, 2006 the *Business week* coversheet read “Virtual World, Real Money, a journey into a place in cyberspace where thousands of people have imaginary lives, some even make a good living” (Hof, 2006). At the same time an avatar named *Anshe Chung* became the first millionaire in dollars in Second Life[®] (Graef, 2006), a virtual world linking together millions of players crosswise earth without any geographic constraints (Messinger et al., 2009). That was the beginning of an increasing interest for virtual worlds where people could make money, bank money that can fund a real car, a real house, and even a real living.

Because virtual worlds seem to be a market where people can make real money, several of them like avatar *Anshe Chung* have started to exploit this very new technology in the search of profitable opportunities. Can this been related to entrepreneurship, someone who innovates and can hopefully alter in a positive way the economy (Schumpeter, 1950)? The European commission (Commission of the European Communities, 2003) highlighted that entrepreneurship is important as it contributes to job creation, growth and competitiveness, and it unlocks personal potential. Therefore as entrepreneurship is important, what can be entrepreneurship in virtual worlds?

The present paper proposes to study entrepreneurship of individuals in the Massively Multiplayer Online Role-Playing Games (MMORPG) Second Life[®] and Entropia Universe[®] platforms and to assess if entrepreneurship in those two games exists with the help of Park’s model which links entrepreneurs, knowledge and experience, and technology. Furthermore, for those two MMORPG platforms, the possible key attributes of growth are investigated (Barringer’s model) and the venture creation process evaluated.

The first section of the paper presents a short literature review done on the most recent findings on virtual worlds Second Life[®] and Entropia Universe[®], on entrepreneurship, and on the overlap of both domains. Three questions are formulated:

- 1) Does entrepreneurship exist in MMORPG?
- 2) What are the key attributes of growth in MMORPG?
- 3) What are the steps for the venture creation process in MMORPG?

Those questions will be the central points of the present paper and two surveys presented in the second section were applied to investigate those points. Finally, a discussion of the main results in the third section will assess if entrepreneurship and MMORPG can found a common ground by giving highlights to the three questions with the help of the findings of the literature review.

Massively Multiplayer Online Role-Playing Game: Second Life® and Entropia Universe®

What would be a world like the one described by Barlow (Barlow, 1996): a 3D virtual world where people could interact with objects and others, buy and sell products, and have a community sharing the same values and norms. This world would not be linked to the real world except the servers that contain all the data necessary for maintaining the virtual world vivid. An overview of the precursors of MMORPG and taxonomy of the most recent games are found in “Virtual Worlds – Past, Present, and Future: New Directions in Social Computing” (Messinger et al., 2009). By June 2008 approximately 16M of active subscriptions were counted for the different virtual worlds and the trend is rather exponential (Woodcock, 2009). Further, Gartner® (2007) predicts that 80% of the active Internet users of the developed countries will have an avatar in virtual worlds by end 2011. In that context, a new type of MMORPG emerged in 2003 in the virtual world game market, the so-called *free* Second Life® and Entropia Universe® games.

Second Life® was created in 2000 by Linden Lab® located in San Francisco in the United States of America (Second life®, 2009a), and launched in 2003 for the public (Ondrejka, 2007). The company turnover is rumored to be in the range \$70-\$100 M (New Media Age, 2007) and even if Second Life® seems free, Linden Lab® takes its revenues from the sale of islands and fees for the more advanced game features. The game gives the ability to players to create their own objects, on which they retain rights (Ondrejka, 2007), and to trade them for money with other players. The players can also buy and sell land on which they can construct buildings for home or business purposes. Second Life® has its own unit-of-trade, the Linden Dollar (L\$) which is more or less pegged to the US dollar and can be converted. A majority of the players, 80%, are pure consumers for which only 30% are selling products and services (Market Truths, 2007). It is the players who create and shape the world, and in June 2009 Second life® had 741,945 active players with \$50 M of transactions per month (Second life®, 2009b). More information concerning Second life® is found in “The Virtual Brand Footprint: The Marketing Opportunity in Second life®” (Diversified media design and market truths limited, 2007).

There is not a day without a press article regarding Second Life® and several companies have already invested in the game to have a presence (Messinger et al., 2009). Indeed, firms will need to adapt to new technologies allowing people to interact with virtual games. Why? Because people will soon replicate their buying practices from real world to virtual worlds (Hemp, 2006). Further, virtual games offer the opportunities for companies to increase customer loyalty, gain operational efficiencies and achieve product success and time-to-market (Booz Allen Hamilton, 2007). Not only firms are investing in Second Life®, individuals are also interested to put their footprint on the ground of this game and are using avatars to develop ventures. Bovington, the CEO of Rivers Run Red, a UK based virtual world developer that works with Linden Lab® published that 37,000 individuals are earning between \$100 and \$5,000 per month in Second Life® (Robinson, 2007).

Entropia Universe® was launched in 2003 by Mindark® located in Gothenburg in Sweden (Mindark®, 2009). The company 2008 net profit was of approximately 880 k€ and takes its revenues from the sale of land and from the different fees which are applied in the game. This game is similar to Second Life®, a downloadable program linking several players with a cash economy based on the local currency PED, which is pegged to the US dollar. The main purpose of the game is to develop the avatar by looking better, stronger, and getting richer thus climbing in the hierarchy. It is also possible to buy land and create objects which are pre-defined by

Mindark[®], but there is no ownership for the creator. By end 2006, 575,000 unique registered players were counted and the transactions counted for \$11 M per year (Mindark[®], 2007). For Entropia Universe[®], even if it is less popular in the press than Second Life[®], some individuals have bought lands for more than a penny to create a new venture in that virtual world: an Australian player has paid \$26,500 for an island in 2004 (The Economist, 2005), and an American film-maker spent \$100,000 in 2006 to buy an asteroid which mimics a spaceship (Gapper, 2006).

Both Second Life[®] and Entropia Universe[®] can be considered successful virtual games in view of the observations made by Mayer-Schönberger and Crowley (2006) who concluded from the review of virtual games that four criteria are necessary for success: *persistence* (players can return to a shared virtual space after a time of offline), *teleology* (players can pursue and complete concrete tasks), *malleability* (players have the ability to modify the world), and *verisimilitude* (players are in an immersive experience sufficiently resembling the reality). Song and Lee (2007) found similar criteria by examining what the players are valuing. In terms of business model, MacInnes and Hu (2007) identified four successive stages in the development of new Internet technologies: first the *technical* stage (stability of the game, fewer bugs, experienced developers), second the *environmental* stage (control, low piracy, ownership for creators), third the *revenue* stage (marketing differentiation), and fourth the *sustaining* stage (all the factors already mentioned). Second Life[®] and Entropia Universe[®] are currently in the fourth stage: the games are relatively stable with fewer bugs and several updates per year are made to increase stability and improve the game, the ownership and control problem are resolved, and both games are differentiated from the others with specific values for the customers and they are now seeking for new markets.

Concerning MMORPG players some studies have examined the motivation of players for such games. For a sample of approximately 3,000 individuals playing the most popular MMORPG World of Warcraft, Yee (2007) found three categories with ten motivations: *achievement* (gaining power, understanding how, competing against the others), *social* (interest in helping and chatting, long-term relationship, being part of a group) and *immersion* (knowing more than the others, creating an avatar and a story, customizing its avatar appearance, avoiding thinking about real life problems). Beak et al. (2004) and Beak (2005) have examined for a sample of 179 players their preferences on four attributes: the interaction of the human and the computer, the interaction between the humans, the degree of freedom in the game and the mobility. They found that the human-human interaction counted for approximately 50%, followed by the human-computer interaction for 22%. Those findings supports that a high proportion of players are looking for social interactions in MMORPG and it confirms the social category found by Yee. Whang (2003) observed also that the players are considering virtual worlds as a part of their daily life.

Entrepreneurship and Massively Multiplayer Online Role-Playing Game

Entrepreneurship is a broad subject which has been studied for more than 200 years with the first evidence of the word *entrepreneurship* in writings of Richard Cantillon in 1755 (Bull & Willard, 1993). This definition was refined by Bygrave and Hofer (1991) arguing that not only an entrepreneur innovates, but also exploits opportunities that were not seen by others. As a consequence, the opportunity recognition theory has subsequently emerged as a new field largely studied, and Shane and Verkatarama (2000) grouped the concerns of the scholars in the entrepreneurship field in three sets of research:

- Why, when, and how opportunities for the creation of goods and services appear,
- Why, when, and how some people and not others discover and exploit these opportunities,
- Why, when, and how different modes of action are used to exploit entrepreneurial opportunities.

In the present paper, the opportunity recognition definition was adopted as the definition of entrepreneurship. The terms “opportunity recognition” and “innovation” refer to the same, and the first and third set of research were examined, targeting specifically individuals and not firms entering the virtual worlds. Drucker (1993) categorized opportunity recognitions in three categories: the creation of new information with the invention of new technologies; the exploitation of market inefficiencies gaps; and the cost reduction or better use of the resources due to political, regulatory, or demographic changes. However, scholars covered only two themes, the search of market gaps by understanding the markets and the customers, and the need for products to evolve with the market (Sarason et al., 2006).

