

KAI VON LEWINSKI (HG.)

IMMERSIVER JOURNALISMUS

TECHNIK – WIRKUNG – REGULIERUNG

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Virtual Reality (VR) und Augmented Reality (AR) gelten als State of the Art der Mensch-Maschine-Interaktion. Während in der öffentlichen Wahrnehmung etwa von »Pokémon Go« die spielerischen Elemente im Vordergrund stehen, gibt es zunehmend und absehbar auch journalistische Anwendungen (z.B. »Project Syria«). Der Band versammelt Beiträge, die sich mit dem Status quo der Technik und Anwendungsszenarien beschäftigen. Da die in virtuellen Welten verringerte und teilweise unbewusste Distanz von Betrachten und Erleben bei journalistischen Inhalten besonders kritisch ist, werden erstmals auch Regulierungsfragen diskutiert.

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Vorwort

Am 1. und 2. März 2018 fand an der Universität Passau die Tagung „Immersiver Journalismus – Technik, Wirkung, Regulierung“ statt, deren Beiträge im vorliegenden Band versammelt sind.

Virtual Reality und Augmented Reality gelten als „das nächste große Ding“ der Mensch-Maschine-Interaktion. Die Entwicklung von Google Glass und der Erwerb von Oculus Rift durch Facebook markieren das Interesse der großen Technologiefirmen an dieser Technik.

Während in der öffentlichen Wahrnehmung etwa von „Pokémon Go“ die spielerischen Elemente im Vordergrund stehen, gibt es zunehmend und absehbar auch journalistische Anwendungen. So war es etwa das Ziel der Produzenten des „Project Syria“, die grausame Lebenswirklichkeit der syrischen Bevölkerung im Bürgerkrieg möglichst authentisch wiederzugeben. Auch bauen Videoplattformen wie YouTube, Zeitungen wie die Süddeutsche Zeitung, Fernsehsender wie Euronews und die öffentlichrechtlichen Mediatheken systematisch Bestände von 360°-Filmen auf.

Bei immersiven Medieninhalten tauchen Nutzer in eine Welt ein, in der die Grenzen von Fiktion und Wirklichkeit verschwimmen. Der Tauchgang der Rezipienten erfolgt mittels „Head-Mounted Displays“ (Virtual Reality-Brillen, Augmented Reality-Brillen) und vergleichbarer Geräte, wobei freilich das Auftauchen ohne einen Dekompressionsstopp – durch das bloße Abnehmen der Brille – erfolgen kann (*D. Habel*).

Vor allem aber die verringerte und teilweise im Bewusstsein überspielte Distanz von Betrachten und Erleben wirft Probleme und Fragen auf. Diese mangelnde Distanz ist bei journalistischen Inhalten besonders kritisch. Der Stand der Technik, die Wirkung und spezifische Gefahren sowie Regulierungsmodelle sind auf der Tagung diskutiert worden.

Ausgehend von den unterschiedlichen journalistischen Einsatzmöglichkeiten von Augmented Reality und Virtual Reality (*Thomas Seymat*) und dem „Status quo“ der Medientechnik (*Bastian Orthmann/Christian Weissig*) wird die psychologische Wirkung der neuen Medientechnik auf den Menschen dargestellt (*Andreas Mühlberger*).

Wenn journalistische Inhalte nicht nur ganz nah an den Rezipienten heranrücken, sondern es der Rezipient mittels der AR- und VR-Technik in der Hand hat, andere Einflüsse auszublenden und sich in eine visuelle Filterblase hineinzubegeben (*Christoph Neuberger*), wirft die bald auf Null reduzierte Distanz zwischen Inhalt und Rezipient medienethische Fragen in Bezug auf Medien und Nutzer auf (*Kerstin Liesem*).

Auf diese neuen Problemstellungen muss dann das Medienrecht reagieren: Die Regulierungsgeschichte zeigt, dass in Bezug auf andere Medien bereits in der Vergangenheit Medienwandel immer auch Anpassungen des Regelungsrahmens zur Folge hatte (*Karl-Heinz Ladeur*). Welche Wege aber kann der Gesetzgeber nun einschlagen, um „immersiven Journalismus“ zu regulieren? Beispielhaft werden die Zugangsregulierung (*Laura Marie Braam*), das Werberecht im Zusammenhang mit immersivem Journalismus (*Dominic Habel*) und der Jugendschutz (*Marc Liesching*) beleuchtet.

