

MAJESTIC GAMIFICATION: A CASE STUDY IN THE ADOPTION OF A SERVICE INNOVATION

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ABSTRACT

Purpose: A case study is presented concerning a gamified awards system designed to encourage software users to explore a suite of tools, and to share their expertise level in profile pages. Majestic is a high-tech business based in the West Midlands (UK) which offers a Link Intelligence database using a Software as a Service (SaaS) business model. Customers leverage the database for tasks including Search Engine Optimisation (SEO) by using a suite of web-based tools. Getting to know all the tools and how they can be deployed to good effect represents a considerable learning challenge, and Majestic were aware that.

Design/methodology/approach: We present the development of Majestic Awards as a case study highlighting the most important design decisions. Then we reflect on the development process as an example of innovation adoption, thereby identifying resources and cultural factors which were critical in ensuring the success of the project.

Findings: The gamified awards system makes learning the tools an enjoyable, explorative experience. Success factors included identifying a clear business goal, the process/project fit, senior management buy in, and identifying the knowledge and resources to resolve technical issues.

Originality/value: Prior to gamification of the system, only the most expert users regularly utilized all the tools. The user base is now more knowledgeable about the system and some users choose to use the system to publicize their expertise.

Key words: gamification; search engine optimisation; innovation adoption

1. INTRODUCTION

Majestic-12 Ltd is a West Midlands (UK) based SME which surveys and maps the Internet and has created the largest commercial Link Intelligence database in the world. The company was ranked 17th in the 2014 Deloitte Fast 50 technology award programme (<http://www.fast50.co.uk/2014-winners/2014-winners.aspx>), making it one of the UK's fastest growing technology companies. The Majestic Internet map is used by SEOs, new media specialists, affiliate managers and online marketing experts for a variety of uses surrounding online prominence, including link building, reputation management, website traffic development, competitor analysis and news monitoring. As link data is also a component of search engine ranking, understanding the link profile of websites can empower rational study of search engine positioning.

Majestic offers a toolbox for analysing link intelligence data, including the Site Explorer, Search Explorer, Webmaster Tools, Neighbourhood Checker and many more. These are delivered through a browser based Software as a Service (SaaS) distribution model. While the diversity of the available tools offers many advantages, they are also potentially daunting to prospective users; with considerable knowledge required to understand and exploit the available tools to their fullest. While many of Majestic's customers are experts in the tools, new customers face a learning curve in order to gain fluency.

Gamification has provided an innovative solution to this problem. Since the adoption of gamification at Majestic, feedback has been highly positive, and data indicates that both existing and new users are engaging more with the tools available. This process of integrating gamification into an existing system was highly iterative and rapid, following the principles of agile development. The outcomes

of this process and the lessons learned provide a useful case study in the adoption of gamification as an innovation.

In this case study, we will describe the 'Majestic Awards' gamification system and track its development from initiation to deployment and use. We will reflect on the development as an example of innovation adoption and identify success factors which may be relevant to other practitioners innovating with gamification technology in a business context.

2. THE GAMIFICATION SYSTEM

Majestic's gamification system supports on-boarding of new users, and allows existing users to both rate themselves against their peers and demonstrate their fluency to their clients. At the time of writing, the gamified features contained in the Majestic interface include 110 awards and badges, and a points and levelling system. New users are guided through the interface with tutorials, earning points and badges along the way. Further points and awards are given when the player performs specific actions related to using the system; providing extrinsic motivators for mastering the interface. In addition, levels are reached as points accumulate, and a leaderboard displays the top 10 high scoring users who have opted into disclosing their profile and rank. However, exploration is also an important element, and hidden rewards can be attained without deliberately pursuing them. Examples of these are the 'Early Bird' and 'Pizza Lover' rewards, given to those who are the first to use the system on any given day or those who search for the term 'pizza' respectively. The system allows for the addition and refinement of awards and other mechanics according to the wishes of Majestic's employees and responses from users..

