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# Video-Ethnography During Covid-19 and Beyond: Generating User Foresights in a Virtual World

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This is a commentary on the *Technological Forecasting and Social Change* article "*From user insights to foresights: Applying video-based ethnographic narratives and user innovation in NPD*".

## Introduction

Our study on the use of video video-based ethnographic narratives and user innovation (Sakellariou et al. 2020) was conducted and published in this journal prior to the Covid-19 pandemic. That was at a time when close interaction with customers and consumers for market research purposes was common and taken for granted. Things are now very different. This means that observing and interviewing customers in-person is currently impossible and the utility and advantages of video-based ethnographic narratives need to be reconsidered. Video-based ethnographic narratives are a novel and enhanced form of market research that is powerful at generating *user foresights*. These are “understandings of users’ future needs (i.e. future product features and benefits)” (Sakellariou et al. 2020, p1) as opposed to *user insights*, needs that are associated with current product features and benefits. The importance of methods that generate foresights has been stressed (Schweitzer et al., 2019). How foresights can be generated is an important topic. Therefore, this article will discuss how some of the advantages of video-based ethnographic narratives can still be leveraged during and post Covid-19 times.

The use of video-recordings in observing small numbers of customers in their own context, for example in their homes, reveals novel and detailed understandings and takes what is termed an *emic* perspective (which considers that phenomena need to be closely studied, placing emphasis on the customer’s own views and understanding). The adoption of a systematic coding for analysis can then result in the identification of key patterns in customer behaviour, and relationships between antecedents and outcomes. The findings based on observing small numbers of customers can then be verified in wider surveys, which adopt an *emic* perspective (which considers that hypotheses about phenomena can be studied objectively from a distance, such as through surveys). The *emic* and *etic* perspectives can be combined. Thus, in contrast to traditional market research, video-based ethnographic narratives can generate user foresights, that can inspire future-oriented innovation. Compared to previous approaches to ethnographic market research that rely on the generation of a mass of ambiguous observational data (Crotty, 1998) which have been criticized for being complicated to apply and difficult to analyze, video-based ethnographic narratives generate user foresights in an organized, presentable, and actionable form (Sakellariou, et al., 2020). A key question is whether the method can still be used, following the unprecedented events of the Covid-19 pandemic.

This commentary therefore discusses the relevance of the method, as published, in the current conditions. Firstly, it discusses the impact of the Covid-19 crisis on innovation management in companies. Secondly, it focuses on the differences and opportunities for

applying the method during the current pandemic, and the contributions that video-based narratives can specifically make in the new innovation context. Thirdly, it discusses the implications for organizations and governments. Finally, it concludes by reflecting on the future outlook of the video-based ethnographic narratives in the post Covid-19 era.

### **Innovation in the Covid-19 crisis**

The global scale of the Covid-19 pandemic, unprecedented in recent centuries, has transformed the way governments, organizations and people work to innovate. Before the pandemic, innovation used to be a resource-intensive complex process with (often) relatively slow decision-making (Cooper, 2008; 2009), based around prototyping and iteration, leading to products that create a competitive advantage (Abetti, 2000). The Covid-19 outbreak has drastically changed many dimensions of innovation (Table 1), including the *process* (from idea generation to go to market); the *place* (infrastructures and emerging technologies); the *product* (outcomes with physical or non-physical boundaries) and the *people* (user needs and user needs' elicitation methods).

