

**Impact case study (REF3b)**

<p><b>Institution:</b> University of Essex</p>
<p><b>Unit of Assessment:</b> 11 – Computer Science and Informatics</p>
<p><b>Title of case study:</b> Designing Virtual Worlds</p>
<p><b>1. Summary of the impact</b></p> <p>Professor Richard Bartle’s ‘player types’ model outlines the types of players who play Massively-Multiplayer Online Role-Playing Games (MMORPGs). Critically, his research shows that for MMORPGs to remain sustainable, the virtual worlds in which they are set must appeal to a balance of these different types of players. This insight enables commercial developers to design games that have broader and more sustainable appeal. Bartle’s work has been widely adopted across the MMORPG industry and the principles of his research have informed the development of numerous games, a notable example being BioWare’s <i>Star Wars: The Old Republic</i>. Bartle’s work is credited as a key influence in transforming the online games sector from niche to mainstream.</p> <p><b>2. Underpinning research</b></p> <p>As the largest subset of MMO (Massively Multiplayer Online) games, MMORPGs are shared, automated, real-time and persistent environments within which and upon which individuals interact using player-characters known as avatars. Current examples include <i>World of Warcraft</i>, <i>Star Wars: The Old Republic</i>, <i>Runescape</i>, <i>Lord of the Rings Online</i>, <i>Lineage</i>, <i>City of Heroes</i>, <i>Rift</i>, <i>Eve Online</i>, <i>World of Tanks</i>, <i>Aion</i>, <i>Age of Conan</i>, <i>Maple Story</i>, <i>Silk Road</i> and thousands more.</p> <p>Virtual worlds, in which MMORPGs are set, were first invented in 1978 by undergraduates Roy Trubshaw and Richard Bartle at the University of Essex and almost all of today’s MMORPGs are direct descendants of their world, <i>MUD</i> (Multi User Dungeon). The creation of MUD inspired numerous others to build their own MMORPGs. However, many developers did not fully understand the thinking behind their creations; typically, designers gravitated towards creating MMORPGS that they themselves were interested in playing, rather than designing with a wider audience of players in mind. As a result, this led to unsatisfactory and unsustainable virtual world environments. Such worlds would often fail within 6-12 months, unless they could attract a constant stream of new players.</p> <p>Enabling developers to create virtual worlds that have wider and more sustainable appeal would first require an understanding of the different types of player within them. To this end, prior to re-joining the University of Essex, Bartle published his first ‘player types’ model in 1996. Having returned to the University as a Fellow in 2002, the player types model was then placed in a role of central importance in Bartle’s 2003 book, <i>Designing Virtual Worlds</i>. Here, Bartle built on his earlier concepts and re-presented the player types model in an extended form, including the addition of sub-types. The book’s publication represented the culmination of a period of grounded research, where observations were built up over many years through designing MMORPGs and interacting with players. It meant that the original design question: <i>Why do people find MMORPGs fun?</i> could be answered.</p> <p>In <i>Designing Virtual Worlds</i>, Bartle explained that there are four basic player types, each of which can be described in more detail via two sub-types. The model was represented as a 3D graph that states whether the player likes to act or interact on the world or on other players, in an implicit or explicit manner. <i>Designing Virtual Worlds</i> lists the four types (including their sub-types) as:</p>

- **Achiever** (opportunist and planner)
- **Explorer** (scientist and hacker)
- **Socialiser** (networker and friend)
- **Killer** (griefer and politician)

Critically, Bartle explained that all these player types are required for an MMORPG to flourish. If any are largely missing, the inter-type dynamics will lead to a drain of players. Furthermore it was shown that there are only four stable configurations: achievers dominant; socialisers dominant; balanced world; empty (failed) world. In addition to describing what each of the different player-types finds fun within the virtual world, the research also described how players transition between different types over time, in a pre-described order (which players experience as increasing immersion). This also helps to explain why people find MMORPGs so compelling: they represent a journey of self-actualisation.

The research has been validated by rigorous, systematic testing performed by other researchers. The most celebrated of these is a factor analysis of a wide-ranging questionnaire given to 3,200 players by Nick Yee of Stanford University (<http://www.nickyee.com/daedalus/archives/pdf/3-2.pdf>). This identified seven of the eight sub-types (with some duplication) and the concept of immersion, along with the three non-trivial stable world states. The research has also been validated informally, through its continued use by commercial game designers, simply because they can see that it works.