3. DEVELOPMENT

In this section the development of the Majestic Awards system is presented. The development process was agile and thus iterative, however, for narrative purposes only, the content is organized following development lifecycle stages: Initiation, Prototype, Design, Implementation and Deployment.

3.1 Initiation

The project was instigated by the marketing director of Majestic as a loosely framed opportunity to investigate whether gamification had potential. In particular, the Hargreaves Lansdown Stock Market Challenge 'The Big Deal' (<https://www.hl.co.uk/the-big-deal>), designed to educate users about investments, was identified as an exemplar of how a game could be used to build engagement with a business. Initially, the concept of an awards based system which rewarded knowledge of Majestic's tools was defined for the purposes of developing a prototype.

3.2 Prototype

Development of the prototype was undertaken by an undergraduate Computer Science student, on placement with Majestic as part of a sandwich course, working with a User Experience consultant, in the spring of 2014. The first system comprised a user profile page, a monitoring mechanism to track the registered users' interaction with tools, awards, and three levels of achievement.

The prototype provided an artefact around which discussions of the gamification project between different kinds of stakeholders could be generated and connected. This went beyond a simple feedback process to build a shared terminology, or as Eric Evans (2003) terms it, a 'ubiquitous language'. A tipping point in the language of the discussion came when people started to use phrases associated with enjoyment for both developers and users during system modeling discussions, such as "wouldn't it be fun if ..."

This shift in terminology reflected two things in the development process. Firstly, there was acknowledgement that points, awards and leaderboards alone were not sufficient for a successfully gamified system in Majestic's case. Secondly, the gamification of Majestic's system had the potential to be as motivating for its developers as it could be for its users.

This is in keeping with theories of intrinsic and extrinsic motivation in games and education (Malone, 1981), which have been related to theories of gamification (Deterding et al., 2011). Extrinsic motivators can be defined as outputs that are the result of actions but not vice versa, and are therefore related artificially. Intrinsic motivators, on the other hand, result from the direct relationship between actions and outcomes. In the video game *Space Invaders*, for example, the user controls a ground-based gun that must shoot alien space ships before they successfully descend to the bottom of the screen. The intrinsic outcome of blasting a space ship is the destruction of the ship itself, rather than the points that are awarded. Therefore, blasting aliens is intrinsically motivating in *Space Invaders*, whilst earning points and a place on the leaderboard are extrinsic motivators.

The understanding of games providing both intrinsic and extrinsic motivators emerged through discussions around the prototype. Both gamers and non-gamers alike within Majestic were able to articulate the necessity for game mechanics that motivated users at a range of intrinsic and extrinsic levels. Of equal importance, however, was the recognition that the implementation of these mechanics would be as motivational for the developers themselves in similar ways. On the one hand, extrinsic results would emerge through the increased usage of the service. On the other hand, developers at Majestic would benefit from increased job satisfaction at an intrinsic level by benefitting users through an enjoyable design and implementation process.

3.3 Design

The team at Majestic used the awards prototype as an exemplar around which to design the way forward, giving individuals a chance to contribute to the development of the system, based upon their own experiences of playing and enjoying games. An example outcome of this was a system of tutorials, where users are guided through the tools at a rudimentary level. The design of these processes lead to iterations of the interface being developed, from a visual representation of the monitoring events to a more accessible, explorative environment where users could comfortably and enjoyably learn about Majestic's tools.

Following the completion of each tutorial, users are rewarded with points and badges, and encouraged to develop mastery of the tools at a more autonomous level in order to achieve more points. This system of integrating tutorials, game mechanics and rewards to help users attain mastery in video game interfaces has been previously identified as being a potentially useful tactic for encouraging learning in general (Gee, 2008). It is therefore noteworthy that the agile development process at Majestic cultivated this model by allowing individuals to contribute ideas and knowledge based upon their prior experiences and responses to the prototype.

