



## D2.1

# SOTA Storytelling technologies and application

(public document)

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CityStory is an ITEA 3 project from call 4 (reference 17006)

## Project Key Data

### Acronym and full-length title

Reference: 17006  
Full-length title: Citizen Storytelling  
Roadmap Challenge: Urbanisation

### Project description

The project CityStory wants to innovate through a creative, intelligent, safe, and social storytelling development environment. Do-it-yourself and do-it-with-others, around media and make it accessible for everyone. The project aims to stimulate collaboration with a co-creation and design platform to share ideas and get opinions heard. Through new modes of interactive storytelling, city touchpoints, interactive screens, innovative media recognition, and data analysis, tools that assist while filming and intelligent, and deep learning tools, the project will enable ideas to be turned into a story and valuable media output.

### Project duration & size

Size: Effort: 24.18 PY  
Costs: 2 933 930 €  
Time frame: Start: 1 September 2019  
End: 31 August 2022 (36 months)

### Coordinator

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## Consortium

Belgium	Bits Of Love
	BUUR bureau voor urbanisme
	Katholieke Universiteit Leuven
	NXP SemiConductors Belgium NV
	Studio Dott
	VRT
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## Project Acronyms

AI	Artificial Intelligence
AR	Augmented Reality
EDL	Edit Decision List
GDPR	General Data Protection Regulation
IoT	Internet of Things
ML	Machine Learning

## Introduction

**Participatory citizenship** is gaining ground in most major cities in the western world. The initiatives cover almost all social areas, from healthcare to well-being, from energy to mobility, from food to construction, from security to integration and from culture to education and finance. These self-reliant collaborations are increasingly seen as a necessary addition to managing the smart city.<sup>1 2</sup> In order to obtain a long-term commitment, we will need a formalized form of **collaboration**. The CityStory project is going to apply **a bottom-up approach** and make the story-telling and story-sharing experience easy, fun, entertaining, inspiring and rewarding to **encourage** more people sharing their day-to-day life experiences along with feedback on city developments and city social life.

CityStory wants to explore the effectiveness of **collaborative storytelling** in community building and in the fostering of bottom-up community initiatives. In this deliverable we will give an overview of the State Of The Art of the theory, explorative experiments and best practices of storytelling techniques that will be of value for the CityStory project.

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<sup>1</sup> De duurzaamheid van burgerinitiatieven. Een empirische verkenning - Malika Igalla en Ingmar van Meerkerk (The Sustainability of Citizen Initiatives. An Empirical Exploration) (2015). Bestuurswetenschappen, 2015, 69 (3): 25-53. Available at SSRN: <https://ssrn.com/abstract=2702134>

<sup>2</sup> (Homo Cooperans - Tine De Moor, 2013) Tine De Moor, Homo Cooperans Instituties voor collectieve actie en de solidaire samenleving. Oratie. Uitgesproken bij de aanvaarding van het ambt van hoogleraar Instituties voor Collectieve Actie in Historisch Perspectief, 30 augustus 2013. [https://www.ris.uu.nl/ws/files/20148613/\\_PUB\\_Homo\\_cooperans\\_NL.pdf](https://www.ris.uu.nl/ws/files/20148613/_PUB_Homo_cooperans_NL.pdf)

# 1. Storytelling as an engaging form of communication

Storytelling can be used as a method of combining facts and narratives to convey something to an audience. It is widely considered as **an activating and engaging form of communication** that enables the sharing of local knowledge and cultural values, among other aspects. Consequently, storytelling has already been applied in the context of local community participation, such as to translate an audience made drawing into an animated projection<sup>3</sup>, capture urban testimonials of neighborhood residents through audio-recordings<sup>4</sup> or historical images<sup>5 6</sup>.

Storytelling in its most basic form happens naturally by how we convey information through verbal or visual means.

*“Stories are universal – they help us to understand ourselves, our culture, and our environments.”*

– Amy Hill, Center for Digital Storytelling.

