HOW LIVE STREAMING CHURCH SERVICES PROMOTES SOCIAL PARTICIPATION IN RURAL AREAS

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Insights

- We report on a qualitative study on the development of a live-streaming system for Sunday mass in a small rural community.
- Methodologically, the study examines the issues around co-creation processes with a largely elderly population.
- The study further examines the specific features of local community practices, notably those of religious observance.

IMAGE BY DAVID CARILLET

In 2000, Robert Putnam's *Bowling Alone* was published. It represented the culmination of a trend in community studies, which identified a decline in the solidarities that define "community" [1]. Of interest is the fact that Putnam's argument is founded in part on an analysis of religious behavior. Putnam was clear that community was in decline and that the networks that define it would disappear. At much the same time, however, a wholly different trajectory was evident in studies of online communities, where different kinds of networks were seen to be growing [2]. Such discussions matter, above all, at the point where the online and offline intersect. That is, there is both a challenge to and an opportunity for the maintenance of physically located communities via online support [3]. One such opportunity is presented by live streaming, used by millions every day. Platforms like Twitch.tv (https://www.twitch.tv/), with a number of functions to foster not only community building but also the interaction between the users and streamers, are developing rapidly [4,5].

CHALLENGES AND OPPORTUNITIES IN RURAL AREAS

Our study concerns the possibilities presented by online streaming for the maintenance of rural community solidarities. Rural communities

in Germany are confronted with multilayered problems. Demographic changes mean that young people move away and older adults predominate. This is compounded by the lack of local suppliers and public transportation, fewer pubs and restaurants, a shortage of doctors and religious officials, and limited or nonexistent Internet connection. Fewer priests and doctors, of course, means that the workload of those who are present goes up; this is consequential for church communities, which remain very significant in rural life.

The village of Elsoff, in the district Siegen-Wittgenstein, has seen a decline in population from more than 900 in the 1960s to 600 in 2018. Compounding the population decline is a low population density of some 70 people per square kilometer.

The factors we mention above mean increasing difficulty in maintaining village life and infrastructure. At the same time, the number of older adults is increasing. Other than their age, this population does not form a homogeneous group. Some seniors are active and largely autonomous, but there is also an increasing number who are dependent on care and support services. The village is dependent on volunteer associations, most of whose members are older themselves. Church communities are particularly strongly represented. An important lifeline is the community bus, driven by volunteers. This is vital for religious observance, since Sunday mass or other masses will usually take place outside one's village—one priest has to lead mass for seven villages in three chapels.

Digitization can be a solution to support these people, but the use of digital technology in Elsoff is possible to only a limited extent, due to poorly developed infrastructure and the limited availability of a fast Internet connection (fiberoptic as well as mobile Internet). In addition, the restricted availability of modern technology is paralleled by little experience in, or understanding of, technologies such as smartphones and tablets, or missing Internet access at home.

Figure 1. Streaming box, camera, and wireless microphone.

Figure 2. 10-meter cable with Internet USB stick.

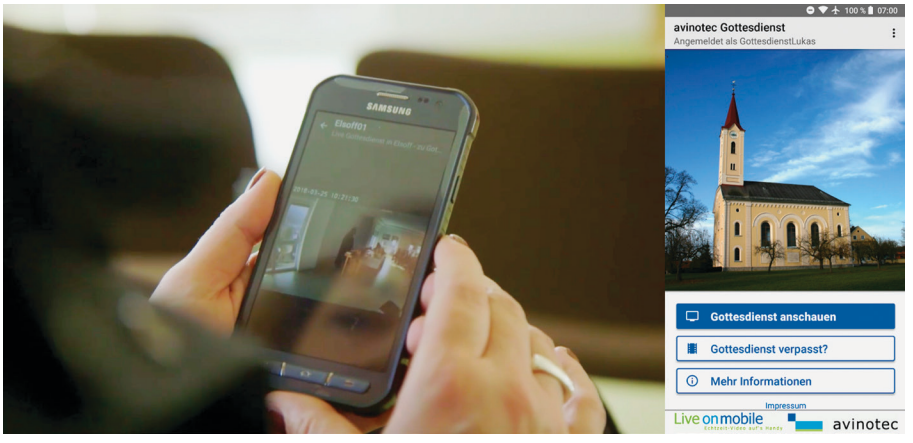

Figure 3. Streaming app interface in full screen on the smartphone.