Beyond the tutorials, the team at Majestic were aware that fun elements were required in order to sustain engagement. This presented a significant challenge, as the output of SEO is rather dry by nature. Having refined the interface for the tutorials, additional design elements were integrated in order to fully exploit the gamification of the system and encourage users to explore the possibilities within the interface. Some of these awards could be expected, and visual cues given to indicate the presence of a badge and possibility of being awarded it for completing a certain task, such as using the personalization features. Other awards were given to users for less obvious actions, such as hidden 'Easter Eggs', which are not advertised but the user achieves through actions that may not

seem immediately obvious. Example of these are the ‘Pizza Lover’ and ‘Early Bird’ awards described in Section 2.

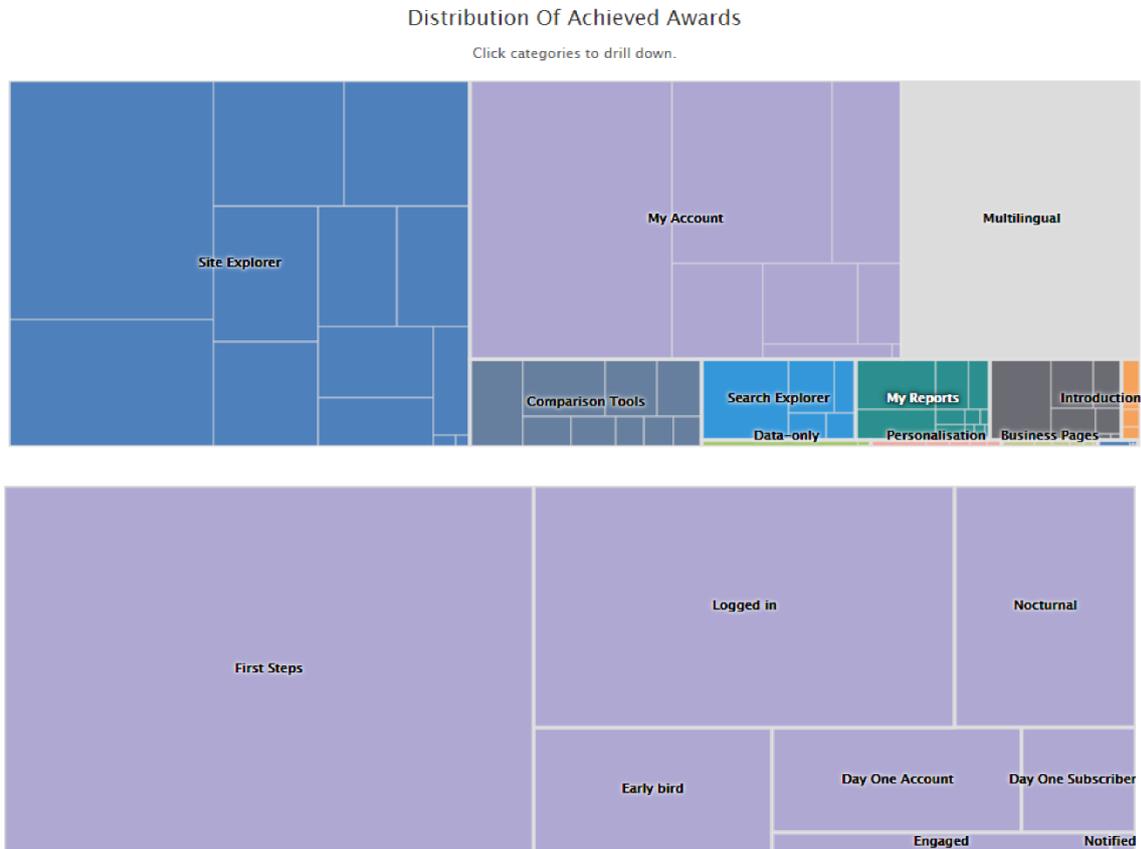


Figure 1: Statistics of awards given as of June 2015: top - all award categories, bottom - drill down into the My Account category.