Über die Tagung haben u.a. Stud. jur. *Katrin Biermeier* und Stud. jur. *Maximilian Gerhold* (in AfP 05/2018, S. 119), Stud. jur. *Annabel Dornauer* und Stud. jur. *Christina Knoepfler* (in K&R 2018, S. IV) sowie Wiss. Mit. *Dirk Pohl* (in MMR-Aktuell, 405098), berichtet.

Auf den Eindrücken aus der Tagung basiert auch ein Blogpost des Herausgebers dieses Bandes (v. *Lewinski*, CR-online-Blog, <http://www>.

cr-online.de/blog/2018/04/09/immersiver-journalismus-virtual-reality-als-herausforderung-fuer-das-medienrecht/).

Die Tagung hätte ohne den Einsatz aller Mitarbeiter meines Lehrstuhls nicht so glatt ablaufen können. Viele Fragen der Konzeption und die Hauptlast der Organisation lagen bei meinem Assistenten, Herrn Ass. jur. *Dominic Habel*, dem deshalb der Hauptdank für das gute Gelingen der Tagung gilt.

Passau, im September 2018

Kai von Lewinski

Hands-on Immersive Journalism

360°-Videos & Immersive Journalism

Examples and Best Practices at Euronews

Thomas Seymat

Euronews is a multilingual, pan-European media launched in 1992, whose HQ is now located in the French city of Lyon. It employs over 300 journalists on staff, and has bureaux in Brussels, Budapest, and Athens as well as several correspondents throughout Europe. Euronews is now a leading publisher of immersive journalism in Europe with over 145 360°/VR reports published. This immersive journalism workflow is managed by French journalist Thomas Seymat, the company's VR editor, since February 2016. He has experience shooting 360°-videos, training journalists in and outside of Euronews, and has spoken to a dozen conferences in France and Europe.

This article will first describe the current reality of immersive journalism at Euronews, and the media's place in the nascent immersive media industry. Secondly will be addressed the challenges Euronews encountered in the process of implementing this project, and what solutions were found to overcome them. Lastly, two case studies of editorial projects will be presented, and as a conclusion, advices gathered from Euronews' experiences will be structured and presented.

I. THE CURRENT REALITY OF IMMERSIVE JOURNALISM AT EURONEWS

Conceptualized first in the autumn of 2015, Euronews immersive workflow's core concept was to regularly publish 360°-news video on Euronews' digital platforms – including its apps and social media channels, across its many languages. When imagining this workflow, it was clear that all the departments at Euronews needed to be involved, from the editorial staff, to the producers, the video editors, etc. This new medium was interesting on a journalistic side for several reasons, first and foremost because of the ability of 360°-video to put one's audience inside the news, inside the event.

This idea for this workflow was then pitched to the first round of a call for project organised by Google's Digital News Initiative (DNI) Fund, set up by the tech giant to support media innovation in Europe. Euronews was one of the projects selected¹, and was awarded part of the budget it requested in April 2016. Euronews' journalists were able to start producing immersive journalism content regularly in June 2016. However, Euronews had filmed and published a first 360°-video, shot with cameras borrowed from manufacturers.

II. EURONEWS' PLACE IN THE INDUSTRY

When the Euronews immersive journalism project was conceptualized in the Fall of 2015, VR/360°-media productions could probably be counted on the fingers of two hands. In a report² titled Virtual Reality

1 Abruflbar unter <http://aib.org.uk/google-digital-news-initiative-dni-innovation-fund-backs-euronews-immersive-journalism-project/> (date of retrieval: 11.09.2018).

2 Abruflbar unter <https://legacy.gitbook.com/book/towcenter/virtual-reality-journalism/details> (date of retrieval: 11.09.2018).

Journalism, authors from the Tow Center for Digital Journalism reviewed some of the existing experiences. In their conclusion, they suggested that “journalists should aim to use production equipment that simplifies the workflow,” and that the industry should explore different journalistic applications of VR, including “fast-turnaround VR.”