*Process.* In the Covid-19 era, innovation evolved fast and has become even more resource-constrained. The pressing need for economic survival has forced many organizations to design and implement immediate responses, thus reducing the typical time from idea generation to market (Ebersberger and Kuckertz, 2021; Van Krogh, 2020). The stages in the innovation process are being compressed and the decision-making for progressing from one stage to another has been reduced to the bare minimum (Dzau and Balatbat, 2020). For example, Issinova, an Italian 3D printing company in Italy, re-designed, printed (manufactured) and distributed crucial valves for ventilators in just 24 hours, as the pandemic surged in northern Italy (Corsini et al., 2020). Iterations, testing and flexibility are critical antecedents for innovation speed in uncertain environments (Eisenhardt and Tabrizi, 1995). Similarly, as governments have been faced with the impact of Covid-19, they employed a range of approaches to overturn longstanding bureaucratic barriers that would delay the time to market (Hale, 2020). This is the example of the UK government, which assigned to a venture capitalist with extensive experience in the pharmaceutical sector, to create and chair the 'Vaccine Taskforce'. This TaskForce, in an unprecedented move, pre-ordered 407 million vaccines of six different vaccines before these had passed regulatory approval. The most impressive innovation, however, has been the development of the vaccines themselves. In less than nine months from the identification of the pathogen, the vaccine has been designed, undergone clinical trials, and production has been scaled-up at unprecedented rates (Bingham, 2021). In the low and middle-income countries, innovations during the Covid-19 pandemic most often take place with the minimal use of resources since they are designed for environments with poor infrastructures (Corsini et al., 2020). In the face of resource constraints, the innovation process can become more creative and resourceful (Harris et al., 2020).

There are still more questions than answers regarding the current and long-term impact of the disease (Callaway, 2020). As the environment changes constantly, the innovation goals are re-defined and iterative cycles of experimentation occur (Abi Younes et al., 2020). Organizations and governments have been trying to make sense of this vastly ambiguous situation and to re-focus their innovation efforts accordingly. The pharma industry, for example, is now dealing with the challenge of how to develop protection against up to potentially 4,000 mutations of the virus (Beeley, 2020). It is evident that this crisis is triggering many organizations to be in a state of constant urgency for innovation (Lee and Trimi, 2021).

*Place.* The pandemic has also drastically changed the environment in which idea generation, prototyping, and iterations happen. The enforcement of lockdowns and social

distancing has led to social isolation, home confinement, and remote working (Gostin et al., 2020). Most innovation teams are now working mainly virtually, with physical presence (albeit with social distancing) severely limited (Jocevski, 2020). It has been widely acknowledged that physical distance (geographical or socially imposed) may suppress creativity (e.g. Magadley and Birdi, 2009). During the Covid-19 crisis, physical distance is being coupled with digital proximity and a new hybrid space for creativity has emerged.

This was made possible because of the exponential growth in the adoption of video communication platforms among innovation practitioners (Vermicelli et al., 2020). New technologies have bridged geographical distances and have enabled borderless connectivity for research and development across geographically dispersed functions and among organizations and governments (Waizenegger et al., 2020). Consider for example, Market Asylum in India which managed to create and distribute 1 million face shields by sharing virtually instructional videos of their designs and production lines with scientific labs across the country (Corsini et al., 2020). There is also the case of the pharma organizations that fostered AI-assisted clinical trials and virtual R&D webcasts for vaccine innovations (Vaishya et al., 2020).

Digital technologies (AI, big data, etc.) are being experimented with and quickly adopted by organizations and governments as a means to accelerate their infrastructure transformation (Brem et al., 2021; Abdel-Basset et al., 2021). An illustrative example is that of the Anglo-Dutch multinational Unilever, which transformed within a few months its old factory in China into a digital end-to-end ecosystem of operations using AI and allowing work from home during the lockdown (Perry, 2020). Big data have also been generated from multiple sources which include mobile and IoT devices, online social graphs and public data of various types including text or video.

*Product.* Notably, the pandemic has also impacted the types of innovation outcomes generated by the innovation process. Many of such innovations have been focused on the short term rather than envisioning future opportunities (Heinonen and Strandvik, 2020). Breakthroughs are no longer the ultimate innovation priority. This is because breakthroughs require the investment of increased amount of time (Abetti, 2000), which is currently not available as organizations strive to survive. Most importantly, the priority of innovation now lies on benefiting humanity by creating health and social value (Buheji and Ahmed, 2020).