These refinements to the interface and game mechanics encouraged the team at Majestic to take into account the different users that might engage with the system and their requirements. The original interface was maintained in order to accommodate the existing user base that was both familiar with, and may in fact prefer, the preceding system. Additional considerations, such as the implementation of opt-in and opt-out profile settings, allowed users to select the gamification features they participated in. This also gave users the equivalent of privacy control settings over their account, which was deemed important for both legal reasons and general usability. The result was that independent SEO experts could use the Awards system to promote their skills, while other users, whose work was perhaps confidential, could use the system to build knowledge of Majestic’s tools without having to disclose their use of the system to competitors. Clauses concerning usage of the Majestic Awards system were consequently added to the Terms and Conditions of use.

3.4 Implementation

Development work on what became the released system began in October 2014. Some exemplar awards, and their associated triggers of user activity were identified, and these awards were weighted using Scrum Poker (also called planning poker) to reach subjective consensus on the value of different actions and knowledge. Typical types of awards to subsequently make the final cut include:

- Everyday Use - revolves around using the main tools. These awards exist to move new users through the toolset during on-boarding.
- Personalisation - a few pages exist where users can tweak how the site behaves. Uptake of this feature was low, therefore some awards were added to promote these sections
- Conference Meet-ups - taking the awards offline, users are encouraged to visit company representatives at conferences, register their visit, and receive an award. A nice side-effect is that all upcoming events are showcased in the website.
- API Mastery – the API is only available to premium account holders and so this rewards some of the company's most valued customers.
- Delighters – designed to amuse while identifying the behaviour of really dedicated users, these include Easter Egg awards associated with events such as public holidays and awards such as the "Early Bird" for users who log in early in the morning.

Awards were rejected for two main reasons:

- Technical – implementing the award posed more technical issues than seemed reasonable for the benefit, e.g. awards for users who interact with Majestic on Social Media was desirable to the business, but presented insufficient ROI for the required technical investment.
- Behavioural – potential gaming behaviour associated with the awards was not actually something to encourage, e.g. a, "Hello Friend," award for contacting the Helpdesk is good for genuine calls but might encourage users to contact the helpdesk just to get the award – causing unnecessary extra work.

Following definition of the initial awards, the development team, led by a technical specialist, then created an environment to do real time monitoring of the SaaS website, tracking users' actions to identify those for which rewards were due. Monitoring and award-giving were considered separately, allowing the monitoring aspects to be optimized for a high performance website. This was achieved using lossy data capture approach resulting in the additional benefit of an improved monitoring system.

Leadership of the development team was then passed from the technical lead to the user experience lead to focus on the user interaction elements needed to build the game. Development was also split into two smaller projects to run sequentially: Business Pages and Awards. Business Pages refers to the opt-in public user profile, and associated user profile management systems. Awards represented the game engine and associated gamification of the website.

Six weeks in, the team realized that they had created something which, if they were to maintain interest, would have to be continuously updated, so that players had new things to discover and do. This was an insight which came from the long term gamers in the team, who were aware that maintaining interest in games such as Grand Theft Auto and Massively Multiplayer Online (MMO) games requires a wide range of existing rewards and the regular creation of new content and challenges. In the Majestic Awards system this currently takes the form of additional Easter Eggs, reminding users who have completed the advertised challenges of the existence of the game mechanics in the background.

An important factor in the success of this stage was the recognition of ownership of the implementation process by different members of the team. Those developing the system were empowered to respond to marketing requirements based upon their understanding of games, and were encouraged to contribute their methods within this context. The resulting system was therefore designed from both gaming and marketing perspectives; providing both enticing interfaces for prospective users and engaging experiences for existing ones.

Beta testing took place in two phases. First, around January 2015, the monitoring system was run in the background to get a picture of what normal usage patterns were and to tweak the weightings on rewards. Then the system was released to players for feedback etc. Players at this point were a mixture of members of staff and expert SEO users.

3.5 Deployment

By February 2015 the business pages were launched and the Majestic Awards system went live. To bootstrap the leaderboard, Majestic Ambassadors (a worldwide group of peer-respected brand advocates) were given an initial boost award. Similarly, as awards that Beta testers won during testing were to be reset on launch, they received an exclusive award as a “Thank You.” The points-based leaderboard was very volatile early on as ambassadors publically competed for high positions, but the initial frenzy settled down.