Since 2003, Bartle has remained active in this domain of research and has held the positions of Principal Fellow, Senior Lecturer and Visiting Professor at Essex. He has published two notable book chapters (Bartle, 2005; 2009) in this area, in which he further explains and builds upon his 3D graph model of player types. All three of the referenced texts remain popular and have been hugely influential in contributing to the sustainability and long-term appeal of the MMORPG genre. As a result of Bartle's work, MMORPGs can continue indefinitely. His research has been crucial in transforming the MMORPG industry from niche to a mainstream genre.

### 3. References to the research [can be supplied by HEI on request]

Bartle, Richard. A. (2003) *Designing Virtual Worlds*. New Riders, Indianapolis IN. ISBN: 978-0131018167 (852 citations – November 2013)

Bartle, Richard. A. (2005) *Virtual Worlds: Why People Play*. In: Alexander, Thor (ed.), *Massively Multiplayer Game Development 2*, pp.3-18. Charles River Media, Hingham MA. ISBN: 978-1584503903

Bartle, Richard. A. (2009) *Understanding the Limits of Theory*. In: Bateman, Chris (ed.), *Beyond Game Design: Nine Steps to Creating Better Videogames*, pp.117-133. Delmar, Albany NY. ISBN: 978-1584506713

### 4. Details of the impact

Bartle's research on virtual worlds and in particular his player types model, as presented in *Designing Virtual Worlds*, underpins impact within the commercial domain of MMORPG design and beyond. In designing new worlds, not only do developers now know what players find fun, they also know *why* they find these things fun. Furthermore, Bartle's research provides the creators of virtual worlds with an understanding of why players move between types, and what paths they will take; this means that appropriate content can be lined up accordingly. Overall, his work enables

designers to create worlds that have sustainable and long-term appeal. The player types model has been accepted and adopted almost universally across the sector and *Designing Virtual Worlds* is widely recognised as the standard text on the subject [see corroborating sources 1, 2].

In the ten years since the publication of *Designing Virtual Worlds*, the games industry has experienced significant growth, and this expansion has been supported by contributions from an increasing number of developers. Amongst these is BioWare, a division of Electronic Arts. In an email testimony, BioWare's Lead Systems Designer outlines the significance that the research behind Bartle's player types model has had for the MMO industry, noting that "Bartle's work on the four player types of online game players [...] is considered to be one of the academic pillars of massively multiplayer game design" [3]. He also goes on to explain how Bartle's research has influenced the design of a number of individual games including, most notably, BioWare's first entry into the MMORPG market: *Star Wars: The Old Republic (SW:TOR)*. Referring to the development of *SW:TOR*, the testimony details how "[Bartle's] philosophies have formed a central role" [3].

In *Star Wars: The Old Republic*, BioWare succeeded in creating a game which had both instant impact as well as long-term appeal and sustainability. Within days of its launch in 2011, the game had attracted 1 million subscribers (each paying, typically, \$14.99/£8.99/€12.99 per month), making it the "fastest-growing subscription MMO in history" [4]. Two months later this number had grown to 1.7 million [5]. This success duly led to numerous industry accolades. In 2011 *SW:TOR* was named GameSpy's *MMO of the year* [6] and MSNBC's *Game of the year* [7]. In reflection of its sustained appeal, at the 3<sup>rd</sup> annual Game Developers Choice Online Awards (in 2012) it won awards for *Best online game design*, *Best new online game*, *Best online technology* and *Best online visual arts*. It was also nominated for the *Best audio online game* award and the *Online Innovation* award [8]. The most recent figure obtained during the REF2014 impact period indicates that, as of 15<sup>th</sup> June 2013, *SW:TOR* had achieved 2.59 million global sales [9].