Even though, Park (2005) specifically focused his search in new technologies by choosing high-technology start-up firms, and has done a review of the contemporary literature on opportunity recognition, thus entrepreneurship. Even if the opportunity recognition literature has gaps in the theory, Park proposes a conceptual model of the recognition process in high-technology firms which is derived from the discovery that knowledge and experience are pivots for the success, Figure 1. In fact, these observations are linking the traits of the entrepreneur, the technology used, and the knowledge of the market/technology and experience, and are contributing together to the opportunity recognition. But it is not clear if knowledge (Silva, 2007) and experience (Bull & Willard, 1995) may help or not to recognize innovations. Nevertheless, this model was used in the present paper to study if entrepreneurship occurs in Second Life[®] and Entropia Universe[®].

Major sources of information were found for the study of entrepreneurship in virtual worlds: an article from Papagiannidis et al. (2007) on “Making Real Money in Virtual World: MMORPGs and Emerging Business Opportunities, Challenges and Ethical Implications in Metaverses,” an article from Ondrejka (2007) on “Collapsing Geography: Second Life[®], Innovation and the Future of National Power,” an article from Bloomfield (2007) on “Worlds for Study: Invitation - Virtual Worlds for Studying Real-World Business (and Law, and Politics, and Sociology, and....),” an article from Castronova (2002) on “Virtual Economies,” and a book from Castronova (2005) on *Synthetic Worlds: The Business and Culture of Online Games*.

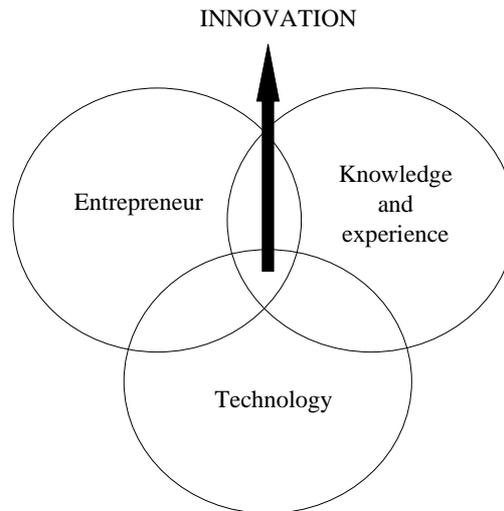


Figure 1 The conceptual model of the opportunity recognition process for new technologies: the contributions and interactions (Park, 2005).

For virtual worlds like Second Life[®], Papagiannidis et al. article stresses the business opportunities and challenges. The authors focus on the transactional aspects of the game and explain that doing transactions in a virtual world extend the range and scale of economic activities: there were the real transactions (currency exchange in real life), the electronic transactions (Internet transactions like PayPal[®]), and now the metaverse transactions (transactions in a virtual world). Another subject of the article concerns the virtual entrepreneurs and the authors conclude that the virtual worlds may create lucrative opportunities for individuals.

Ondrejka's article underlines how Second Life[®] bypasses the traditional geographic constraints and helps innovation. The author brings four positive effects of Second Life[®] on those aspects: as a platform it allows distant people to leverage real-world metaphors and habits to improve collaboration, it lowers the costs of learning which is critical for innovation, it changes innovation everywhere in the world, and it changes the alignment of labor markets and the structure of firms. The author concludes that where innovation exists, entrepreneurship will flourish. Moreover since the platform have game features, the entrepreneurs describe their activities no more as work but as fun.

Bloomfield's article stresses that virtual worlds like Second Life[®] or World of Warcraft[®] may be interesting platforms for the research of businesses and entrepreneurship because those worlds have real economies, support business reporting, enhance interaction and innovation, and provide a universal platform.

Castronova's article underlines that if virtual worlds do become a large part of the daily life of people then the development of those worlds will have an impact on the macroeconomics of real life Earth. This is only possible if the GDP of those virtual worlds grows as the businesses inside those worlds become profitable. Thus, the performance of the virtual businesses is of importance.

Castronova's book, which is to be considered as a reference for those who want to understand broad aspects of business and culture in MMORPG, suggests that seven dimensions should be present in a MMORPG where entrepreneurship can flourish:

- 1) an active economy achieved with gains from trade and presence of consumable goods,
- 2) a publicized and well located economic activity via easy transportations, distributed resources over the virtual world and open communication,
- 3) the generation of earnings and investments with production functions,
- 4) the generation of value with the presence of seller and buyers,
- 5) the control of the per capita capital stock and value of the currency,
- 6) a social mobility based on risks and progressive taxations,
- 7) the recovery from breakdowns.

Second Life[®] and Entropia Universe[®] offer those dimensions and the reward of virtual worlds for players can be summarized to the unique equation which is also effective in our real world: "Total Compensation = Wage + Fun."

Both, Second Life[®] and Entropia Universe[®] proposes monetary trades with specific currencies pegged to the US dollar (Papagiannidis et al., 2007) and the players can buy and sell objects, services, lands, and also have social interaction. Currently, Second Life[®] and Entropia Universe[®] have overcome technical, environmental, and revenue problems illustrated by MacInnes and Hu (2007), have the ground of an economy as highlighted by Bloomfield (2007) and Castronova (2002 and 2005) and can be considered as stable platforms where individuals can create a venture. Moreover, Papagiannidis et al. (2007) and Ondrejka (2007) clearly concluded that opportunities seem to exist in those two worlds. Adopting opportunity recognition (Shane & Verkatarama, 2000) as the definition of entrepreneurship in the present paper in accordance with the conceptual model of opportunity recognition process (Park, 2005), the first question concerns entrepreneurship in Second Life[®] and Entropia Universe[®]:

Question: Does entrepreneurship exist in MMORPG?

The performance of ventures can be measure by very different factors, and actions undertaken by the entrepreneurs to improve performance on one dimension may depress performance on other dimensions. Murphy et al. (1996) looked for several dimensions of performance in the entrepreneurial literature and found that the most commonly used dimensions are efficiency, growth, profit and size of the liquidity. All those dimensions are related to financial criteria, for example returns on investment for efficiency.

Barringer et al. (2005) conducted a literature review by examining 106 publications addressing firm performances. By comparing 50 rapid-growing firms to 50 slow-growth firms the authors could find the most predominant key attributes of growth grouped in four categories: the entrepreneur's characteristics, the organization attributes, the business practices, and the human resource management (HRM) practices, Figure 2. Other dimensions of performance were found in the literature for example the success rate or failure rate and several factors may explain those rates in different markets. In fact it is necessary to follow several of the dimensions in order to evaluate correctly the performance of the firms.

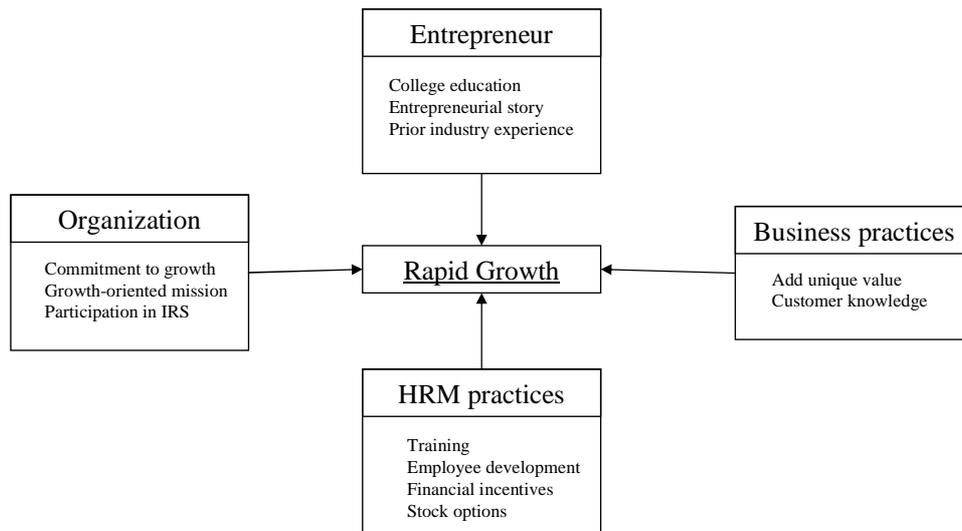


Figure 2 Key attributes that differentiate rapid-growth firms from slow-growth firms (Barringer et al., 2005).

Bloomfield (2007) and Castronova (2002 and 2005) underlined that virtual worlds have an economy. Where an economy exists there are businesses, and when the businesses are performing well the GDPs where those businesses exist will increase and be competitive compared to other GDPs. The second question is related to the performances of those businesses which already exist in Second Life[®] and Entropia Universe[®]: the key attributes that can contribute to growth as summarized by the work of Barringer et al. (2005). Thus, a second question is formulated:

Question: What are the key attributes of growth in MMORPG?

The formation of new ventures would seem straightforward and might certainly follow a unique linear sequence. It is not the case as Davidsson (2005) pointed out by reviewing the literature: on one hand, Vesper (1998) and Delmar and Shane (2003) suggest a specific sequence for establishing a new venture, and on the other hand Carter et al. (1996) and Gruber (2007) suggest a completely different sequence. The venture creation seems not very clear in view of that literature. However, Davidsson (2005) concluded that the sequence is not so relevant as soon as the following steps are present: the formation and screening of the ideas, the protection of the ideas, the planning and business plan, the legal form of the firm, the search for the facilities and the financing and starting of the operations.

Terdiman's book *The Entrepreneur's Guide to Second Life[®]: Making Money in the Metaverse* gives all the necessary tools for creating a new venture in Second Life[®] in different fields: fashion stores, land businesses, nightclubs, newspapers, and other activities. Unexpectedly, for each field the author explains that starting a venture in Second Life[®] does not need large amount of funds and the business plan can be summarized in three steps: creation of products and services, finding the best location in the game and selling.