As of June 2015 the system had been in successful operation for four months. Some users of the system had reached Level 25 (see Figure 2), and the pattern of awards had stabilized (see Figure 1). Site Explorer awards, associated with everyday use were the most awarded class, being given to most active users, followed by the My Account awards. Similarly within award categories some such as the ‘First Steps’ award in My Account are held by almost all players, whereas awards associated with the most active user behaviour (like Early Bird) are much more rarely used. Awards for a selected active user are shown in Figure 3. The pattern of awards can identify particular user behaviours: this user is a heavy data user with 50% of his awards being in the Data Only category. Our example is in fact a Majestic employee, but analysis of the awards given can potentially be used to profile the Majestic user base for communications purposes, e.g. marketing, or indeed to detect uses of the system that breach the terms of use, such as site scraping.

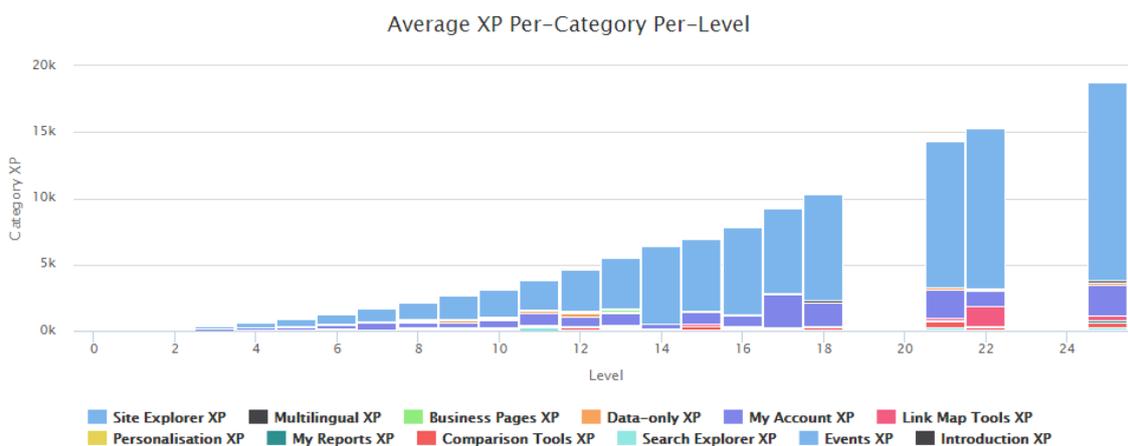


Figure 2: Average points (XP) per level as of June 2015.