Not only are stories universal, but they are personal. People often connect better to other people than to abstract ideas or numbers and figures. Stories can create an emotional connection that improves our understanding of situations and events, encourages reflection, and allows people to discuss normally taboo subjects.<sup>7</sup>

## 2. Participatory storytelling

Participatory storytelling is a variety of approaches that engage people in creating and analyzing audio and visual media. In the digital era a participatory media practice is digital storytelling, which enables ordinary people to produce media content and to use media as a tool for **civic engagement**<sup>8</sup>, a process in which people take collective action to address issues of public concern<sup>9</sup>

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<sup>3</sup> Betty Sargeant, Justin Dwyer, and Florian “Floyd” Mueller. 2018. The Storytelling Machine: A Playful Participatory Automated System Featuring Crowd-Sourced Story Content. In Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play Companion Extended Abstracts (CHI PLAY ‘18 Extended Abstracts). Association for Computing Machinery, New York, NY, USA, 285 – 294. DOI: <http://dx.doi.org/10.1145/3270316.3272052>

<sup>4</sup> Clara Crivellaro, Alex Taylor, Vasillis Vlachokyriakos, Rob Comber, Bettina Nissen, and Peter Wright. 2016. Re-Making Places: HCI, “Community Building” and Change. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI ‘16). Association for Computing Machinery, New York, NY, USA, 2958 – 2969. DOI: <http://dx.doi.org/10.1145/2858036.2858332>

<sup>5</sup> Keith Cheverst, Helen Turner, Trien Do, and Dan Fitton. 2017. Supporting the consumption and co-authoring of locative media experiences for a rural village community: design and field trial evaluation of the SHARC2.0 framework. *Multimedia Tools and Applications* 76, 4 (2017), 5243–5274. DOI: <http://dx.doi.org/10.1007/s11042-016-3515-y>

<sup>6</sup> Trien V. Do, Keith Cheverst, and Nick Taylor. 2015. Content Analysis of a Rural Community’s Interaction with Its Cultural Heritage through a Longitudinal Display Deployment. In Proceedings of the 2015 British HCI Conference (British HCI ‘15). Association for Computing Machinery, New York, NY, USA, 46 – 55. DOI: <http://dx.doi.org/10.1145/2783446.2783567>

<sup>7</sup> <https://untilhelions.com/2015/01/04/participatory-storytelling-an-introduction/>

<sup>8</sup> Juppi, P. (2018). Engagement and Empowerment. Digital Storytelling as a Participatory Media Practice

<sup>9</sup> <https://medium.com/engagement-lab-emerson-college/community-narrative-as-a-method-for-increasing-participation-in-civic-engagement-e2bf58dbc0f9>

Usually it is **democratic**. In this context, instead of hiring trained professionals to “collect” stories with passive subjects, it allows people to **tell their own stories**. The facilitators still play a role in producing the material, but it is usually with a light touch. It does not necessarily undermine the honesty of first person stories.

It is **collaborative**. Stories can be used as a way to bring people together. Collaboration provides insights and helps shift narratives away from generalizations. Witnessing and affirming the stories told in a group can be healing and transformative.

The idea is basically to let people produce their own stories using whatever medium they prefer. This can include photos accompanied by audio, video, etc. Then, people can for example share these stories in their own communities.

Producing and sharing these stories happen often via (social media) **platforms**.

- <https://www.storycenter.org>: a platform that creates spaces for listening to and sharing stories, to help build a just and healthy world. The organisation organises public and custom workshops that provide individuals and organizations with skills and tools that support self-expression, creative practice, and community building.
- <https://www.ciatlas.org> (recent example, during COVID-19 period)  
A participatory storytelling challenge invites people to take a minute to imagine a future far beyond our current moment and share this imagination to inspire others to share their visions too. The collection will also become an enduring archive that preserves our imaginations at this current time. Participants are invited to submit their responses to the challenge via a simple form. The responses will then populate the [Atlas of the Civic Imagination](#), a creative archive of visions and aspirations. Accessible to all, this archive will then inform others to create, analyze and act. The Atlas chosen for this because of commitment to include perspectives from many places and walks of life.
- <https://www.citizenlab.co/nl/over>: a participatory platform on which citizens are able to co create their city

And last but not least different social media platforms, for example Facebook groups that are used by Critical Mass<sup>10</sup>.