LIVE STREAMING AS A BRIDGE TO SOCIETY

Since the church community is one of the most important communities in Elsoff, an opportunity existed, even in the face of the existing challenges, to enable older citizens to participate socially in Sunday mass. With the cooperation of local actors, a live-stream system for the transmission of a Sunday mass was implemented as a promising way to overcome these issues, bring people into contact with modern technologies, and foster autonomy and social participation. A church live-streaming system not only offers meaningful everyday incentives to use new technologies but also reduces the distance for nonmobile or physically handicapped people. For the development and implementation of the streaming service, two levels were considered: hardware and software.

First, the system needed to be easily transportable since it would be used in different locations each week. Second, the poor and highly variable Internet signal meant that a solution

had to be found that managed different providers and that could receive signals through the thick church walls. Moreover, the camera and microphone had to be high resolution, but small enough not to disturb visitors. With these requirements in mind, we put together a portable box in which a microprocessor was installed to transmit the stream and into which all connections, including cables, the camera with a tripod, the wireless microphone, and the SIM card USB Dongle, could be inserted (Figure 1). A single power connection is required to run the complete system. In addition, the box can be easily and safely hidden. With a long cable, the camera can be placed on a pre-tested spot. To allow viewers to see as much as possible, a wide-angle lens was used. Due to the missing WLAN, a 10-meter-long USB cable was used with a USB SIM card dongle (Figure 2). This makes it easier to determine the correct position in the room if connection problems occur with the mobile phone provider. A wireless headset is used to capture the priest's audio. A special feature of the system is the possibility to transmit a stream, including audio, despite a slow data connection like EDGE. This overcomes the Internet problem.

At the software level, a website and a customized app for Android users were developed (Figure 3). The possibility to call the service is communicated by both the priest and the community nurse. It is also announced as a link in the parish newsletter. People mainly use the app developed for Android on their smartphones and tablets. The design and functions have been adapted to the needs of older citizens. The most important aspect was usability, so church members can find information about the next location for the mass and find old recorded streams. The stream can be viewed at any time (Sunday is a time of heavy Internet use) and in full-screen mode if desired (Figure 4). Furthermore, a chat was included, so members of the community have the opportunity to express their opinions and make suggestions or give feedback about the content and quality of the video.

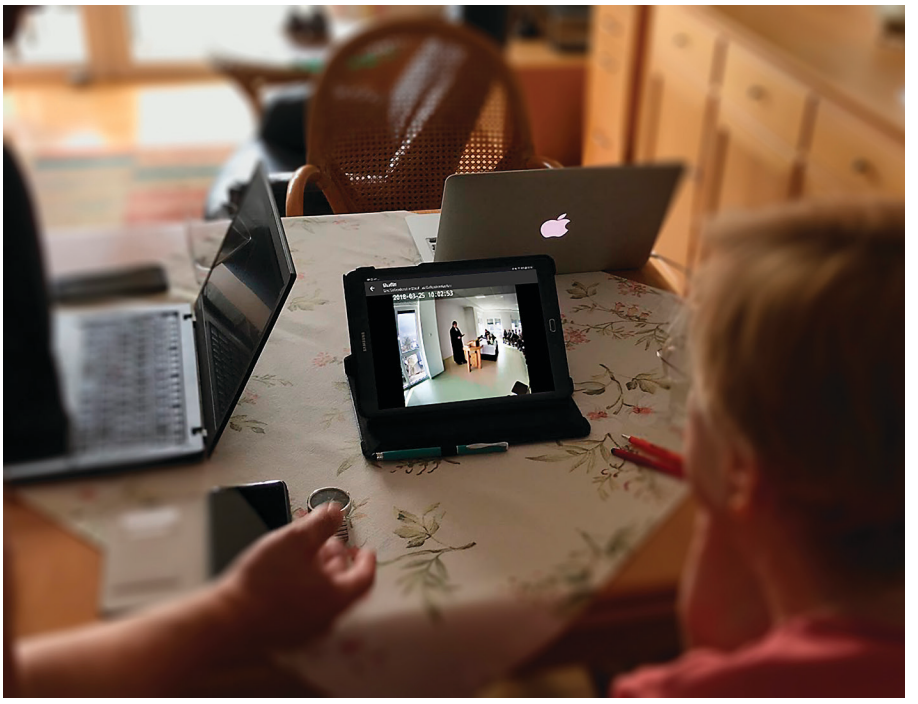

Figure 4. Streaming app tested on the tablet.

Figure 5. Participants of the appropriation cafes and future workshop.