Terdiman clearly shows that the creation of venture in virtual worlds is relatively simple. There seems to be relatively few steps, even if the sequence of the steps for a new venture seems not clear in view of the literature (Davidsson, 2005). The third question proposes to define the venture creation process for businesses in the virtual world.

Question: What are the steps for the venture creation process in MMORPG?

Methodology and surveys

Different techniques can be used to study entrepreneurship. The main technique consists to submit a survey to entrepreneurs, and the results are then analyzed in the search of averages, deviations, and other well-known statistical results (Gardner & Birley, 2002). This technique is a quantitative analysis, and it has proven to be effective, thus institutionalized and accepted as a standard in the academic research of entrepreneurship. However, the data are self-reported and these may not be reliable. Nevertheless, the present paper has adopted this technique for the study of entrepreneurship in Second Life[®] and Entropia Universe[®].

A first survey was available online on the web on 03/01/07 for a period of two months to players of Second Life[®] and Entropia Universe[®]. The survey is presented in Appendix A with the text of calls for participation, and it was promoted via the forums of both MMORPG and an advertisement campaign was also made for the Entropia Universe[®] community in the game. They were no mandatory questions, the participants could eventually submit void responses which were also counted, and they had to go to the end of the survey (*save* button) in order for the responses to be taken into consideration. This first survey was conducted in order to find potential entrepreneurs and to confirm the traits of the players compared to statistics given by Linden Lab[®] and by Noble and Ortiz (2007), Table 1. 141 players of Second Life[®] (SL population) and 103 players of Entropia Universe[®] (EU population) have filled the survey, and ten players have indicated that they were playing both games. All the filled questionnaires were taken into account and the sum of Second Life[®] and Entropia Universe[®] players gives a total population for the first survey of 244 individuals without any restrictions.

A central question “Do you consider yourself as an entrepreneur in Second Life[®] or Entropia Universe[®]?” without any definition of the word *entrepreneur* was in the first survey and when answered “yes” used to contact potential individuals for a second survey presented in Appendix B with the text of calls for participation. They were no mandatory questions, the participants could eventually submit void responses which were also counted, and they had to go to the end of the survey (*save* button) in order for the responses to be taken into consideration. This second survey was distinctively elaborated for entrepreneurs and submitted online on the web on 06/01/07 for a period of two months. Based on the approach of Gartner (1985) entrepreneurship is a process that can be studied through the interaction of four factors: the individual, the organization, the environment and the process of venture creation. Therefore, the second survey was articulated in eight sections: real life information, gaming experience, entrepreneurs businesses, Second Life[®] and Entropia Universe[®] platforms, marketing, finance, business protections and strategy.

From all the potential entrepreneurs which were contacted to fill the second survey only 21 have replied to an email invitation and participated to the second survey. From the analysis of the results, two filled questionnaires were not taken into consideration due to poor overall value. From the nineteen entrepreneurs left (**Entrepreneurs** population), four are using the platform of Entropia Universe[®] and fifteen the platform of Second Life[®] for their ventures, Table 2 (the names of the ventures are not disclosed for privacy and confidentiality purposes). The nineteen entrepreneurs have developed ventures in different markets.

Table 1 Traits of the individuals having participated to the first and second survey

	<i>SL</i>	<i>SL stats Second Life[®]</i>	<i>SL survey stats Noble and Ortiz</i>	<i>EU</i>	Entrepreneurs
Gender					
Male	54.6%	57.9%	60.3%	89.3%	68.4%
Female	42.6%	42.1%	39.7%	5.8%	31.6%
Empty responses	2.8%	-	-	4.9%	0.0%
Age group					
18 under	0.0%	0.9%	1.1%	13.6%	0.0%
19-25	0.9%	26.7%	17.5%	28.2%	21.1%
26-35	21.3%	37.5%	30.7%	35.0%	31.6%
36-45	40.4%	21.9%	28.3%	13.6%	31.6%
45-55	20.6%	12.4%	16.7%	2.9%	15.8%
56-65	3.6%	0.0%	5.3%	0.0%	0.0%
65 or older	0.0%	0.0%	0.3%	1.0%	0.0%
Empty responses	4.3%	0.5%	0.0%	5.8%	0.0%
Marital status					
Single	39.0%	-	-	68.0%	47.4%
Married	43.3%	-	-	23.3%	42.1%
Divorced	14.2%	-	-	1.9%	0.0%
Empty responses	3.6%	-	-	6.8%	10.5%
Region					
North America	65.2%	29.7%	43.4%	16.5%	63.2%
South America	0.7%	10.5%	0.0%	0.0%	0.0%
Asia	0.0%	0.9%	0.0%	4.9%	0.0%
Europe	27.0%	39.3%	40.7%	69.0%	26.3%
Africa	0.0%	-	-	0.0%	0.0%
Oceania	2.8%	10.6%	3.7%	3.9%	10.5%
Middle East	0.7%	-	-	1.0%	0.0%
Other	3.6%	9.0%	12.1%	4.9%	0.0%
Educational level					
School (up to 11 years)	0.0%	-	19.9%	0.0%	5.3%
School (up to 16 years)	1.4%	-	-	9.7%	5.3%
College (17-19 years)	32.6%	-	48.6%	37.9%	15.8%
Undergraduate	29.1%	-	-	17.5%	42.1%
Postgraduate	32.6%	-	31.5%	30.1%	26.3%
No formal education	1.4%	-	-	0.0%	0.0%
Empty responses	2.8%	-	-	4.9%	5.3%

Column **SL**: statistics for SL players from first survey; column **SL stats**: statistics given by Linden Lab[®] (Second Life[®], 2007); column **SL survey stats**: statistics given by Noble and Ortiz (2007); Column **EU**: statistics for EU players from first survey; Column **Entrepreneurs**: statistics for entrepreneurs from second survey.

Table 1 (continued)

	<i>SL</i>	<i>SL stats</i>	<i>SL survey stats</i>	<i>EU</i>	Entrepreneurs
Type of employee					
Full Time	58.2%	-	-	52.4%	94.7%
Part Time	12.8%	-	-	14.6%	0.0%
Contractor	14.2%	-	-	6.8%	0.0%
Temporary	4.3%	-	-	12.6%	0.0%
Empty responses	10.6%	-	-	13.6%	5.3%
Salary range					
Less than \$30,000	20.6%	-	31.3%	39.8%	36.9%
\$30,000 to \$39,999	9.2%	-	27.8%	13.6%	5.3%
\$40,000 to \$49,999	14.9%	-	-	11.7%	15.8%
\$50,000 to \$59,999	7.8%	-	-	8.7%	0.0%
\$60,000 to \$74,999	6.4%	-	14.9%	4.9%	5.3%
\$75,000 to \$99,999	10.6%	-	8.7%	3.9%	5.3%
\$100,000 or more	14.2%	-	13.2%	4.9%	21.1%
Empty responses	16.3%	-	0%	12.6%	10.5%
Which of those MMORPG do you play mostly					
<i>EverQuest</i>	2.1%	-	-	1.0%	15.8%
<i>World of Warcraft</i>	6.4%	-	-	6.8%	10.5%
<i>Eve Online</i>	2.1%	-	-	4.9%	5.3%
<i>Second Life</i>	100.0%	-	-	9.7%	84.2%
<i>Entropia Universe</i>	7.1%	-	-	100.0%	31.6%
Other	6.4%	-	-	8.7%	10.5%
Proportion of playing time you devote to MMORPG					
10.0%	1.4%	-	-	2.9%	0.0%
20.0%	6.4%	-	-	4.9%	5.3%
30.0%	2.8%	-	-	2.9%	5.3%
40.0%	4.3%	-	-	5.8%	5.3%
50.0%	7.8%	-	-	5.8%	10.5%
60.0%	6.4%	-	-	6.8%	5.3%
70.0%	9.2%	-	-	10.7%	0.0%
80.0%	19.2%	-	-	20.4%	15.8%
90.0%	27.0%	-	-	33.0%	47.4%
100.0%	14.2%	-	-	6.8%	5.3%
Empty responses	1.4%	-	-	0.0%	0.0%
How often do you play per week					
Less than 1 hour	0.7%	-	-	1.0%	0.0%
1 to 5 hours	2.8%	-	-	5.8%	0.0%
6 to 10 hours	10.6%	-	-	22.3%	5.3%
11 to 20 hours	28.4%	-	-	21.4%	26.3%
21 to 40 hours	39.7%	-	-	34.9%	36.8%
41 to 60 hours	9.9%	-	-	8.7%	21.1%
Over 60 hours	6.4%	-	-	5.8%	10.5%
Empty responses	1.4%	-	-	0.0%	0.0%

Table 2 Characteristics of the ventures started by the nineteen entrepreneurs.