## 2.1. The role of social media

The routines of social media are increasingly integrated in our daily life, including the way we consume and produce audio-visual media. While only a few years ago, user generated content mostly resided on platforms as Youtube, today, young audiences are active on TikTok, Instagram Stories and Snapchat - social media platforms that offer ready-made storytelling formats. As a result, storytelling is even more familiarized. People (especially young people) are tapping into the potential of new forms of communication via social media platforms, spreadable videos and memes, remixing the language of popular culture, and seeking to bring about (political) change.<sup>11</sup>

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<sup>10</sup> [https://en.wikipedia.org/wiki/Critical\\_Mass\\_\(cycling\)](https://en.wikipedia.org/wiki/Critical_Mass_(cycling))

<sup>11</sup> By Any Media Necessary: The New Youth Activism (Connected Youth and Digital Futures) Hardcover – May 3, 2016 by Henry Jenkins, Sangita Shresthova, Liana Gamber-Thompson, Neta Kligler-Vilenchik, Arely Zimmerman

## 2.2. The role of public space

Many different practices of urban art interventions, place-making, DIY and guerilla actions already demonstrate how local communities can be engaged by facilitating the creation of **situated content** such as stories and opinions<sup>12</sup>.



Figure 1. The InstaBooth (photo: Xavier Ho)

More technological types of **civically-motivated storytelling** include the deliberate use of custom interactive interfaces, small displays that convey data-driven narratives<sup>13</sup> (see figure 2. Polling Displays), and urban screens that enable interaction through situated snapshots<sup>14 15</sup> (figure 3, 4) or collecting opinions in a video capturing set-up<sup>16</sup> (figure 5)

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<sup>12</sup> Glenda Amayo Caldwell, Mirko Guaralda, Jared Donovan, and Markus Rittenbruch. 2016. The InstaBooth: Making Common Ground for Media Architectural Design. In Proceedings of the 3rd Conference on Media Architecture Biennale (MAB). Association for Computing Machinery, New York, NY, USA, Article Article 3, 8 pages.  
DOI: <http://dx.doi.org/10.1145/2946803.2946806>

<sup>13</sup> Sandy Claes, Jorgos Coenen, and Andrew Vande Moere. 2018. Conveying a Civic Issue through Data via Spatially Distributed Public Visualization and Polling Displays. In Proceedings of the 10th Nordic Conference on Human-Computer Interaction (NordiCHI '18). Association for Computing Machinery, New York, NY, USA, 597 – 608.  
DOI: <http://dx.doi.org/10.1145/3240167.3240206>

<sup>14</sup> Simo Hosio, Richard Harper, Kenton O'Hara, Jorge Goncalves, and Vassilis Kostakos. 2015. Life through the Lens: A Qualitative Investigation of Human Behaviour with an Urban Photography Service. In Proceedings of the 2015 British HCI Conference (British HCI '15). Association for Computing Machinery, New York, NY, USA, 157 – 164.  
DOI: <http://dx.doi.org/10.1145/2783446.2783577>

<sup>15</sup> Nemanja Memarovic, Ava Fatah gen Schieck, Holger M Schnädelbach, Efstathia Kostopoulou, Steve North, and Lei Ye. 2015. Capture the Moment: In the Wild Longitudinal Case Study of Situated Snapshots Captured Through an Urban Screen in a Community Setting. In Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing. ACM, New York, NY, USA, 242–253.

<sup>16</sup> <https://innovatie.vrt.be/en/article/vrt-nws-journalist-vranckx-interviews-european-voters-with-mobile-chat-box-from-vrt-innovation>



Figure 2. Polling Displays



Figure 3. The four phases of the photography service. From top-left: instructions and description; example photos with captions; live webcam stream and camera button with countdown for taking snapshots; virtual keyboard for typing with a button for uploading the result to an online gallery.