Innovation outcomes most often involve repurposed existing solutions (Björklund, et al., 2020; Dube, et al, 2020) such as the budesonide inhaler that has been widely prescribed for asthma treatment and it has been recently considered as a first treatment in the early stages of the Covid infection (Halpin et al., 2020). Organizations have repurposed production and R&D capabilities, such as the French luxury goods multinational, Luis Vuitton/LVMH: the company has repurposed its manufacturing from perfume to hand-sanitizer for French hospitals (Mone, 2020). Another example is the Taiwan-based Foxconn, which manufactures iPhones for Apple, but started producing surgical masks within a month of the outbreak of the pandemic (BBC, 2020). Similarly, many other organizations have pivoted extremely fast, to respond to the crisis (Guillen, 2020; Shepherd, 2020). For example, the Israel-based company Vertical Field has created urban vertical gardens, located in supermarket car parks in the US, so that customers can buy fresh food while maintaining social distancing (Salomon, 2021).

The unprecedented speed of developments has occasionally led to failures but these have been replaced or repurposed equally fast (Amankwah et al., 2020; Dai et al., 2020). An example is the US vacation rentals company Airbnb, which augmented its failing services with long-term bookings and now is expanding into a full-range lifestyle platform where hosts could offer online lockdown friendly events, such as meditation, virtual visits, dancing and cooking lessons among others (Guillen, 2020).

*People.* As there has not been a clear pathway to normality, continuous disruption is the new norm. Current health, social, and economic problems may be replaced swiftly by novel ones (Suppawittaya et al., 2020). User needs are changing too (Sheth, 2020). A recent McKinsey report (2020) showed that one of the most significant shifts in the past year has been in the needs and expectations of users (e.g. their hygiene awareness). In the current rapidly changing environment, companies are facing existential threats and are having to develop unique solutions; similarly, users face situations that are changing their needs and priorities (Cankurtarana and Beverland, 2020). On the one hand, there is immense focus on short-term information such as daily Covid-19 cases or vaccination side effects (Menni et al., 2020) but, on the other hand, it is important to identify users' implicit shifting needs (Fiaidhi, 2020; Mason et al., 2020).

Such needs and problems often emerge within a particular organizational and governmental context. Immersion in a user's context is a quick approach to understand defining the users' future needs from their own perspective. This is illustrated by Vanderbilt University in the US, which designed a new ventilator in collaboration with its users, the physicians from the institution's own medical center. By observing these physicians using early prototypes, the University's researchers integrated essential features, such as pressure sensors and alarms (Von Krogh et al., 2020). Contextual immersion during this pandemic has been obstructed, however; 55% of the communication of user emotions and attitudes is non-verbal (Mehrabian, 1981) and physical distancing, face masks, and personal protective equipment have severely inhibited the communication of facial expressions and body movements. In this environment, the user's non-verbal communication has become difficult to capture and some user needs are less easy to identify (Fiaidhi, 2020).

**Table 1:** Innovation in Covid-19

<b>Innovation</b>		<b>New characteristics</b>	<b>Key Citations</b>
<i>Process</i>	<i>from idea generation to go to market</i>	Ultrafast Relentlessly evolving Resource-constrained	Ebersberger and Kuckertz, 2021; Von Krogh et al., 2020 Lee and Trimi, 2021; Abi Younes et al., 2020 Harris et al., 2020; Corsini et al., 2020
<i>Place</i>	<i>infrastructures</i>	Mainly digital (proximity); Partly physical (distance)	Jocevski, M., 2020
	<i>emerging technologies</i>	Connectivity catalysts Transformation accelerators	Waizenegger et al, 2020; Vermicelli et al., 2020 Brem et al., 2021; Abdel-Basset et al., 2021
<i>Product</i>	<i>outcomes with physical or non-physical boundaries</i>	Repurposed solutions Ultrafast pivots  Agile failures	Dube, et al, 2020; Björklund, et al., 2020 Guillen, 2020; Shepherd, 2020; Heinonen and Strandvik, 2020 Amankwah et al, 2020; Dai et al., 2020
	<i>scope</i>	Health/economic/social	Buheji and Ahmed, 2020
<i>People</i>	<i>user needs</i>	Rapidly changing problems Implicit needs Shift in user needs	Sheth, 2020; Suppawittaya et al., 2020 Fiaidhi, 2020 Mason et al., 2020
	<i>user needs' elicitation</i>	In real time (Obstructed) contextual immersion	Lee and Trimi, 2021; Menni et al., 2020 Cankurtarana and Beverlandb, 2020