This is the space Euronews aimed at occupying. Back then, almost all existing productions were resources-intensive, highly produced, long-form documentaries, which required cumbersome post-production process and lots of time, which did not make them very reactive to news events. On the contrary, Euronews aimed at doing immersive journalism but occupying a different space on the VR spectrum, and finding ways to reduce the costs, the turnaround time, and resources needed.

Nowadays, Euronews fits in the immersive journalism industry next to news agencies Reuters and AP or media like The New York Times whose Daily 360°-editorial product³ – launched months after Euronews’ involves the daily publishing of 360°-news videos. They too rely on 360°-video, a fast turnaround, and cameras whose ease of use and flexibility makes for its moderate picture quality. On the other hand, there are still media, such as French-German media ARTE or the BBC and the Guardian in the United Kingdom which, having chosen another place on the immersive journalism spectrum, release VR experiences whose productions takes at least weeks, and are comprised of Computer Generated environments, sometimes even interactive.

III. CHALLENGES

Implementing a fast turnaround, reactive immersive journalism workflow in a multilingual, multinational newsroom was rich with challenges. It is possible to classify them in the following general categories:

3 Abruflbar unter <http://www.niemanlab.org/2016/11/the-new-york-times-is-launching-a-daily-360-degree-video-series/> (date of retrieval: 11.09.2018).

- *Innovation*: This includes such challenges as: How to introduce immersive journalism in a newsroom? How to do it during a period of rough changes both for the media industry and for Euronews which underwent a downsizing and restructuration plan in the same time? How to convince Euronews' top management?
- *Audience*: Namely how to keep and build Euronews' audience in this new medium without losing it with a failed implementation?
- *Shooting 360°*: This includes such challenges as working with a newsroom with zero previous 360°/VR-experience, and furthermore, producing nonfiction, nonscripted news videos in an emerging format.
- *Monetization*: Euronews is not a public broadcaster and needs to think how such innovative ventures impact the bottom line.

IV. SOLUTIONS

Through experimentations and iterations, Euronews was able to find workable solutions for the aforementioned challenges.

1. Innovation

The first solution to gather the momentum and support to innovate editorially at Euronews was to highlight synergies between the immersive journalism project and the strategic directions taken by Euronews as a media company. First, in 2015 a new private shareholder, Egypt billionaire tycoon Naguib Sawiris purchased a 53% stake in Euronews⁴, turning the channel away from its original public broadcaster's shareholders and making it a privately owned channel. With this new venture came renewed ambitions, especially on the editorial side, including on digital. The immersive project came at the right time, and pro-

4 Abruflbar unter <https://www.hollywoodreporter.com/news/egyptian-mogul-sawiris-buy-euronews-778229> (date of retrieval: 11.09.2018).

vided an innovative project for Euronews' top and editorial management to greenlight and foster.

Another synergy followed right after. Following the arrival of this new private majority shareholder, Euronews' on-air look was revamped, and so was its tagline, which became *All Views*. Indeed, the media hopes to be a platform⁵ free from national perspective where all views matter and which offers a diversity of viewpoints. Immersive media, especially 360°-video, literally and figuratively provides its audience with a multitude of viewpoints on an event, as the viewer is free to look where he/she wants in the spherical video.

Finally, 360°-video, as a de-intermediated media, frees the audience of much of the framing – both technical (the TV frame) and conceptual (what the journalist decides to show the audience) present in the media. This framing is often criticized and Euronews thought that immersive videos would strengthen the very factual editorial line of its journalism output.

Another key solution to innovate was a pedagogy, across the board. It started with two external training organised with Wan-Ifra in July 2016.⁶ A cross-company team of participants learned how to lead an immersive project, chose the topic that lends itself to immersive journalism, learned shooting techniques with a 360°-camera, etc.

More internal trainings were organized, in teams or individually, by the VR editor, who also evangelized inside the company and made time to answer all questions colleagues had. The support of the DNI-Fund also allowed the newsroom to make time for experimentation and via trials and errors, the VR-editor narrowed down the training time for a journalist headed to a 360°-video shoot to a 45 minutes briefing, and a to-do checklist.