Id.	Platform	Purpose of the venture	Market	Date of start
1	<i>EU</i>	Clothing Store	New	01/09/2003
2	<i>EU</i>	Leisure	New	12/12/2004
3	<i>EU</i>	Land management	New	19/12/2005
4	<i>EU</i>	Land management	Existed	-
5	<i>SL</i>	Land management	New	01/04/2005
6	<i>SL</i>	Newspaper	New	09/08/2005
7	<i>SL</i>	Renting management	New	01/10/2005
8	<i>SL</i>	Land management	Existed	11/11/2005
9	<i>SL</i>	Clothing Store	Existed	01/06/2006
10	<i>SL</i>	Banking	Existed	01/10/2006
11	<i>SL</i>	Banking	Existed	01/10/2006
12	<i>SL</i>	Jewelers Store	New	01/01/2007
13	<i>SL</i>	Clothing Store	Existed	11/01/2007
14	<i>SL</i>	Clothing Store	Existed	12/01/2007
15	<i>SL</i>	Banking, Stock Exchange	New	02/02/2007
16	<i>SL</i>	Adult entertainment	Existed	01/03/2007
17	<i>SL</i>	Accounting services	New	01/05/2007
18	<i>SL</i>	Land management	Existed	01/07/2007
19	<i>SL</i>	Project Management	New	-

Id. is the venture identification that will be used in other tables.

Results and Discussion

Traits of the players and entrepreneurs

Table 1 shows the characteristics of the players from Second Life[®] and Entropia Universe[®] having participated to the first survey and the characteristics of the entrepreneurs having participated to the second survey. Those results are compared to the official statistics of Linden Lab[®], column SL stats, statistics which are compiled from the players who have registered their personal attributes, and to statistics of a survey which was conducted by Noble and Ortiz (2007), column SL survey stats, who had a large sample of 657 players from Second Life[®].

Gender

Online games, and especially RPG games, are known to be played mainly by male (Griffiths et al., 2004), and that is seen for the column EU (89.3%). However, for the column SL, women are more present in the game. This result is confirmed by the columns SL stats and SL survey stats. This major difference can be explained by the nature of the game: Second Life[®] is a game which gives the opportunity to individuals to create and sell product, which is completely different from Entropia Universe[®] where the major occupation of the players is to kill dangerous creatures in order to loot prizes, even if the possibility to create and sell products is also available. For the entrepreneurs, about one third is represented by women, column Entrepreneurs.

Age group

The populations of columns SL stats, SL survey stats and Entrepreneurs are comparable and indicate that the players are in the age group 19 to 45 years old with a maximum of players having between 26 and 35 years old. Those results differ from the column SL of the present paper for which the population is older. An explanation for this difference can be proposed: the search for players was done via the forum of Second Life[®] which is maybe less visited by younger players who prefer to play rather than post text in forums. For the column EU, the players are younger than in Second Life[®], and this is certainly again due to the primary occupation of Entropia Universe[®] players: killing the creatures.

Marital status

Entropia Universe[®] players are single as a majority. Because the Second Life[®] players are older, there is also a greater part of married individuals. For the entrepreneurs, the sample is homogeneous.

Region

As for the age groups, a difference is seen between the column SL and the columns SL stats and SL survey stats. Again, because the search was done via the forum of Second Life[®] which is an American forum, the chance to catch more players from the US is higher. This is also reflected in the column Entrepreneurs, where a majority of the entrepreneurs are from the US. Therefore any conclusions about the provenance of the entrepreneurs should be taken with great care. For the column EU, a majority of European citizens have responded to the first survey, because this game was first marketed in Europe (Mindark, 2007). Both games are not very popular in Asia, because they have only recently entered the Chinese market (Mindark, 2007).

Educational level

The educational level indicates that the EU and SL populations are very similar, although there are a higher proportion of individuals still in school for column EU. For the entrepreneurs, they have also different backgrounds.

Type of Employee

As for the educational levels, the type of employee is very similar between columns SL and EU, with the same distinction for the younger population in column EU. For the entrepreneurs, it is interesting to see that they are mainly full time employees (94.7%). Some of the entrepreneurs are full-time employees in real-life companies and spend time in Second Life[®] and Entropia Universe[®] for their own virtual business during their leisure time, and other entrepreneurs are completely devoted to their virtual business and have no real-life jobs.

Salary range

The salary range are not very different from what can be expected from the populations (column EU has 39.8% individuals with less then \$30,000 because the population is younger), although the entrepreneurs are at both extremes: 36.9% are earning less than \$30,000 and 21.1% more than \$100,000. No reason was found that could explain that observation.

Only MMORPG?

Both the Second Life[®] and Entropia Universe[®] players are playing other MMORPG games, and for more than half they play non-MMORPG games, like arcade, simulation, adventure games. The entrepreneurs show the same pattern.

Time spent for MMORPG

The proportion of time devoted to MMORPG and the overall playing time is important: a majority of players are devoting between 21 and 40 hours to computer games, and are spending more than 80 % for those games. Entrepreneurs are even giving more of their time to MMORPG: 50% of the entrepreneurs are devoting at least 90% of their computer playing time (it may take into account the time spent to write emails to customers, to create the advertisements, to update a website, and other activities related to a business).

Does entrepreneurship exist in MMORPG?

A new venture begins with opportunity recognition (Shane & Verkatarama, 2000) and three sources of opportunity can be exploited as described by Drucker (1993). The present paper will mainly focus on the creation of ventures with the invention of new technologies like Second Life[®] and Entropia Universe[®] MMORPG platforms and assess if entrepreneurship in those two games exists with the help of Park's model which links the entrepreneurs, their knowledge and experience and the technology.

The entrepreneurs

The entrepreneurs are the starting point of entrepreneurship and it would be rather difficult to start a new venture without someone initiating it.

The Second Life[®] and Entropia Universe[®] players were asked if they consider themselves as entrepreneurs, Table 3. For Second Life[®] the proportion of players considering themselves as entrepreneurs or not is approximately the same, in the range 40-45%. For Entropia Universe[®] only 16.5% are considering themselves as entrepreneurs and the difference with the Second Life[®] population can be explained by the lower possibilities offered in Entropia Universe[®] for entrepreneurship: only predefined objects can be manufactured, limited land ownership and absence of enhanced features (programming language proposed).

The profile of the entrepreneurs is not really different from the profile of the players not having started a venture: the distribution of responses of the entrepreneurs is comparable in terms of age, educational level, salary range, involvement and time spent in the game to the distribution of responses of either the players of Second Life[®] or Entropia Universe[®]. Further on those traits the five columns (SL, SL stats, SL survey stats, EU and Entrepreneurs) give mainly the same results. Overall it means that entrepreneurs in Second Life[®] and Entropia Universe[®] are before launching a venture, players of those games.

Table 3 Do the players of Second Life[®] and Entropia Universe[®] consider themselves as entrepreneurs?

	<i>SL</i>	<i>EU</i>
Yes	44.6%	16.5%
No	42.5%	64.0%
Do not know	12.0%	19.4%
Empty responses	0.7%	0.0%

The results were obtained from the first survey for the **SL** and **EU** populations.

But, two major differences are seen for the population of the entrepreneurs: 94.7% are full time and 47.4% devote 90% of their playing time to the game. Two hypotheses can be formulated: the entrepreneurs have a full time job and at the same time have launched a venture in the game, or they are full time in the game for the venture. In both situations the entrepreneurs are spending a lot of time for their ventures. Young (1996) observed that addict players can play around 28 hours for games, and both the player and the entrepreneur are addict, one to the game and the other to his venture.

The population of Entropia Universe[®] players is mainly composed of men, thus the proportion of entrepreneurs being a man for that game is high. For Second Life[®] the population is more homogeneous, 48.6% are men, and 47.6% are women. That is reflected in the population of the Second Life[®] entrepreneurs, nine are men and six are women. Again, those results show that the population of the entrepreneurs represents the population of the players. Nevertheless, that population does not necessarily represent the real life population of entrepreneurs starting a new venture as observed by Brandstätter (1997) who found that a greater proportion of men start businesses in real life. Does it mean that in Second Life[®] women can more easily start ventures, the question is open?

One of the main reasons for the entrepreneurs to be involved in MMORPG is that 84.2% of them are having *fun*, Table 4.

Table 4 Players reasons to play Second Life[®] and Entropia Universe[®]

	<i>SL</i>	<i>EU</i>	Entrepreneurs
for fun	88.6%	95.1%	84.2%
for curiosity	34.7%	22.3%	52.6%
for creativity	67.3%	22.3%	73.6%
to meet people	59.5%	47.5%	68.4%
to make money	36.1%	33.9%	84.2%
other	7.8%	6.8%	10.5%

Results obtained from the first survey for the **SL** and **EU** populations, and from the second survey for the **Entrepreneurs** population.

The same is true for the pure players, 88.6% and 95.1% for Second Life[®] and Entropia Universe[®] respectively. That is a fundamental trait of the entrepreneurs and the players, which indicate that people involved in MMORPG are fulfilling their needs and they will not leave easily the games. It confirms Castronova's Total Compensation equation for players and the observations made by Ondrejka on the fun aspect.

A good reason to be in the game for the entrepreneurs is to *make money* (84.2%). That contrasts with the players' population which is for both games in the range 32-37%. It shows that the entrepreneurs know why they are using the platform, and they can be seen no more as individuals playing a game but as individuals having created a venture and trying to gain money from it. The entrepreneurs were asked if they would sell for a lump sum the business they have created. Only 35% would sell the business meaning that the entrepreneurs are emotionally involved to their businesses. However, this number can change with time as several entrepreneurs highlighted during the interview that when the fun part of the venture will disappear they will sell it.