### **Covid-19: Video ethnographic narratives for innovation**

Prior to Covid-19, video-based ethnographic narratives were useful in the early stages of

product development, as they captured user behaviour in their typical physical environment and this led to ideas for future products. Despite its associated challenges, the current pandemic has also opened new opportunities to enhance the value of the method and its contribution on innovation (Table 2).

*Differences & Opportunities.* The intimacy with the end user through contextual immersion is crucial but, due to the pandemic, face-to-face communication and close physical proximity are prohibited; video-ethnographers risk of spreading the disease or becoming infected during data collection (Fine and Abramson, 2020). Face masks and other protective equipment are important safety measures, but they may obstruct the elicitation of rich data on non-verbal communication and implicit behaviours. Because of the negative impact the pandemic has had on people's physical and mental health, consumers may not be willing in participating in video-ethnographic studies. Video-ethnographic data collection has become therefore a daunting task.

New technologies such as wearable video cameras and selfie sticks (Brown and Lackova, 2020) provide users with a democratized way to create self-digital narratives; they can then share their videos with the ethnographer in real time with online or mobile applications. In the safety of the virtual world, users may not wear masks or personal protective equipment and therefore their subtle emotional unconscious reactions can be captured visually and permanently. For example, a Covid-tested positive medical student produced a video diary on her lockdown experience in the student halls and a mother created and shared a video diary to demonstrate daily practices during a home-schooling day (BBC, February 2021; October 2020). Such means of data collection indicate that far from being impossible, video-based narratives are viable and can encourage users to reflect on their future needs.

Technological advancements in communication and social media platforms have enabled global connectivity, which can provide fast and easy access to dispersed consumer communities (e.g. Brem, et al., 2019; Tirabeni and Soderquist, 2018; Bilgram et al., 2008). During the pandemic, these communities can offer video-based ethnographers recruitment and engagement opportunities, across a wider population of users and stakeholders. Recruitment can now be very broad: for example, covering populations that have not been consulted widely in the past, such as users with disabilities and minority groups or hidden networks such as long Covid-19 patients and pandemic denials (Salacup et al., 2021).

Video-ethnographic studies used to be conducted at a limited number of sites (Goffine and Mitchell, 2017; Van Maanen, 2011). The ubiquitous use of videoconferencing during the pandemic by both companies and citizens provides an opportunity for almost endless, multi-site field research. Video-ethnographers can now overcome the barrier of international travel restrictions due to Covid and observe subjects who are located in geographically dispersed spaces in short periods of time. A European-based video-ethnographer can collect data drawn from multi-cultural lockdown experiences, for example from a field site in New Delhi in Central European Time (CET) morning to a US west coast location in the CET late afternoon.

Video-conferencing platforms enable easy recordings with auto-generated sub-titles, transcripts and translations that facilitate data analysis (McCarron, 2020). New digital possibilities augment the researcher's emic view during the pandemic, and they create the perception of being physically present in the user's subjective world. Video platforms enable a 'digital ethnographic gaze' into the user's practices and this emic view can be in real-time (Górska, 2020). Users who are confined at their homes or working from home or their workplace can be better understood by analyzing their logos (in-use experiences during

lockdown), pathos (emotions relevant to the task), ethos (overarching values), and topos (the physical and/or virtual space). Image and video data streams can be analyzed using big data analytics (etic view) and by reviewing the initial coding and the subjects' narratives, etic and emic perspectives can generate user foresights.