5 Abrufbar unter: <http://www.euronews.com/about> (date of retrieval: 11.09.2018).

6 Abrufbar unter <http://www.wan-ifra.org/press-releases/2016/07/05/eurone-ws-selects-wan-ifra-for-training-in-immersive-journalism> (date of retrieval: 11.09.2018).

On the organisational level, innovating around immersive journalism in an existing newsroom required decisions. Euronews chose to fully integrate the workflow in the newsroom, and unlike some other media, to not build a specific dedicated team – a VR island in the newsroom. This meant that, apart from the VR-editor, no other employee of Euronews is working full time on the workflow. Teams – usually comprised of a journalist, a producer, and a video editor – coalesce around immersive video projects punctually.

This means that the implementation has involved, in one way or another, almost all the departments in Euronews. Namely: the TV and web journalists' teams, the IT and developers, the video editors, the producers, the special projects managers tasked with Euronews' sponsored programs, and last but not least, the digital products, the legal and financial departments, and the CEO's office. Euronews' immersive journalism workflow has been fully integrated in the company, in a true transversal fashion.

2. Audience

Journalism does not work in a vacuum and journalists, hoping for impactful reporting, need an audience. But immersive content is currently split among various platforms for consumption, from social media, to cheap cardboard accessories and highend Head-Mounted Displays (HMDs) worth hundreds of euros. So Euronews needed to find solution to reach, and grow, its audience with this new medium.

Here again decisions were made. Unlike some other media (such as the New York Times' NYTVR or Arte360°), Euronews did not decide to create a dedicated app to host and distribute its immersive content. The costs involved (developing, launching maintaining and adapting the app over years) of the platform, without the guarantee to gather an audience, made the return-of-investment of the app solution less than clear for the decisionmakers at Euronews. So, as a solution, it was strategically decided to instead focus on platforms where Euronews already had an audience:

- Its websites, and mobile websites, across its languages
- Its smartphone apps, across its languages

Finding a 360°-video player compatible with these distribution channels proved challenging, as the player Euronews used then was not compatible with 360°-content, and the Youtube player does not play at this time 360°-video spherically, when it is embedded in articles read on the iOS browser Safari. So it is eventually a premium video player named Omnivirt, which was selected to become the default 360°-player on Euronews' websites, mobile websites, and apps. It does not mean that Euronews neglected social media when it comes to publishing its 360°-videos. Quite the contrary. Each immersive video produced by Euronews is also posted to:

- Its Youtube channels, across its languages
- Its Facebook channels, across its languages

Similarly, refusing to build and launch a 360°-video did not mean Euronews disregarded platforms dedicated to immersive content. Euronews is uploading some of its English content to Chinese platform VeeR-TV, and has published a couple of videos on the premium VR-App Littlstar.

While these platforms only bring a fraction of the total immersive audience to Euronews, it is nonetheless interesting for the company to reach a new audience, which may not know Euronews as a TV channel or website. It is also an audience primarily interested in immersive content, and not necessarily in news content, so reaching them also has a beneficial effect in terms of brand awareness for Euronews. In addition, VeeR-TV is available in a country, China, where Youtube and Facebook are hard to log on to due to political reasons. It provides a whole new audience to Euronews.

As for traditional digital journalism, immersive journalism is not over once the video is online. It's possible to gather specific data points, or analytics, on the consumption of the video. Some of these

metrics are specific to immersive content, such as heatmaps, which track where users have scrolled inside the video. However it has to be noted that, as these platforms do not offer eye tracking yet, content creators cannot claim yet they know where the audience looks.

These metrics can ideally be gathered, analysed, and a feedback loop set up, which means analysed audience behaviour is used to inform the production and storytelling of future videos. It is however difficult and time-consuming, as the various 360°-compatible video platforms do not necessarily give access to the same kind of metrics, and each metric's definition may vary from one platform to another. Media organisations also need data-skilled staff to be able to make sense of all this new information.