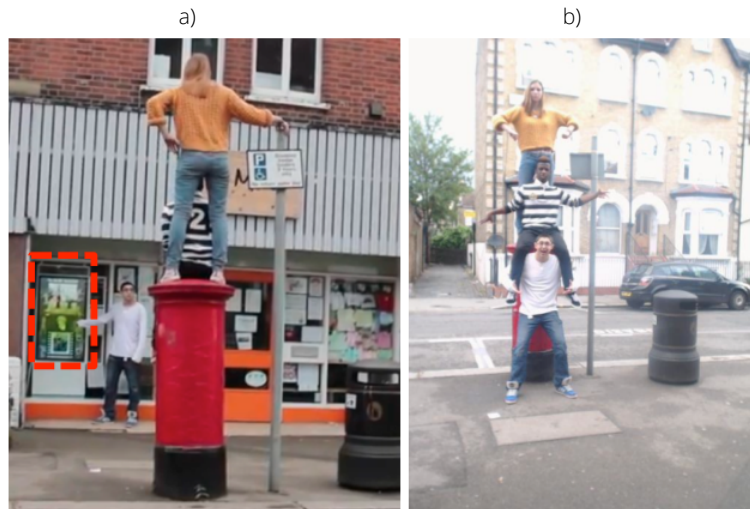


Figure 4. Passers-by interacting with the Moment Machine application (red rectangle) and capturing a moment/ image: In a) we see them interacting capture the image and b) the resulting image, a few seconds allow to pose.



Figure 5. Capturing opinions in "chat box"

### 2.3. As a contribution for public broadcasters

Public storytelling is also considered by **public broadcasters** as a means of meaningful engagement with local communities. The use of situated media, together with local citizens' current use of online social networks for hyperlocal storytelling<sup>17</sup>, appears as a promising way towards stronger citizen engagement in public storytelling.

Today, consumers of traditional media have many more tools than before for interacting with that media, **making their voice heard**, circulating media content within their networks and producing their own content. Audiences are now used to not only receive content, but to produce, circulate

<sup>17</sup>Scott Mcquire. 2010. Rethinking media events: large screens, public space broadcasting and beyond. *New Media & Society* 12, 4 (2010), 567–582.

and share content<sup>18</sup>. A participatory turn is happening in the way audiences engage with media content and media companies. For public service media, user generated content contributes to their universal appeal as it **allows them to connect to the community at large**<sup>19</sup>. At BBC, for example, user-generated content projects facilitate an increased representation of its public, while building social capital amongst its participants<sup>20 21</sup>. Also at the Flemish public service media company, VRT, TV shows that incorporate user generated video trigger a prolonged engagement with its participant<sup>22</sup>.

### 3. Existing storytelling tools

Given the great variety of technologies nowadays a lot of digital co-creation tooling continuously emerge and are being developed. The following list is **a selection of tools and platforms to co-create content that are easy to use for non-professional storytellers.**

- **myBlogU**: Platform that lets you crowdsource your epic content (from idea to implementation) and get cited for your expertise and digital assets. (<https://myblogu.com/>)
- **Medium**: a blog platform for longreads. If you bring the story in an interesting manner and differ with different kinds of media, longreads do work on a digital platform. (<http://www.medium.com>)
- **Storymap**: a free tool that help you tell stories on the web that highlight the locations of a series of events. You can add pictures, videos and text on a map, so you can connect the story parts by walking. (<https://storymap.knightlab.com>)
- **Timeline JS**: an open-source tool that enables anyone to build visually rich, interactive timelines. (<http://timelinejs.knightlab.com>)
- **Google My Maps**: Tell a story from a city festival or a building project by adding marking signs, colours, lines, etc.
- **Infogram**: visualize data on a visual manner. Make interactive graphics. (<http://www.infogram.com/>)
- **Storybird**: platform with challenges to boost your writing skills. (<https://storybird.com/>)
- **Stories**: Instagram, Snapchat. Try to think of a scenario before you begin. Via stories it's also easy to participate: you can easily react on stories via messages.