*Impact on Innovation.* Video-based narratives can inform all dimensions of innovation during the pandemic, including the *process*, the *place*, the *product* and the *people* (Table 2). Video-based narratives can contribute to the creation of future knowledge and embed foresight thinking into the innovation management process. This method can reveal potential future issues that must be addressed by innovation and inform the development of future alternative strategic responses in the face of high uncertainty (Strickland and Zorpette, 2020). Video-based narratives can also facilitate the decision making from idea generation to market launch. The complementarity of the emic and the etic perspectives of the method results in the breadth (comprehensive and extensive) and timeliness (quick availability) of information which are important for a rapid and more insightful decision making across the innovation process stages in a crisis. Moreover, visual data that can be reviewed multiple times can also enhance quick organizational learning of innovation failures. For example, video-based quick insights drawn from the assembly of 3D printed parts of a physical object (e.g. reusable personalized face masks or face shields), can swiftly build new knowledge about actual problems and inform decision making about changes and refinements; this in turn can provoke more effective prototypes and faster production for the emergencies. Video-insights, lessons from innovation failures and recovery plans can be discussed and leveraged in virtual management workshops.

Due to the new technological advancements that emerged during the pandemic, video-ethnography can contribute significantly towards a more open way of innovating. In the time of Covid-19, open innovation has facilitated faster solutions through the distribution of purposive knowledge across organizational boundaries (Chesbrough, 2020). Open innovation provides a rich biotope for collaborative video-based ethnography. This includes video-based borderless research collaborations and/or research dissemination for Covid-related responses. Ethnographers around the world can join forces on a particular emergent pandemic research project, share video-based findings and enhance the breadth of insights. Consider the potential for faster innovation if such rich, actionable and visual insights are uploaded onto open digital platforms. The findings drawn from the video-based ethnographic narratives are both detailed and presentable and in the current pandemic can enhance an increased impact beyond academia. This open video-based knowledge can be harnessed and leveraged swiftly by practitioners and stakeholders at a global scale.

User logos, pathos and ethos elicited by video-based narratives can reveal how innovation outcomes (with tangible or non-tangible boundaries) can be more accurately designed to fit the fast-changing lives of the users due to the pandemic. This global outbreak has forced organizations and governments to experiment with finding quick solutions to respond to health, economic, and social problems (Dewi et al., 2020). The emic view of video-based ethnographic narratives can foster an empathetic perspective (Cankurtarana and Beverland, 2020), making an emotional bridge to people. Video-based narratives can inspire more human-centered solutions which are in need during this period (Woolliscroft, 2020). Repurposed products and services will then reflect more precisely the emotional and functional user needs and will suit better the urgent requests of the crisis.

This method answers the call of Covid related stream of research to identify the drastic and continuous shifts of user needs (Fiaidhi, 2020; Mason et al., 2020). Seamless user foresights drawn from video narratives can reveal the implicit changes in user behaviour in the

short term as well as the future needs and aspirations with long term implications. Moreover, this method can fully embed ordinary user innovation during the pandemic. Since the beginning of the outbreak, ordinary users have managed to find solutions to benefit themselves when they had to overcome pressing constraints (Harris et al., 2020). The lack of manufactured hand sanitizers at the beginning of the outbreak, for example, led numerous users to create home made hand sanitizers with grain alcohol and softeners like aloe vera (Chesbrough, 2020). The elicitation of ideas from ordinary users elicited by the video-based ethnographic narratives can emerge as a simpler, more cost-effective approach to inform Covid-19 innovation. This can also help generate more inclusive solutions from user innovators that have disproportionately affected by the virus (Witham, Anderson et al., 2020).

**Table 2:** Video-based ethnographic narratives in Covid-19

<b>Video-based ethnographic narratives in Covid-19</b>	
<b>Opportunities for application</b>	
<i>Data collection</i>	Only virtual (proximity) Self-narratives & video diaries Wider scope for recruitment & engagement Faster and easier access to hidden communities/under-served groups Multi-site short-term fieldwork
<i>Data analysis</i>	Enhanced emic view Leveraged by etic view of big data Facilitated by technological advancements
<b>Impact on innovation</b>	
<i>Process</i>	Future orientation Rapid and more insightful decision making across stages Faster organizational learning of failures
<i>Place</i>	Borderless collaboration and dissemination Increased impact beyond academia
<i>Product</i>	Human-centred pivoting Development of more empathetic repurposed solutions
<i>People</i>	User foresights More effective ordinary user innovation Enhanced inclusivity