PARTICIPATORY DESIGN IN ELSOFF

The design and implementation of the church streaming system necessitated cooperation with various local actors. "Door openers," such as the priest and community nurse, along with 10 other stakeholders, including eight older villagers ages 67 to 85 and two other local actors, were recruited. Semi-structured interviews were conducted in a preliminary study in which the idea of the church stream was discussed as part of general reflections on how social participation and interaction between citizens could be supported. The special thing about our development and implementation of the church stream is the participative IT design with older, rather nontechnical people. Participatory design projects face the challenge of building bridges between lofty visions and the participants' experience of everyday life. It is necessary to establish a design space between researchers and older project participants in order to enable collaborative design work. For this reason, an important basis for the continuous collaboration was "appropriation cafes," sometimes organized as experience-based participatory design workshops [6,7,8].

These workshops focusing on learning and technology acquisition for older adults, combined with design

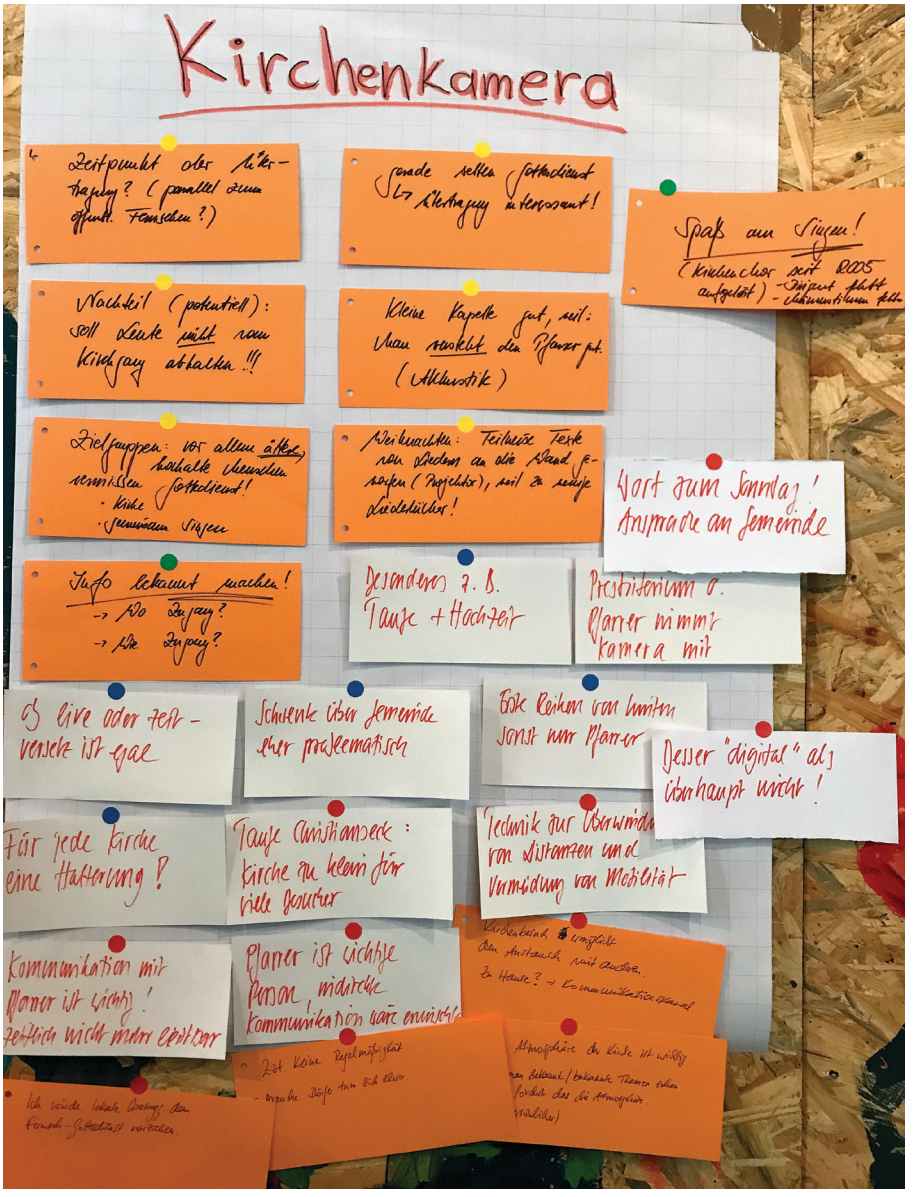

Figure 6. Results of the future workshop about the church camera.