The technology

Second Life[®] and Entropia Universe[®] exhibit all the necessary factors of a virtual games proposed by Mayer-Schönberger and Crowley (2006): persistence, teleology, malleability, and verisimilitude. Both games are now in the sustaining stage looking for further growth in new markets. The new metaverse transactions system (Papagiannidis et al., 2007) available in those games enhances the teleology and verisimilitude factors, which plays a fundamental role for the achievement of the players and the entrepreneurs in their social virtual life and the immersion factor is even more fulfilled. The social aspects of the game are important for 59.5% of the Second Life[®] players, for 47.5% of the Entropia Universe[®] players, and for 68.4% of the entrepreneurs, Table 4. It confirms the observations made by Beak (2005), Beak et al. (2004), and Whang (2005) on social interactions. By chance the Second Life[®] and Entropia Universe[®] platforms provide certain tools needed for that socialization: chat systems, group formation, places where people can meet and other features.

Before launching their ventures, the different entrepreneurs had a previous knowledge of the platform, as players do. The entrepreneurs and the players know exactly how the platform is working and what are the advantages and disadvantages of it. Thus, the past experience factors, which was studied by Bull and Willard (1995) without a clear conclusion if it has an impact or not, seems relevant in terms of knowing the platform but less in terms of experience in venturing.

Different distribution channels for their products and services are offered to the entrepreneurs in both games, but the main channel are stores located in the game, Table 5.

Table 5 The distribution channels and the use of an outside secondary channel.

Id.	Distribution	Website
1	Store	Yes
2	-	Yes
3	Website	Yes
4	-	No
5	-	Yes
6	Vendors	Yes
7	Store, Website	Yes
8	-	Yes
9	Store	No
10	Store, Website	Yes
11	Store, Website	Yes
12	Store	No
13	Store	No
14	Store	No
15	Store, Website	Yes
16	Direct	Other
17	Store, Website	Yes
18	-	No
19	-	Other

Id. is the venture identification.

The platforms have the advantages of the Internet shops like Amazon[®] or eBay[®]: the customers can have an easy access to the products and services and it is open 24h/7d. Another way to promote and to sell product is to use concomitantly a secondary channel like a website: 58% of the entrepreneurs are using that channel. Thus, some of them have a competitive advantage compared to their main competitors having not a website. By comparing the purpose of the business and the distribution channels, it seems that businesses not dealing with land, rental management and bank services are not using a website. Indeed, the use of the website as a secondary channel seems needed where the product or service is an offer like banking services or renting management needing information to be stored on an external server and retrieved back to customers. On the opposite clothes, jewels and shoes are bought only once.

The knowledge and experience

A majority of the entrepreneurs have started a business in Second Life[®] essentially because the product or service did not exist or they needed it for their own purpose, Table 6. This observation may explain the 84.2% of entrepreneurs who did a research in the games of existing products or services. For the entrepreneurs of Entropia Universe[®] a majority of the opportunities are the results of new features added overtime to the platform by Mindark[®] for which the potential entrepreneurs have gained access by purchasing it.

Table 6 Research and valuation of opportunities

	Yes	No	Other
Research about consumers	52.6%	36.8%	10.5%
Research in data/published reports	26.3%	63.2%	10.5%
Research about existing products/services	84.2%	10.5%	5.3%
Risk failure analysis	26.3%	63.2%	10.5%

Results obtained from the second survey for the **Entrepreneurs** population.

Fortunately, 52.6% of the entrepreneurs have also done a research on customer needs. However, less than one third of the entrepreneurs did a risk analysis of their future venture or looked for other sources of information in order to access the potential of the venture.

The strategic questions an entrepreneur should ask himself or herself before launching a business are grouped in Table 7.

Table 7 Fundamental questions that should be asked before launching a venture

	Yes	No	Other
Are my goals well defined?	79.0%	5.3%	15.8%
Is my strategy well defined?	78.9%	10.5%	10.5%
Is there a market for my product?	94.7%	5.3%	0.0%
Do I have the necessary resources?	94.7%	0.0%	5.3%

Results obtained from the second survey for the **Entrepreneurs** population.

More than 75% of the entrepreneurs have clearly defined the goal, the strategy, and 95% the market and the necessary resources for their new ventures. Those who responded 'no' or 'other' did it for the 5 questions. However, they did not use all the tools known in the marketing field, Table 8.

Table 8 The marketing tools used by the entrepreneurs to analyze the different market

	Familiar with			Used	
	Yes	No	Heard about	Yes	No
Strategic Choice Approach	10.5%	63.2%	26.3%	10.5%	89.5%
Soft Systems Methodology	15.8%	73.7%	10.5%	0.0%	100.0%
SWOT Analysis	31.6%	52.6%	15.8%	26.3%	73.7%
PEST Analysis	21.1%	68.4%	10.5%	10.5%	89.5%
Porter's Generic Strategies	10.5%	73.7%	15.8%	5.3%	94.7%
Porter's Five Forces Model	15.8%	68.4%	15.8%	10.5%	89.5%
Scenario Planning	21.1%	52.6%	26.3%	15.8%	84.2%

The various analysis methods are explained by Gondal (2004); results obtained from the second survey for the **Entrepreneurs** population.

The 94.7% of the entrepreneurs have looked if there was a market (Table 7, third question), but only 26.3% have used the SWOT analysis (strength, weaknesses, opportunities, and threat), 15.8% the scenario planning, 10.5% the Porter's five forces model, 10.5% the

strategic choice approach and 10.5% the PEST analysis (political, environmental, societal, and technological). It seems that the entrepreneurs are not well aware of the various marketing tools and techniques, but it did not prevent them to launch their ventures. Concerning competition, the entrepreneurs were very concerned to know if the product or service already exists before the launch of the venture, but less interested after!

From the analysis of the entrepreneurs, their knowledge and experience and the technology, the model of Park is adapted to MMORPG entrepreneurship, Figure 3. All the circles are filled, and the overlaps have also strong arguments that help to initiate innovation. In view of that adapted model it appears that opportunity recognition and therefore entrepreneurship exists in MMORPG since all the conditions are present: an entrepreneur willing to invest money in order to increase his wealth, a new technology giving new sources of revenues, and a market which is growing and well understood by the entrepreneurs. New ventures are created in the virtual worlds, and the entrepreneurs have a vision for the venture.

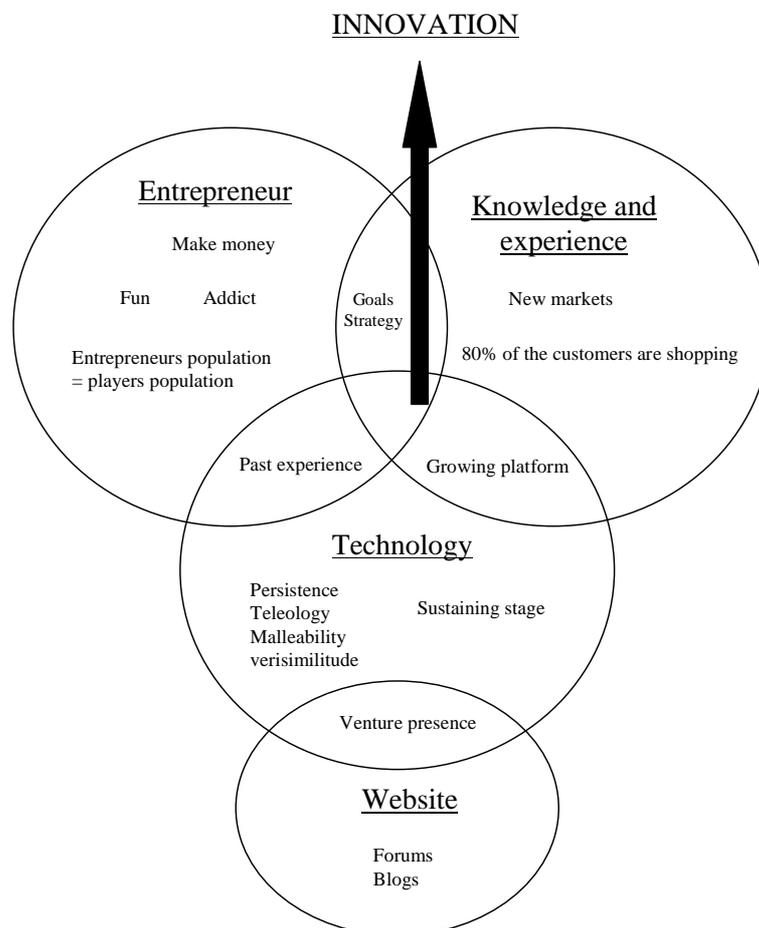


Figure 3 Entrepreneurship in MMORPG illustrated with Park's model.

What are the key attributes of growth in MMORPG?

Having said that entrepreneurship exists in MMORPG, it is now interesting to evaluate if the ventures that were created are performing well according to different dimensions of performance (Murphy et al., 1996). It is impossible to establish for the ventures that were studied in the present paper a failure rate and to compare it to the results observed by other studies of real-world ventures. The main reason is that bankrupted ventures did not participate to the survey, even after being contacted. Also, both games are rather new and there is a probability that only very few ventures were created so far.

Nevertheless from the nineteen ventures, seven were created in 2007, three in 2006, five in 2005, one in 2004, one in 2003, and two entrepreneurs did not give the information. The distribution seems to follow the known failure rate curve (Abrams, 2004) with very few ventures still in existence after three years. However it is not possible to give a finite conclusion on that observation and only a further study of the nineteen ventures after 2-3 years could really highlight that point.

Table 9 shows the growth of the different ventures expressed as the return of the initial investment over the period of existence.