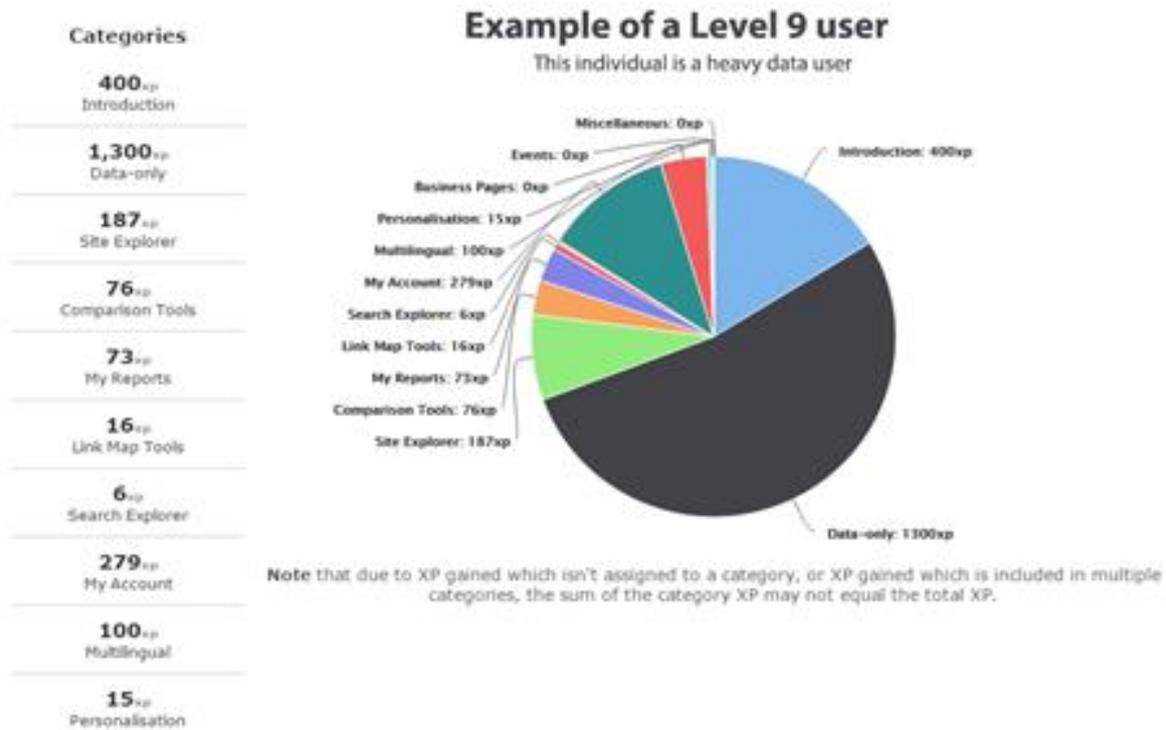


Figure 3: Distribution of awards per category for an individual user.

4. INNOVATION ADOPTION

An extensive literature on innovation adoption has developed over recent decades. In this section, we will reflect on the Majestic case from the perspective of this literature, identifying the dimensions of the innovation adoption process that are relevant to the case and, in particular, factors which contributed to the success of the gamification initiative.

Building on the seminal work of Rogers (1983) the innovation process is a foundation of adoption theory. This takes the form of a sequence of steps: Awareness, Consideration, Intention, taking the Adoption Decision and Continued Use (Frambach & Schillewaert, 2002). In the Majestic case, Awareness came via the Marketing Director, giving the project senior management support from the outset. Consideration involved an assessment of the technical capabilities of the enterprise. Intention was marked by the point the project moved from a loosely framed opportunity to setting a clear business goal for the gamified system (growing customer awareness of the company's products). The Adoption Decision led to development of Majestic Awards and its launch. The company is currently at the Continued Use stage, exploring the ways in which games must continue to evolve to continue generating interest.

This case study can be seen as taking an Organizational Technologist perspective on innovation adoption (Gopalakrishnan and Damanpour, 1997) in so far as it concerns adoption of a technology within a specific organization. With an organizational perspective identified, the resource-based view of the firm is a common and useful theory to apply to organizational innovation adoption (Crossan & Apaydin, 2010). The resource-based view holds that firms build competitive advantage as a result of creating and controlling resources which are rare, or valuable, or difficult to imitate or substitute (Barney, 1991). From this viewpoint we can see that the gamification approach allowed Majestic to exploit and develop resources to gain competitive advantage. Specifically, resources identified by the case are:

- The SEO tools themselves, which are sufficiently numerous and complicated to require a game to help users explore and learn them. Though individually easy enough to replicate, the sheer number of these is hard to substitute.
- The monitoring environment, which underlies the automated awards, allowed a system to be built that did not disrupt the core business of the SaaS site. The effort required to build such a technology means that, while not inimitable, it is relatively difficult to replicate quickly.
- Not only did Majestic employ personnel with the technical skills to build the gamification features but also, critically, staff who were gamers themselves brought the insight that for a gamified solution to be sustainable it needs to be fun. Although gamers are certainly not rare in groups of programmers, the agile culture of the firm, and in particular its ability to develop a ubiquitous language shared by all stakeholders, allowed this insight to surface. Hence the working process of the firm is identified as a difficult resource to imitate.