#### 3.1. Existing tools that are applicable in context of city development

- **Lomap**: a smartphone application and photography tool children and youngsters could give their opinion on their neighbourhood or city in a fun intuitive manner. They are able to add

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<sup>18</sup> Jenkins, H., S. Ford, and J. Green (2013). *Spreadable media: Creating value and meaning in a networked culture*. New York: NYU Press.

<sup>19</sup> Van Dijk, J., & Poell, T. (2015). Making public television social? Public service broadcasting and the challenges of social media. *Television & New Media*, 16(2), 148-164.

<sup>20</sup> Hutchinson, J. (2014). Extending the Public Service Remit through ABC Pool. In: G.F. Lowe and F. Martin (eds.), *The Value of Public Service Media*. Göteborg: Nordicom, 223-243.

<sup>21</sup> Bonini, T. (2017). The Participatory Turn in public service media. *Public Service Media Renewal: Adaptation to Digital Network Challenges*, Peter Lang, 101-116.

<sup>22</sup> Claes, S., Wijnants, M., Libot, C., & Bauwens, R. (2019, September). # TheDay: Triggering User Generated Videos in Participatory Media Productions. In IFIP Conference on Human-Computer Interaction (pp. 409-417). Springer, Cham.

colour codes and icons. What do they think about the youth houses' neighbourhood for example? (<https://www.lomap.be>)

- Picto-play is a method for letting children and youngster design their own public playground (<https://k-s.be/inspraak-participatie/picto-play-10-knip-en-plak-het-speelweefsel-bij-mekaar/picto-play-10-catalogus-en-handleiding/>)
- De Noord-Zuidverbinding aan het woord (Dutch): collect stories about the environment of the project by going on a biking trip with inhabitants. Mission: gather as much context so the design team will be able to make a suitable design. (<https://www.noordzuidlimburg.be/verhalen>)

## 3.2. Existing audio and video tools

- Power Director: Smartphone editing tool to create every type of video ([https://play.google.com/store/apps/details?id=com.cyberlink.powerdirector.DRA140225\\_01&hl=nl](https://play.google.com/store/apps/details?id=com.cyberlink.powerdirector.DRA140225_01&hl=nl) and <https://apps.apple.com/app/powerdirector-video-editor-app/id1473574597>)
- Filmora GO: A pretty powerful video editor application, which will not stamp a watermark or place a time limit on your clip. (<https://filmora.wondershare.com/filmorago-video-editing-app/>)
- iMovie: video editing tool Apple (<https://itunes.apple.com/us/app/imovie/id377298193>)
- Spreaker: If you want to tell your story via audio, podcast can be an interesting form. Spreaker is a basic tool via which you can record audio, edit and publish audio. (<https://www.spreaker.com/broadcast>)

## 3.3. Existing tools for the creation and manipulation of pictures and photos

- Pixlr: basic photo adjustments (<http://www.pixlr.com/>)
- Canva: start with templates (e.g for right dimensions for Twitter, Facebook etc.) (<https://www.canva.com>)
- Snapseed > Snapseed (iOS | [Android](#))
- Lay-Out: tell your story via a combination of different pictures. (e.g. a comic book) (iOS | [Android](#))
- Piktochart: tool for creating infographics (<http://www.piktochart.com>)

## Conclusion

CityStory wants to create an **intelligent, creative, safe, and social storytelling development environment**. We want to attract everyone, including silent voices, to express their opinion by telling stories.

This deliverable describes valuable research that is already been done on storytelling techniques (like participatory storytelling). These techniques **give people a voice to express their opinion**. The deliverable also gives an overview of some existing tools and platforms to facilitate this kind of storytelling. We will use this knowledge as a base to further investigate and apply it during the CityStory project and start off with creating a Storytelling Toolkit which should facilitate people in telling their stories.