Table 9 Return of the initial investment over the period of existence

	Number of Ventures
losses	1
<x2	-
x2-x5	3
x6-x15	1
x15-x50	3
>x50	4
not answered	7

(x2 means multiplied by 2); results obtained from the second survey for the **Entrepreneurs** population.

Surprisingly seven ventures have multiplied by 15 times and more the initial investment and eleven ventures have doubled it. Compared to real life firms for which the payback is usually achieved in 2 to 5 years for the best firms, virtual life ventures are doing better. Two reasons can be proposed for that: the low initial investment enables the entrepreneurs to have a quick payback, and because it is mainly their own funds which are invested during the launch of their ventures (68%), they might be more concerned about not losing it, Table 10.

The environment is of importance as illustrated by Shane (1996) and in both games are very turbulent (VAT taxation, anti-gambling, and age verification introduced lately in Second Life[®], new bank system and land sales in Entropia Universe[®]), even though the ventures are doing well. That means that those ventures have the ability to adapt very quickly to the modifications brought to the game by Mindark[®] and Linden Lab[®]. That is in accordance with the findings of Lin (2006) who observed that in a high environmental uncertainty, new ventures tend to go for rapid behaviors with drastic changes.

Table 10 The funding of the businesses at the start and after the launch

	At the start	After launching
Bank loans	0.0%	3.8%
Government help	0.0%	0.0%
Friends	0.0%	0.0%
Family	4.5%	0.0%
Own money	68.2%	53.8%
Business angels	0.0%	0.0%
Venture capital	9.1%	15.4%
Other	18.2%	26.9%

Results obtained from the second survey for the **Entrepreneurs** population.

The time spent by the entrepreneurs for the venture, between 21 and 40 hours per week, has certainly an impact on the performances, nevertheless the way they are conducting their businesses as fun ventures is even more central. That was a main conclusion of Schmitt-Rodermund (2004) who discovered that the success of ventures depends by 26% on the satisfaction of the entrepreneurs.

Different solutions are taken to start and sustain the growth of businesses; it can be achieved by entering first the market, protecting know-how, brand name and other characteristics which are fundamental for cash revenue and survival.

From the nineteen entrepreneurs, 52% are claiming that their businesses were new when they have started, Table 11. That gives an advantage of a being a first mover in the markets and not a follower: the customers are buying only from that venture and it is also known in the community as being the first one.

In order to protect their businesses some entrepreneurs did also protection with copyrights, trademarks or other common types of intellectual property. This is true in Second Life[®] for which Linden Lab[®] clearly specifies in the *Terms of Services* (TOS) that the objects and programs created by the players are the intellectual property of their creators. That is important since several lawsuits have been filled recently by players who claim intellectual property on objects which were copied and sold by others in Second Life[®] (Duranske, 2008).

Another way to protect the business is to erect barrier of entries. It can be in terms of programming (a special feature in Second Life[®]), quality and resources. From the nineteen entrepreneurs nine have erected intentionally by different ways those barriers. In Entropia Universe[®] the advantage the entrepreneurs have is mainly a resource-based advantage implemented by Mindark[®] itself. Mindark[®] has sold limited and unique lands to entrepreneurs with an auction system: an island was sold in 2004 (Gapper, 2006), an asteroid in 2005 (The Economist, 2005) and other very small lands thereafter. The barrier of entry in this case is the money the entrepreneurs have bided since the highest financial proposal has been rewarded for exclusive land.

Table 11 The protection of the businesses and various barrier of entries

Id.	Market	Protection	Barrier of entry
1	New	No	Resource
2	New	Host name	Resource
3	New	Trademark	Resource
4	Existed	No	Resource
5	New	Several	Quality
6	New	No	No
7	New	Copyright	Programming
8	Existed	No	No
9	Existed	Several	Programming
10	Existed	Several	No
11	Existed	Several	No
12	New	No	No
13	Existed	No	No
14	Existed	Trademark	No
15	New	No	Structure
16	Existed	No	No
17	New	No	Programming
18	Existed	No	No
19	New	Several	No

Id. is the venture identification.

In Second Life[®] a last reason may explain the good return on initial investment; it is the very limited costs of object creations: only copies of the created objects are sold. Cost-reductions are rather inexistent in that game. In Entropia Universe[®] it is different since each object is unique and need to be manufactured from raw materials which have a cost.

In conclusion, several reasons can explain the good return on initial investment of the venture: the entrepreneur's behavior toward his or her venture, the low level of finance of the venture, the barriers erected to prevent competitors to enter the market, the absence of stocks for Second Life[®] and being the first mover in a market. The past experience of the entrepreneurs as players in virtual games may certainly help them to evaluate correctly the possibilities of the platform, and to know what the players are really looking for. So, there is certainly a good fit between the needs of the customers and the offering of the entrepreneurs. That is key for success and continuous growth.

Figure 4 shows an adaptation of Barringer's model of new ventures in MMORPG. The different factors of growth for MMORPG are showed. The only category which is empty is the HRM practices. A majority of the ventures have no employees and those having several employees do presumably not have any HRM practices (observation made from the interviews of the entrepreneurs). Maybe in the future when the ventures will grow in size those with HRM practices will see higher growth than those not having them.

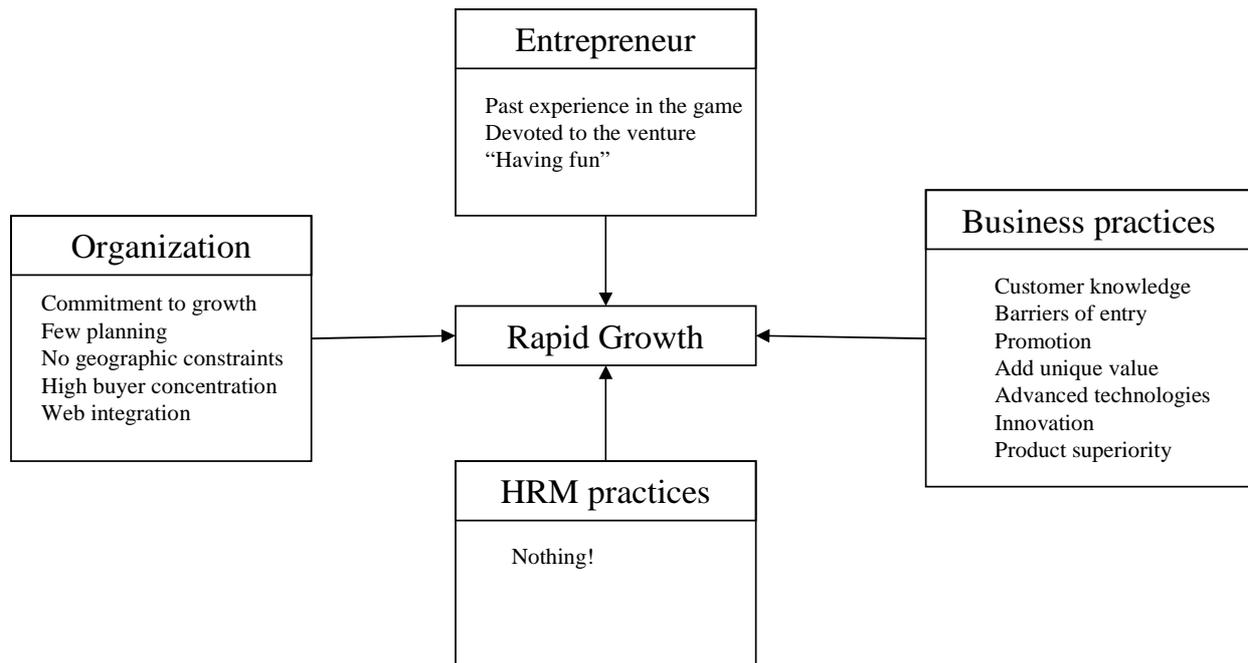


Figure 4 Growth in MMORPG illustrated with Barringer's model.

What are the steps for the venture creation process in MMORPG?

As reported by Davidsson (2005) various steps exist in the venture creation process.

Formation and screening of the ideas

In Entropia Universe[®] the idea of the venture is essentially initiated by Mindark[®] who adds new features in the game. It is difficult to initiate a new idea in that game if the feature does not exist already. In Second Life[®] there is huge autonomy for idea formation. Usually, the entrepreneurs are either looking for products or services which already exist in real life and adapt them in the game, or they create products and services they were looking for. A majority of the entrepreneurs did that step, although the marketing tools presented in table 8 were not always applied.

Protection of the ideas

Some barriers of entry are erected, and trademarks and copyrights are filled at the early stage of the ventures. Only six ventures have no protections. It does not seem primordial for the launch of the ventures.

Planning and business plan

Wijbenga and van Witteloostuijn (2007) and Gruber (2007) argued that planning needed to be done quickly in a turbulent environment. Second Life[®] and Entropia Universe[®] are turbulent environment and for the studied ventures very few entrepreneurs have done a business plan, Table 12. However for the few entrepreneurs who did it, the main elements were studied: marketing, finance, copyrights/patents and strategy. Not having done a business plan did not prevent the ventures to underperform. In fact in Second Life[®] and Entropia Universe[®], there seems no real need for planning and business plan and this fit with a turbulent environment.

Table 12 The content of the business plans

	Yes, all	Yes, partly	No
Marketing	4	6	9
Finance	5	5	9
Copyrights/patents	0	2	17
Strategy	4	6	9

Results obtained from the second survey for the **Entrepreneurs** population.