3. Building Fader

While the bulk of Euronews' immersive experience deals with live-capture 360°-video, it also has dived into Computer Generated VR environment with the help of a partner. Working together with Berlin-based startup Vragments⁷, Euronews has taken part in the development and launch of a tool to help content creators easily build interactive VRstories. The tool, named Fader⁸, does not require any coding knowledge, usually a prerequisite for VR environment building. As its core, this platform uses the WebVR language, making it fully compatible for both desktop and mobile-based use, which multiplies the reach of its content.

In this partnership, backed by the second round of the Digital News Initiative Fund, while Vragments provided the technical legwork, Euronews and German international public broadcaster Deutsche Welle provided their respective journalistic and storytelling expertise, as well as users requests for features. In total, six Fader-built stories have been published on Euronews. In the same fashion that Euronews' 360°-video

7 Abrufbar unter <https://vragments.com> (date of retrieval: 11.09.2018).

8 Abrufbar unter <https://getfader.com> (date of retrieval: 11.09.2018).

workflow allowed the production of journalistic videos with a fast turnaround under a tight budget, Fader allows Euronews to introduce its audience to interactive CGI VR environment (albeit not “walk-around” or room-scale VR) with a relatively faster turnaround and for lower costs than VR projects created in other newsrooms.

4. Shooting 360°

The market for 360°-cameras is very fragmented, with giant electronic manufacturers like Samsung or Nokia competing with agile, small up-and-coming startups like Insta or Vuze. New models are announced every month, and some companies appear and close before even releasing their camera to market. In this evolving industry, cost of a camera can vary from a few hundred euros to dozens of thousands of euros for the most advanced professional cameras. As a result of such a broad range of choice among cameras, and because these cameras are still also relatively new, there is not one single perfect 360°-camera for journalism. – yet.

The camera one needs to choose depends on the criteria the project requires (see section VI. 3.). Euronews started by experimenting with several capture systems with both advantages and drawbacks:

- The Ricoh Theta S is cheap, light and simple to use, as one press of a button is all that is required to take a 360°-picture or record a 360°-video. A Ricoh proprietary software can stitch the footage on a desktop computer in a few seconds. However, it shoots in a resolution (1920×1080) that is too low once the video is projected spherically by the video player – the footage appears severely pixelated. So it is not suitable for professional journalistic use.
- Euronews also experimented with Hong Kong-based iZugar Z4XC capture system. It consists of a rig with four GoPro cameras with modified optics. If this rig is somewhat similar to other GoPro-based rigs, these specific GoPros are kitted with extra-wide fisheye lenses for additional overlap between cameras. The quality of the footage

coming from this rig can go beyond 4K, the standard for journalistic use. But shooting with it is cumbersome in a non-scripted environment because the cameras ought to be precisely calibrated, and cannot be centrally controlled (ie. one has to start every camera independently). While having only four cameras versus six in most traditional GoPro rigs makes post-production easier, it is still a very time-consuming process. File management can be a headache. In addition, the stitching process requires an expensive third-party software, and a powerful desktop computer.

Eventually, Euronews found a solution. It chose to equip its journalists with Samsung Gear 360°-camera in June 2016. It was partly due to a partnership signed with the South Korean company, but also because it is a camera capable of shooting 2840×1920 video, quasi 4K, with very easy controls, including an app for flagship Samsung phones, decent battery life, and a free proprietary software, that did not require human intervention or powerful computers.

Moreover, Euronews, when sending journalists to shoot 360°-videos, gave them a lightweight toolkit comprised of a Gear 360°-camera, a smartphone equipped with the controller app, an ultralight tripod (actually a repurposed studio lightstand thin enough to not appear in the video), and when needed, an audio recorder.

5. Monetization

As mentioned before, Euronews is since 2015 a privately-owned, profit-seeking channel. The new immersive journalism project should be part of the effort of the company, and not just a flash in the pan vanity project putting a strain on the newsroom's finances. While Google's Digital News Initiative offered a large budget to kick-start the project, it was always understood as a "seed money" of sorts, and the financial sustainability of the immersive workflow – finding new revenue streams to finance it – was a key concern from day one.