workshops, were based on the Living Lab approach [6]. Workshops with a senior group were conducted over two years, every two weeks for two to two and a half hours (24 meetings in all) (Figure 5). All sessions were thematically prepared by the research team and documented in the form of field protocols. Tablet PCs were handed out—along with *Kaffee und Kuchen*, the traditionally German pairing of coffee and cake—to demonstrate the general possibilities of Internet-supported communication, interaction, and information. The aim was to create a common mental space of opportunity and to introduce inexperienced people to the world of technology and the Internet. Over several months, additional devices such as smartwatches and smartphones were introduced. In addition to these regular workshops with older adults, other formats such as focus groups and a future workshop were conducted in the appropriation cafes. In the future workshop, we discussed with the participants possible solutions for a "smart village" [8]. The church camera also came up as an idea. In various small groups, the participants from inside and outside Elsoff talked about the possibility of watching the Sunday mass via live stream. Participants were by now more used to tablets and smartphones through the appropriation cafes. Ideas (Figure 6) came together as to what such a stream could look like, what would be important for older people, how and in what ways other people in the area could benefit, and why residents are reluctant to travel to other villages. The results were used for the development of the functional prototype.

In the later project phase, first the website and then the app were presented to the participants of the appropriation cafes in two focus groups. Among other things, design and functional questions were clarified. During the two focus-group sessions, the participants were able to test the first live stream and discuss some of the comments and problems mentioned in the chat. The developers of the app reviewed the results of the focus groups. At this point, a youth association from Elsoff got to work on the system, with the goal of younger generations ultimately establishing more contact with the parish and thus with the older villagers through technology. Another goal was to reduce the burden on the priest and strengthen the church community. Three main findings result from the work.

Everyday life and solidarity with the community. First, our long-term qualitative work built a picture of the way in which traditional features of community life still flourished here. The importance of family cohesion, the existence of networks of voluntary associations, and the role of the church were clear. Many of our participants are involved in more than one club, for example, a women's club and a shooting club. Mutual support was regarded as crucial; for instance, two participants are drivers of the church municipality bus. The participants, although they did not know one another, also supported each other by driving to the user cafes in the community room. Participants who lived farther away or did not have a car got a ride from other participants from the group. Even so, there was an unwillingness to extend

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this community feeling to visiting another chapel. Very personal factors intervened, including an aversion to strangers, lack of unfamiliarity with local circumstances, and even dislike of other chapels' smells. One's own chapel was regarded as much more "beautiful" and somehow more "special." The transmission of Sunday mass was considered very important, so much so that participants continued to "dress appropriately" for mass even while sitting at home.

Dealing with and relationship to modern technologies. Second, there were important lessons to be learned about familiarity with new technology. The importance of a trustful relationship in facilitating learning over a fairly long period of time became obvious. It was clear that participants with less technical experience who were initially very skeptical about new Internet-enabled devices such as smartphones and tablets felt more positive when such devices were made available and training was given.

Participants learned how such devices support or even improve communication in the family and community. Having said that, age and isolation threw up another barrier in that many apps and names are in English, which, we must all remember, is not universally spoken. Similarly, the inward-facing nature of rural communities meant that, other than the church streaming service, use was mainly confined to communication with family and friends.

Participant-researcher relationship. Third, although we were able to identify and maintain a relationship with a group of participants, others remained difficult to approach. Through long-term cooperation with our participants, we have learned that it is not always enough to provide the technology and that there are many hard-to-reach people who are afraid of working with university staff, feel awkward or embarrassed, or do not want physical disability or other age-related elements to become more visible. By building trust, we have been able to win more key people over to support us in our project. This is particularly key in ensuring the sustainability of the system and to expand the church camera in the future for those hard-to-reach people.

CONCLUSION

We began this article by referring to some studies of community, studies that show the importance of family, community networks, and social solidarity. These factors remain extremely relevant to the appropriation and use of new technology. A virtual community in a context such as this relies on some very traditional elements. We were successful, to some extent, in generating interest and capability among some older villagers. Others remained hard to reach. What became clear was that our most successful application was one that was thoroughly embedded in the everyday behavior of the local community and, moreover, one that sustained and supported the moral universe of its citizens. Our live-streaming service, developed in cooperation with the elderly villagers and other stakeholders in rural Elsoff, needed to reflect both technical requirements and community needs. The technical requirements included the need for the technology to be easily set up, transported, and dismantled; to be usable across several networks; and to be unobtrusive in the church. It required the mobilization of a group of volunteers to do the necessary work. Our participatory research, however, demonstrated something more important. The value of new technology to a rural community of this kind required a close understanding of the "moral glue" that holds such communities together. In this instance, it was the continued adherence of an elderly population, most of whom had lived in this village for many years—as had their families before them—to the local church that was significant.

ENDNOTES

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