Legal form of the firm

Usually the ventures of the entrepreneurs do not have a legal form, although some of them have created a company. There is no need to have a real legal form at the early stages of the venture in Second Life[®] and Entropia Universe[®].

Search for the facilities and the financing

The financing of the ventures are primarily coming from the funds of the entrepreneurs, Table 10. The facilities are easy to find in Second Life[®], less than 1 h, and in Entropia Universe[®] as soon as an auction for a land or a stores comes to the end, the entrepreneur can have it. The search of facilities and financing is very rapid for ventures launched in Second Life[®] and Entropia Universe[®].

Starting of the operations

In Second Life[®] starting the operations can even be done without having the financing and the facilities: creating an object cost nothing and launching a service or selling objects can be done if the entrepreneur has already a social network. In Entropia Universe[®] it is different since the raw materials need to be accumulated in advance and dropped in the inventory for future manufacturing.

We can conclude from the steps done by the entrepreneurs launching ventures in Second Life[®] and Entropia Universe[®] that some steps are certainly essential (formation, screening, and protection of ideas, search of facilities and financing, launch of the operations) and others insignificant (planning and elaboration of business plan, creation of the legal form of the venture). In fact, in Second Life[®] and Entropia Universe[®], as soon as an opportunity has emerged an entrepreneur may eventually invest a small amount of money and start immediately his or her business.

Conclusion

From 103 players of Entropia Universe® and 141 players of Second Life® having participated to the first survey, nineteen entrepreneurs were identified and questioned with a specific second survey.

Fundamentally, the entrepreneurs of Second Life® or Entropia Universe® are players of MMORPG and they have a good knowledge of the platforms, as players do. Considering the trait of the entrepreneurs, experience in the platforms is relevant for launching a new venture in those games. One of the main reasons for the entrepreneurs to go for MMORPG is the fun aspect. That is a fundamental trait, which indicates that entrepreneurs involved in MMORPG are trying to fulfill their needs. A second trait, which is specific to the entrepreneurs, is the use of the platform to make money; in any case the entrepreneurs have a clear goal for their ventures.

Second Life® and Entropia Universe® platforms are well-advanced platforms and give all the necessary tools to enable venturing. The markets inside those platforms are growing and will continue to grow since Linden Lab® and Mindark® are looking for new markets to expand. The different entrepreneurs have developed ventures in several markets from land management, banking services, newspaper, to clothing stores. They had a good idea of their venture and defined well the strategy they wanted to adopt. Moreover, the entrepreneurs have examined the different markets in which they have entered although they did not use all the tools know in the marketing field. Furthermore, some steps in the process of creation of the venture may not be important and some may be done relatively promptly.

In view of Park's model, it appears that opportunity recognition and consequently entrepreneurship exists in MMORPG since all the conditions are present: an entrepreneur willing to invest money in order to increase his wealth, a new technology giving new sources of revenues and a market which is growing and well understood by the entrepreneurs.

However, the type of platforms has an impact on entrepreneurship: the low initial investment needed in Second Life® and the different possibilities offered by this game compared to Entropia Universe® lead to a higher proportion of players seeing themselves as entrepreneurs in Second Life®. It explains that fifteen entrepreneurs form the nineteen having participated to this paper come from Second Life®.

The ventures launched by eighteen entrepreneurs have good returns of the initial investment. Surprisingly, seven ventures have multiplied by 15 times or more their initial investment and eleven ventures have at least doubled their investment over the period of existence. Even if the environment is very turbulent the virtual firms are still doing well. It means that those ventures have the ability to adapt very quickly to the modifications Mindark® and Linden Lab® can bring to the games. However, it should be pointed out that only successful ventures have participated to the paper and the bankrupted ventures were not willing to. A next step of the current study would be to contact the nineteen entrepreneurs after 2-3 years and evaluate the failure rate.

In Entropia Universe[®], the entrepreneurs have a resource-based advantage which is correlated with the implantation of new features by Mindark[®]. On the other side, entrepreneurs in Second Life[®] have market-based advantages since they are first movers and propose products and services targeted to specific markets. For both platforms the entrepreneurs try to erect efficient entry barriers when possible to prevent competition to enter their markets.

As the European commission concluded in its report (Commission of the European Communities, 2003), entrepreneurship is important by contributing to job creation, growth, competitiveness, and it unlocks the potential of individuals. As a result studying entrepreneurship in platforms like Second Life[®] and Entropia Universe[®] has demonstrated new opportunities for individuals looking for new ways of business. Without a doubt the 80% of the active users of the developed countries having their avatars in virtual life by end 2011 (Gartner, 2007) will need to consume products and services. This can also be the explanation for the entry of real life firms in Second Life[®], which use MMORPG as a quick way of marketing and behavior testing.

With the help of Terdiman's book "The Entrepreneur's Guide to Second Life[®]: Making Money in the Metaverse" and Weber et al. (2008) book *Creating Your World: The Official Guide to Advanced Content Creation for Second Life[®]* the reader who plays and has fun in MMORPG could in view of the present paper conclusions create confidently his venture in Second Life[®] or Entropia Universe[®].

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I am currently in my 3rd year distance learning MBA at the Warwick University (UK), and i have chosen for my project 'Entrepreneurship in MMORPG'. For my project, I will need to have a sample of the population playing MMORPG before interviewing some entrepreneurs. It would be very helpful if you could complete the survey, thank you very much. There are no mandatory questions.

Why MMORPG (Massively Multiplayer Online Role-playing Game)

Which of those MMORPG do you play mostly

- Dark Age of Camelot
- EverQuest
- World of Warcraft
- Eve Online
- Second Life
- Entropia Universe
- other

Please enter further details for the 'other' item you entered above.

Do you play SL and/or EU

- for fun
- for curiosity
- for creativity
- to meet people
- to make money
- other

Please enter further details for the 'other' item you entered above.

Do you play other computer games than MMORPG

- Yes
- Maybe
- No

What is the proportion of computer playing time you devote to MMORPG

- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%

How often do you play per week

- Less than 1 hour
- 1 to 5 hours
- 6 to 10 hours
- 11 to 20 hours
- 21 to 40 hours
- 41 to 60 hours
- Over 60 hours

Do you have skills in

	I am an Expert	A lot	I can fearly manage	Few	No
Marketing	<input type="radio"/>				
Strategy	<input type="radio"/>				
Business plan	<input type="radio"/>				
Project management	<input type="radio"/>				
Finance	<input type="radio"/>				
Patent/Copyright	<input type="radio"/>				
Human behaviour	<input type="radio"/>				

About You in Virtual Life

When did you create your main avatar _____

Are you satisfied with what you ve done with your avatar

-
- Extremely Satisfied
 - Very Satisfied
 - Satisfied
 - Somewhat Satisfied
 - Not Satisfied

You as an Entrepreneur in SL and/or EU

Do you consider yourself as an Entrepreneur in SL or EU

- Yes
 No
 Do not know
-

Why

Would you like to be interviewed as an Entrepreneur

- Yes
 No
-

email contact for the interview

About You in Real Life

Your gender is:

- Male
 - Female
-

What age group are you in

- 18 or under
 - 19-25
 - 26-35
 - 36-45
 - 46-55
 - 56-65
 - 65 or older
-

What is your marital status

- Single
 - Married
 - Divorced
-

Region

- North America
 - South America
 - Asia
 - Europe
 - Africa
 - Oceania
 - Middle East
-

Educational Level

- School (up to 11 years of age)
 - School (up to 16 years of age)
 - College (17-19 years of age)
 - Undergraduate education
 - Postgraduate education
 - No formal education
-

What type of Employee are you.

- Full Time
 - Part Time
 - Contractor
 - Temporary
-

Which department do you work in

- Sales & Marketing
 - Human Resources
 - Customer Help Desk
 - Consulting
 - Finance & Administration
 - Management
 - Research & Development
-

What is your Salary Range

- Less than \$30,000
 - \$30,000 to \$39,999
 - \$40,000 to \$49,999
 - \$50,000 to \$59,999
 - \$60,000 to \$74,999
 - \$75,000 to \$99,999
 - \$100,000 or more
-

Entertainment

- Sports
- Cinema
- Dining out
- Music/concerts
- Work addict
- Television

I am currently in my 3rd year distance learning MBA at the Warwick University (UK), and i have chosen for my project 'Entrepreneurship in MMORPG'.

You have entered the 'Entrepreneurs' questionnaire. It would be very helpful if you could complete this questionnaire. There are no mandatory questions. The questionnaire is also anonymous (i am not interested by your RL name, address, etc).

Big Big thank you for participating to my project

Avatar

Q1(a) Avatar name

Q1(b) In which game

MMORPG (Massively Multiplayer Online Role-playing Game)

Q2(a) Which of those MMORPG do you 'play' mostly

- Dark Age of Camelot
- EverQuest
- World of Warcraft
- Eve Online
- Second Life
- Entropia Universe
- other

Q2(b) Please enter further details for the 'other' item you entered above.

Q2(c) Do you play SL and/or EU

- for fun
- for curiosity
- for creativity
- to meet people
- to make money
- other

Q2(d) Please enter further details for the 'other' item you entered above.

