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A Guide to Data-driven Audience Experiences: Their Application and Value for the Esports Industry

Introduction

Esports have grown into a global phenomenon with more than 650m viewers and a 1.5bn USD market. The large and detailed amount of data available about in-game actions provides an opportunity to incorporate novel insights about complex aspects of gameplay into the audience experience. This enables more in-depth coverage for experienced viewers and increased accessibility for newcomers.

Previous research has only explored a limited range of ways that data could be incorporated into esports viewing (e.g. post match data visualisations). Few studies have investigated how the presentation of data and statistics impacts spectator experiences and viewing behaviours.

In 2019 we undertook a large-scale case study of data-driven audience experiences (DAX for brevity) and within this study, the design, implementation and evaluation of Weavr Dota 2 Companion, a mobile app that allows audiences to consume data-driven insights during and around esports broadcasts.

The here and now: Existing data-driven audience experiences

Most leading content producers leverage custom broadcast solutions that present key statistics to the audience via data-driven overlays. There are, however, challenges of utilising overlays that are presented in a 'one-for-all' fashion. First, data overlays can distract from the actual match, particularly when presented at high frequency. Secondly, the types of statistics that are perceived as useful by the audience may vary depending on the individual viewer's expertise and preferences.

A range of mobile apps, statistics websites and virtual reality offerings let viewers have a more interactive experience. Web-based services such as Dotabuff¹, Open Dota², DatDota³ and Stratz⁴ provide detailed breakdowns of matches, including historic statistics, map views of key objectives, and textual highlights. These services are designed primarily for players and professional teams, and for offline use (i.e. for post match analysis). They do not work on live matches, and are not designed to accompany live broadcast. TrackDota⁵ and Valve's Dota 2 app⁶ do provide live on-demand content, but their functionality is still limited to basic graphs and statistics.

¹ <https://www.dotabuff.com/>

² <https://www.opendota.com/>

³ <https://www.datdota.com/>

⁴ <https://stratz.com/>

⁵ <https://www.trackdota.com/>

⁶ <http://www.dota2.com/dpc/>

These existing services address a small range of ways that an esports audience experience might be enhanced by data, however the design space for innovation in DAX remains vast and rich in potential applications for both research and commercial use.

The future: Augmenting the audience experience

Few studies have investigated how interactive data-driven features affect viewing practices and as a consequence, design conventions for would-be DAX creators remain in their infancy.

In 2019 we undertook a large-scale case study of DAX and within this study, the design, implementation and evaluation of Weavr Dota 2 Companion⁷, a fully functional mobile app for Dota 2. Our work expands the design space of DAX to include novel data-driven storytelling features and content personalisation to enhance viewer experiences of esports.

The app translates live match data into interactive narratives and rich visualisations for esports viewers. It provides real-time updates of the virtual arena, showcases important performances and live statistics, and provides a personalised compilation of on-demand highlights.

Created as part of the Weavr project, development of the app took place over a 12-month period of close design and technical collaboration with Weavr project partners. Throughout this process we consulted extensively with multiple game analysts and other esports professionals to ensure the app's best experiences. In particular we were interested in what stories most excite and interest audiences as this would drive what choice of data insights to present.

An ongoing government-funded collaborative project, Weavr explores new audience experiences posed by the coming together of new forms of data analytics and immersive technologies in the context of esports. The project brings together partners with extensive expertise in a range of areas relating to the creation of DAX including ESL, a leading global esports company and Dock10, the largest studio operator in the UK. As University research partners, we provide expertise in game analytics and the development of new data-driven content forms from a user-experience perspective.

Evaluation of the app's features took place at two major international esports tournaments, ESL One Birmingham 2019 and ESL One Hamburg 2019. Our researchers assessed the app with fans on site, and with prominent commentators, pundits and analysts to gather extensive feedback in an authentic, ecologically valid setting. We explored how and when spectators might engage with data around esports competitions.

Based on 170 users who installed and used the app over the course of three tournament days, we found a strong appetite to engage with data-driven content. The majority of users tuned into the app repeatedly, and integrated use of the app with their existing social viewing habits in a multitude of ways. Users identified clear value in the content provided and a desire for personalisation was an overarching theme. Users liked to 'take control', exploring aspects of the match that the main commentary and production had not covered.

Participants liked the app's win probability feature and reported using this component as a way to enhance their understanding of the state of the game. Participants valued having access to additional live statistics that the app provides, and the potential to generate a wide range of personalised KPIs proved to be another popular feature.

⁷ <https://weavr.tv/dota2/>

Evaluation in a naturalistic setting revealed a range of usability improvements that were subsequently incorporated into an iteration of the app's menu design and user interface.

Summary and next steps

Our findings are specific to design of the Weavr app and Dota 2 but we believe that they provide an important first step in understanding how interactive data-driven features affect the viewing practices of esports fans.

By evaluating how the companion app and its design features were experienced by spectators we gained a broad range of perspectives that provide a rich picture of the potential uses, values, opportunities and risks around this kind of data-driven experience.

We identified a series of findings relating to the app's design and methodology that can inform the research and development of DAX, setting out a roadmap for future work in this area.

In future work we plan to expand our approach to other popular esports genres, and explore the applicability of data-driven experiences to traditional sports.

Link to academic paper > <http://eprints.whiterose.ac.uk/160015/>