One way Euronews created revenue with immersive journalism was by signing a partnership with Samsung during the second semester of 2016.⁹ It includes on Euronews part, to exclusively use Samsung cameras to shoot 360°-video, and co-branding of these videos, and on Samsung part, to purchase ad space on Euronews, part of the profit being used to fund Euronews' immersive workflow.

In addition, 360°-video is now a new product for Euronews' sales and marketing teams when they pitch clients and prospects for branded or sponsored contents – a practice already ongoing on air and on the website. Euronews has already sold several videos to sponsors, and some of the revenue was reinvested in the production of immersive journalism. The company is however careful that these sponsors or brands do not have any editorial impact in the news content.

6. Results

In under two years, Euronews has shot and published immersive journalism from places as far as South American, the Arctic Circle, Japan, Washington DC, eastern Ukraine, or Uganda. In total, it produced over 145 VR/360°-experiences since June 2016, directly involving over 60 people, including 40 journalists, in the process.

A third of these videos has been dubbed in up to 12 languages Euronews publishes on the Web. This represents over 2500 uploads across languages and platforms – all manually processed. These videos have gathered close to 14 million views across languages and platforms.

There are also indirect results in terms of brand awareness for Euronews. It attracted national and international press coverage, in media like The New York Times, the AFP, etc.

9 Abrufbar unter <http://aib.org.uk/euronews-launches-immersive-news-reports-with-samsung-gear-360/> (date of retrieval: 11.09.2018).

V. CASE STUDIES: FRANCE & GERMANY GO TO THE POLLS

To expand more on how immersive journalism is now a storytelling tool available to Euronews' journalists to cover the news, it is worth examining the coverage of the 2017 French and German election campaigns ahead of respectively the presidential and legislative elections.

1. How: Collaboration and Innovation

In total, Euronews produced 18 portraits of voters ahead of polls, nine per campaign, shot as far as possible from the campaign trail. These episodes were shot in partnerships with local media such as France's¹⁰ La Montage, Ouest France or Radio Caraïbes and Germany's¹¹ Berliner Zeitung, Passauer Neue Presse or Weser Kurier.

These collaborations were the best way to avoid parachute journalism, the practice of sending journalists from the capital to a remote location for a couple days and having him or her report as if he/she were an expert on the region. Quite the contrary, the local journalists and media organisations Euronews worked with, with their in-depth regional knowledge, brought crucial insight for the audience into the geographic and sociological diversity at the local level, in order to better reflect the French or German electorate.

On the big picture, this collaboration also serves to introduce immersive journalism in regional newsrooms. The project was backed financially by the Google News Lab, so that local newsrooms had no financial contributions required. And, as immersive journalism is also a

10 Abrufbar unter <http://aib.org.uk/euronews-france-2017-in-360/> (date of retrieval: 11.09.2018).

11 Abrufbar unter http://www.espacedatapresse.com/fil_datapresse/consultati_on_cp.jsp?idcp=2835216 (date of retrieval: 11.09.2018).

topic the News Lab is pushing for, the project was a win-win-win situation for all parties involved.

2. Why: Immersion and Experimentation

Voter's portraits are not a new journalistic format by any means. Yet, Euronews chose to combine it with 360°-video to push the boundaries of the format, going for intimate settings rather than spectacular scenes, and to push the boundaries of its workflow as well, with several videos published every week on average.

Euronews also hoped spherical video could help the audience burst its own filter bubble.¹² Showing how these voters lived, and immersing their audience in these houses and workplaces, Euronews aimed at showing – not telling – how these people lived, and how their living conditions may affect their hopes, fears, and electoral choices. Committed to showcase a diversity of profiles and territories, from the French Caribbean island of Martinique to Schleswig-Holstein, the episode gave Euronews' audience the chance to meet (virtually) and listen to people they may not normally meet or discuss with, ever.

A lot was at stake for the two elections in France and Germany, for Europe and beyond. So Euronews decided to take these local voices to a global audience. Each episode was dubbed in five languages in addition to the original French or German. The languages were English, Italian, Spanish, German and Russian for the French project; and English, French, Russian, Turkish and Arabic for the German project.

12 Abrufbar unter <https://medium.com/google-news-lab/a-seat-at-the-table-google-news-labeuronews-talk-to-french-voters-in-360-5aee0d91ae24> (date of retrieval: 11.09.2018).