The process of organizational innovation can also be analysed taking a knowledge based approach as proposed by Gopalkrishnan and Bierly (2001), who characterize innovations on three dimensions: tacit-explicit, systemic-autonomous and simple-complex. The gamified solution is by its nature explicit, as its whole purpose is to be accessible and encourage users to learn. Gopalkrishnan & Bierly found that explicit innovations were typically perceived as being effective because users had positive experiences of them, and this seems to be the case with Majestic. The solution is systemic in nature because it requires the SEO tools and infrastructure to be in place. As predicted by the theory, this means that an internally sourced solution was required, as a high degree of coordination was needed to implement the system, for example selection of the awards was an activity in which input was sought from the whole company, and finalised by the Marketing Director in line with the company's strategic aims. Finally, the knowledge embedded in the system could be perceived as complex, because it incorporates the complex underlying infrastructure. Complex choices are on the one hand harder for competitors to imitate but on the other harder for innovators to understand, leading to them being sometimes perceived as less effective.

5. CRITICAL SUCCESS FACTORS

A single case cannot provide definitive conclusions concerning success factors. However, in this section we summarise the factors which led to success within the specific context of the Majestic working environment as a contribution towards the growing body of case knowledge on gamified solutions in business.

5.1 Clear Business Goals

The definition of business goals emerged slowly but once established the project picked up momentum. The goal was to promote user engagement with the diverse product, to encourage exploration of new features, and to provide on-boarding support for new users.

5.2 Process/Project Fit

Within the Majestic context, which is a software company and therefore used internal resources for developing the system, the Agile development process made a significant contribution to the success of the project. The Agile Manifesto (<http://agilemanifesto.org>) is the development philosophy in the company and had a positive influence. For example, valuing Responding to Change allowed problems to be found and fixed quickly, valuing Individuals and Interactions meant that several online gamers on the team were empowered to feed in their insights to make it a more enjoyable experience, and valuing Customer Collaboration meant that beta testers' input was acted on and rewarded at the roll-out of the Game with a special award.

5.3 Senior Management Buy-in

Like many organizations using agile development methods, Majestic has a relatively non-hierarchical structure. Nonetheless the support of senior management figures was critical. The initial push to explore gamification came from the Marketing Director who also gave input into the design of the awards. The support of senior management remained important for ensuring the project had sufficient resources (in particular accommodating a significant overrun that was demanded by the team to make the game fun). Estimating time to completion on innovative development projects is difficult and the team began with a degree of uncertainty about the scale of the task.

5.4 Technical and Knowledge

Developing the Majestic Awards system required technology solutions. Being a software company meant these were sourced internally and the contribution of developers who also had expertise in the product was significant. However, the prototype, developed by a placement student, was critical as a focus for communication, and allowed ideas to be generated and key technical issues to emerge. The latter included building the monitoring system in such a way that it could never crash the main site, and preventing undesirable user behaviour by restricting the user's view of the game mechanics (the users are SEO professionals and therefore gaming online systems, for example to improve the ranking of a client's site on a search engine, is a part of their job).

6. CONCLUSIONS

The case study presented here concerns a single gamification project at a company with agile working practices. This specificity limits the application of the conclusions which may be drawn. However, we note that many of the observations in the case study align with theories published in the innovation literature. In particular, the resource-based view of the firm provides an appropriate lens for understanding how the working processes, knowledge and technical resources of Majestic supported the company in developing the design model for the gamified system and the ubiquitous language that supported free exchange of insights between different stakeholder groups.

In addition, the processes of implementing gamification features at Majestic reflect the selection processes of similar features within the literature. Of particular note in this case study, however, is the acknowledgement of different user groups, and the suitability of different gamification features, such as intrinsic and extrinsic motivators, within the same service. Again, this was facilitated by agile development processes, where the features that reflected the different perspectives of the development team members could be implemented quickly. Future research can build upon these findings by exploring the potential for working environments to encourage such developments, and how combinations of gamification features could be incorporated in various contexts in order to accommodate different users.

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