Q2(e) Do you play other games than MMORPG

- Yes
- Maybe
- No

Q2(f) How often do you play per week

- Less than 1
- 1 to 5 hours
- 6 to 10 hours
- 11 to 20 hours
- 21 to 40 hours
- 41 to 60 hours
- Over 60 hours

MMORPG (Massively Multiplayer Online Role-playing Game)

Q2(g) What is the proportion of computer playing time you devote to MMORPG

- 10%
 - 20%
 - 30%
 - 40%
 - 50%
 - 60%
 - 70%
 - 80%
 - 90%
 - 100%
-

About Second Life

You do not need to answer question for SL if you do not play SL

Q3(a) Are you satisfied with SL as a player

- Extremely Satisfied
- Very Satisfied
- Satisfied
- Somewhat Satisfied
- Not Satisfied

Q3(b) Why

Q3(c) What do you like with SL

- Graphics
- Concept
- People
- Sound
- Gameplay
- Other

Q3(d) Please enter further details for the 'other' item you entered above.

Q3(e) What do you dislike with SL

About Entropia Universe

You do not need to answer question for EU if you do not play EU

Q4(a) Are you satisfied with EU as a player

- Extremely Satisfied
- Very Satisfied
- Satisfied
- Somewhat Satisfied
- Not Satisfied

Q4(b) Why

Q4(c) What do you like with EU

- Graphics
- Concept
- People
- Sound
- Gameplay
- Other

Q4(d) Please enter further details for the 'other' item you entered above.

Q4(e) What do you dislike with EU

Other comments

Q5(a) Any other comments about MMORPG

Are you familiar with those marketing notions

	Yes, i know it, and i can use it	I have heard about	No
Q11(a) Strategic Choice Approach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q11(b) Soft Systems Methodology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q11(c) SWOT Analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q11(d) PEST Analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q11(e) Porter's Generic Strategies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q11(f) Porter's Five Forces Model	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q11(g) Scenario modelling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Did you use of those techniques

	Yes	No
Q12(a) Strategic Choice Approach 2	<input type="radio"/>	<input type="radio"/>
Q12(b) Soft Systems Methodology 2	<input type="radio"/>	<input type="radio"/>
Q12(c) SWOT analysis 2	<input type="radio"/>	<input type="radio"/>
Q12(d) PEST analysis 2	<input type="radio"/>	<input type="radio"/>
Q12(e) Porter's Generic Strategies 2	<input type="radio"/>	<input type="radio"/>
Q12(f) Porter's Five Forces Model 2	<input type="radio"/>	<input type="radio"/>
Q12(g) Scenario Planning 2	<input type="radio"/>	<input type="radio"/>

How did you find your project

Q13(a) Did you exploit a gap that you have discovered

- Yes
- No
- Other

Q13(b) Please enter further details for the 'other' item you entered above.

Q13(c) If Yes, how did you find the gap

Did you do the following before launching your business

	Yes	No	Other
Q14(a) Research about consumers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q14(b) Research in Data/Published reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q14(c) A risk failure analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q14(d) Research about existing products/services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Did you do the following

	Yes	No
Q15(a) Segmentation of the market	<input type="radio"/>	<input type="radio"/>
Q15(b) Targeting your segment	<input type="radio"/>	<input type="radio"/>
Q15(c) Positioning your service/product	<input type="radio"/>	<input type="radio"/>
Q16 Did you create a competitive advantage	<input type="radio"/> Yes	<input type="radio"/> No
	<input type="radio"/> No	<input type="radio"/> other
Q17 Please enter further details for the 'other' item you entered above.	<hr/>	

Q18 If Yes, how

The Marketing Mix

Q19(a) How did you define your product/service

Q19(b) How did you set the price(s)

Q19(c) What is your distribution channel, how did you select it(them)

Q19(d) How do you promote

Q20 Any comments about Marketing

Sources of finance

Q21(a) From whom did you get the money to finance the early stages of you venture

- Bank loans
- Government enterprise agencies
- Friends
- Family
- Own money
- Business angels
- Venture capital
- other

Q21(b) Please enter further details for the 'other' item you entered above.

Q21(c) Can you give an estimate of the ratio Debt/(Equity+Debt)

Q21(d) From whom do you get the money to finance your venture now

- Bank loans
- Government enterprise agencies
- Friends
- Family
- Own money
- Business angels
- Venture capital
- other

Q21(e) From whom do you get the money to finance your venture now - Other details

Do you do or have done the following

	Yes	No
Q22(a) Defining the break even point	<input type="radio"/>	<input type="radio"/>
Q22(b) Cash flow management	<input type="radio"/>	<input type="radio"/>
Q23 Have books with the following		
<input type="checkbox"/> Profit and Loss Account		
<input type="checkbox"/> Balance Sheet		
<input type="checkbox"/> Cash Flow Statement		
<input type="checkbox"/> Ratios		
Q24 Any comments about Finance		

Did you protect your venture

Q25(a) Did you get the following for your venture

- Patents
- Copyrights
- Design patents/rights
- Trade secrets
- Trademarks
- other

Q25(b) Please enter further details for the 'other' item you entered above.

Q25(c) Did you create a barrier of entry for competitors

- Yes
- No
- other

Q25(d) Please enter further details for the 'other' item you entered above.

Q25(e) How did you create the barrier of entry

Q25(f) Any comments about Copyrights/patents

Did you ask yourself the following questions

	Yes	No
Q26(a) Is there a market for the product or service?	<input type="radio"/>	<input type="radio"/>
Q26(b) Can i get the necessary resources (availability, cost and quality)?	<input type="radio"/>	<input type="radio"/>
Q26(c) Who else can aquire these resources (potential competitors, suppliers, employers)?	<input type="radio"/>	<input type="radio"/>
Q27 You decided then to go for <input type="radio"/> Joint venture/alliance <input type="radio"/> Inpedent firm stat-up		
Q28 Did you do a business plan before launching your business (if your answer is no, you just need to fill the next question of this page) <input type="radio"/> Yes <input type="radio"/> No		
Q29 Why ?		

Did you incorporate the following in your business plan

	Yes, all	Yes, partly	No
Q30(a) Marketing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q30(b) Finance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q30(c) Copyrights/patents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q30(d) Strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

About the idea of your business

This is a ranking question. Rank the items below from 1 to 2, where 1 is the highest rank, and 2 is the lowest. It is mandatory that you select an item for each of the ranks.

	1st	2nd
Q31(a) A need and a solution	<input type="radio"/>	<input type="radio"/>
Q31(b) Vision and strategy	<input type="radio"/>	<input type="radio"/>

About the market gap and competition

This is a ranking question. Rank the items below from 1 to 5, where 1 is the highest rank, and 5 is the lowest. It is mandatory that you select an item for each of the ranks.

		1st	2nd	3rd	4th	5th
Q32(a)	Need for today	<input type="radio"/>				
Q32(b)	Imitation	<input type="radio"/>				
Q32(c)	Competition growth and diversification	<input type="radio"/>				
Q32(d)	Mergers	<input type="radio"/>				
Q32(e)	Evolution of market	<input type="radio"/>				

Management of the new venture

This is a ranking question. Rank the items below from 1 to 4, where 1 is the highest rank, and 4 is the lowest. It is mandatory that you select an item for each of the ranks.

		1st	2nd	3rd	4th
Q33(a)	Entrepreneur self-evaluation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q33(b)	Start-up team and structure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q33(c)	Phases of growth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q33(d)	Becoming professionally managed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Questions every entrepreneur should answer

	Yes, i ask myself this question	No, i did not already think about	I do not know	
Q34(a)	Are my goals well defined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q34(b)	is the strategy well defined, is the strategy sustainable, are the goals for growth realistic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Q34(c)	do i have the right resources and relationships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q35 Any comments about Strategy

Your business

Q6(a) When did you start your business

Q6(b) The purpose of your business is:

- New
- Existed already
- Other

Q6(c) Please enter further details for the 'other' item you entered above.

Q6(d) Why did you start a venture in a MMORPG

Q6(e) Can you give an estimation of how much you did invest at the early stages of your business

Q6(f) Currently, how much is your business worth

Q6(g) How many employees do you have

Q6(h) Did you create a website in order to bring more services/products to your customers

- Yes
- No
- Other

Q6(i) Please enter further details for the 'other' item you entered above.

Are you 100% addict to your venture

Q7(a) Do you plan to sell your venture in the future if you can get an interesting lump sum

- Yes
- No
- Other

Q7(b) Please enter further details for the 'other' item you entered above.

What are the good sides of EU or SL for your venture

Q8(a) Can you give positive aspects of the game that help your venture

What are the bad sides of EU or SL for your venture

Q9(a) Can you give negative aspects of the game that do not help your venture

Q9(b) What kind of improvement would you like to have from the game owner (LL and Mindark) that could help your venture

Q10 Any comments about your venture

About You in Real Life

Q36(a) Your gender is:

- Male
- Female

Q36(b) What age group are you in

- 18 or under
- 19-25
- 26-35
- 36-45
- 46-55
- 56-65
- 65 or older

Q36(c) What is your marital status

- Single
- Married
- Divorced
- Other

Q36(d) Region

- North America
- South America
- Asia
- Europe
- Africa
- Oceania
- Middle East

Q36(e) Educational Level

- School (up to 11 years of age)
- School (up to 16 years of age)
- College (17-19 years of age)
- Undergraduate education
- Postgraduate education
- No formal education

Q36(f) What type of Employee are you.

- Full Time
- Part Time
- Contractor
- Temporary

Q36(g) What is your current job (if you are not full time working for your venture)

Q36(h) What is your Salary Range

- Less than \$30,000
- \$30,000 to \$39,999
- \$40,000 to \$49,999
- \$50,000 to \$59,999
- \$60,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 or more

Q37 Any final comments you want to make