3. Results

On a purely numerical standpoint, across all languages and platforms the episodes for the German election gathered about one million views, and those for the French election gathered 1.5 million views.

It was also a first immersive journalism experience for almost all the fifteen partnering local and regional newsrooms thanks to this project and Euronews' technical support. The final product was that each episode was published on both Euronews' and the local media's digital properties, and the local media would also write an article or an editorial that Euronews would publish to give its audience context on the importance of the episode's topic on the election and on the region.

Lastly, the post-elections reaction of some of the people interviewed in the episodes were gathered and published on Euronews, in a VR environment built with Fader. In this experience, the audience could also watch again the corresponding 360°-video of the episode.

VI. HOW TO GET STARTED: TIPS AND TRICKS TO SHOOT 360° JOURNALISM

1. Get Informed

Entry costs to practice immersive journalism, while still relatively high, have dramatically decreased. This is in part due to recent evolutions such as cheaper good quality cameras and better postprocessing software. But another domain which helped reduce cost is that a lot more information on immersive journalism is available today.

Back in Autumn 2015, apart from the aforementioned Tow Center for Digital Report report, there was virtually no information online on immersive journalism, no explanation, no Do's & Don't's list. The existing documentation or tutorials were dedicated to shooting cinematic VR, in controlled environments where the action is scripted. Almost worthless information for journalists on the ground.

Thankfully, reliable information sources have emerged since, and they allow experts and newcomers alike to learn and exchange on the topic of immersive journalism. The most prominent resource of this kind is without the Medium blog of the Journalism360°project: medium.com/journalism360.

Journalism360° is supported by Google News Lab, the Knight Foundation and set up in partnership with the Online News Association. It was launched in early 2017 as an initiative of thought leaders, practitioners, and journalists dedicated to accelerating the use of immersive storytelling in news. Its primary goal¹³ is to bring people together to share knowledge in the rapidly developing fields of 360°, VR and AR journalism. It is not the only place to learn, but Journalism360° makes it a lot easier for immersive journalists to get informed, and stay in touch with the evolution of the industry.

2. Mobile is Key

One thing that has been made very clear since the first videos published by Euronews is the extent to which mobile technology and first and foremost the smartphone has become key for immersive journalism. It is worth highlighting this fact, and to illustrate it by the following examples:

- The sensors, accelerometers, and processors of the flagship smartphones of the major brands (namely Apple and Samsung) are now increasingly optimized for the consumption of immersive content, such as 360°-video, but also – more and more – of augmented reality.
- Smartphones can be used with camera-specific apps to remotely control these cameras, and even act as real-time viewfinders.
- The omnipresence of smartphones capable of playing immersive content make these devices a true gateway to immersive journalism.

13 Abrufbar unter <http://bit.ly/Journalism360> (date of retrieval: 11.09.2018).

3. Choosing the Right Camera

As mentioned in Section IV. 4., there is not one correct camera for immersive journalism; it all depends on the criteria of the project. With its experience, Euronews has identified the following characteristics between which you ought to find a balance, and make choices:

- The cost?
- The number of frame per seconds?
- The resolution of the video (should be at least 4K)?
- Is it easy to learn to use?
- Is it actually easy to use on the ground in reporting condition?
- The battery life?
- The postproduction time?
- Is the video format it shoots in compatible with your system?

Note that this does not involve instances where one would like to do live 360°-video for journalism, as criteria are different.

4. A Checklist Suggestion

Please find below a suggested checklist for journalists before heading out to shoot, based on Euronews' video production experience:

- Is it a topic worth to shoot in 360°?
- Are your batteries full?
- Do you have a stable tripod?
- How will the weather affect your shoot?
- What sort of light sources will you use?
- Is your camera set up on the correct resolution?
- Is your camera set up on the correct exposure?
- Are your lenses clean?
- Do you have your special audio equipment?
- Is the camera's horizon at level?

- At what height do you want to set your camera, and why?
- Will you move the camera, and why?
- Is there anything relevant in the camera's blindspots?
- Are your subjects of interested in the video at the right distance?