Today the number of virtual worlds extends into the thousands, and *Star Wars: The Old Republic* forms part of a vibrant and growing MMO sector. The website *MMOData.net* reports that from 4 million in 2003, the number of worldwide subscriptions and active accounts had grown to 15 million by 2008, and had reached 20 million by 2012 [10]. By this stage the global industry was valued in excess of \$12 billion and this figure is expected to reach \$17.5 billion by 2015 [11]. The growth of the sector – and the way that Bartle's research has contributed towards this – is a topic addressed by the Founder of the International Game Developers Association (IGDA, the worldwide professional association for video and computer games developers). In an email testimony [2], he notes how the player types model has been "highly influential" and explains how "the influence of Bartle's model is evident in many MMORPG games". He then concludes:

"This [the growth of the online game industry] is attributable to a number of factors, such as improvements in internet connectivity and graphic rendering. However, it's evident that Bartle's work has also made an important contribution towards this growth and, were it not for his research, it is unlikely that the sector would have reached the status that it has today. Bartle's insights, as documented in *Designing Virtual Worlds*, have been a key contributing factor in transforming the sector from niche to mainstream".

*Founder, International Game Developers Association*

Whilst the greatest impact of Bartle's research has been in the field of MMORPG design, his player types model has also been applied elsewhere; for instance, in the field of Gamification, where the

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principles of game thinking and mechanics are applied in non-game contexts. Concepts such as progress bars, challenges, and rewards for 'good behaviour' are increasingly being used to engage with customers or service users and to solve problems. An example is the well documented 'Speed camera lottery' in Sweden, where law-abiding road users can win a portion of the fines accrued from drivers who break speed limits, the aim being to incentivise safe, law abiding driving [12]. A ground breaking and widely cited book on the subject (Zichermann, Gabe and Linder, Joselin: *Game-Based Marketing*, Wiley, Hoboken NJ, 2010) places Bartle's player types theory at the centre of Gamification [13, see page 144].

**5. Sources to corroborate the impact** [All sources saved on file with HEI, available on request]

[1] Game Developers Choice Online Awards, 2010. *Archive. The First Annual Game Developers Choice Online Awards* [online] Available at:

[http://www.gdconlineawards.com/archive/gdcoa\\_1st.html](http://www.gdconlineawards.com/archive/gdcoa_1st.html) [Accessed 26 June 2013]

[2] Founder, International Game Developers Association

[3] Lead Systems Designer, BioWare

[4] Electronic Arts, 2011. *The Old Republic™ Jumps to Light Speed. Critically Acclaimed Game from BioWare Already the Fastest Growing Subscription MMO in History* [online] Available at: <http://www.swtor.com/info/news/press-release/20111223> [Accessed 26 June 2013]

[5] Eurogamer, 2012. *EA Claims 1.7m active Star Wars: The Old Republic subscribers* [online] Available at: <http://www.eurogamer.net/articles/2012-02-01-ea-claims-1-7m-active-star-wars-the-old-republic-subscribers> [Accessed 26 June 2013]

[6] Gamespy, 2011. *GameSpy's Game of the Year 2011 Awards* [online] Available at: <http://uk.pc.gamespy.com/articles/121/1215449p5.html> [Accessed 26 June 2013]

[7] Wikipedia, 2011. *Star Wars: The Old Republic* [online] Available at: [http://en.wikipedia.org/wiki/Star\\_Wars:\\_The\\_Old\\_Republic](http://en.wikipedia.org/wiki/Star_Wars:_The_Old_Republic) [Accessed 12 August 2013]

[8] Game Developers Choice Online Awards, 2012. *3<sup>rd</sup> Annual Game Developers Choice Online Awards* [online] Available at: <http://gdconlineawards.com/> [Accessed 26 June 2013]

[9] VGChartz, 2013. *Star Wars: The Old Republic* [online] Available at: <http://www.vgchartz.com/game/31584/star-wars-the-old-republic/> [Accessed 26 June 2013]

[10] MMOData, 2013. *Total MMORPG Subscriptions and Active Accounts listed on this site* [online] Available at: <http://users.telenet.be/mmodata/Charts/TotalSubs.png> [Accessed 26 June 2013]

[11] Superdata, 2012. *Global MMO Games Spending Exceeds \$12Billion* [online] Available at: <http://www.superdataresearch.com/global-mmo-games-spending-exceeds-12bn/> [Accessed 26 June 2013]

[12] NPR, 2011. *'Gamifying' The System To Create Better Behaviour* [online] Available at: <http://www.npr.org/2011/03/27/134866003/gamifying-the-system-to-create-better-behavior> [Accessed 26 June 2013]

[13] Zichermann, Gabe and Linder, Joselin: *Game-Based Marketing*, Wiley, Hoboken NJ, 2010 ISBN: 978-0470562239