### **Implications for organizations and governments**

So, video-based ethnographic narratives offer an effective and efficient, human-centred foresight method, which can help stakeholders prepare for uncertain futures. In the healthcare industry, video ethnographic user foresights can be used to identify care gaps, unmet Covid-19 patient and caregiver needs, and improvement opportunities in hospital practices and interfaces with healthcare devices (e.g. ventilators etc). Video diaries can complement bio-monitoring sensors and improve remote diagnostics for tele-health services (Tavakoli et al., 2020). Alternatively, video ethnographic foresights from users' symptoms, interactions with products and atypical situations in virtual living labs may enlighten healthcare support decision making (Shuurman, 2015). Video ethnographic narratives from real life practices can also inform the development of virtual reality medical simulation systems to provide instructions/training to hospital staff treating Covid-19 patients (Singh et al., 2020).

A practitioner survey showed that standardized, digital retail experiences have



delivered high enjoyment and contentment during the pandemic (Kim, 2020). User foresights drawn from real life daily interactions can inspire augmented/virtual reality visual solutions for replicating the physical shopping experience of the user at home. This could have a wide scope of applications including the retail, fashion, food service or entertainment sectors and could improve overall user satisfaction and in turn business performance during the crisis (Diebner et al., 2020).

As governments respond to Covid-19 at local, national, and international levels, their types of actions are changing drastically. Previously unthinkable suggestions, such as social distancing and online primary-secondary education have now become national policies with public acceptance. This evidences that radical and extraordinary futures can become highly possible (Voros, 2003). This new understanding provokes for more innovative and radical thinking in the development of governmental policies. Policy innovation teams can complement their research approach with video-based ethnographic narratives for bringing a novel and future-oriented, human-centered perspective to the Covid-19 policy response. Video-based user foresights can inform the work of governmental hubs (e.g. UK Future Policy Network) in developing ideas for more creative and relevant Covid-19 interventions for underserved groups and traditional communities which they can then test as “prototypes” with real people.

Governments and many local authorities have deployed digital technologies into pandemic policy and response (Whitelaw et al., 2020). The enhanced emic perspective of the video-based ethnographic narratives can be leveraged with the adoption of big data (etic perspective) to facilitate the planning, surveillance, quarantine, and clinical management in the containment and mitigation of the disease.

### **Beyond Covid-19: A future outlook**

The history of humankind has shown that many discoveries have emerged in periods of crisis and disease (Caselli, 2006). It is highly possible that the changes imposed on innovation due to the Covid-19 are here to stay (Brem et al., 2021). As this global pandemic evolves and changes almost on a daily basis and deaths continue to rise across the globe, innovation may carry on being ultrafast, human-centered and technology-fostered to provide repurposed solutions and agile pivots (Guest et al., 2020). Such solutions will be adopted swiftly by people for their biological, social and financial survival. Eventually, this virus may be controlled but it may never be again a world free from Covid-19. Technology will continue to be the major driver for the future innovation pathway. People will embed some of their habits from the Covid-19 crisis and the intangible line that distinguishes the ethos, pathos, logos, and topos of humans from artificial intelligence and robots will blur (Zeng et al., 2020; Belk, 2019). But here is a great opportunity; Covid-19 can act as a wake-up call to focus on what is important: innovation for prevention, preparedness, solidarity, and well-being. Covid-19 may be the trigger to re-make a better world (Mao et al., 2020; Buheji and Ahmed, 2020).

In this new norm, video-based ethnographic narratives may integrate AI and neuroscience for image/data analytics (Bernstein and Dohan, 2020), as well as for personalized easy and quick-to-use mobile user narratives. Borderless widespread dissemination in open science platforms of inclusive video ethnographic user foresights from local projects can inform more lateral connections among the data and create more future-informed organizations

and governments. More empathetic foresight can help generate innovations to shape a better future for humanity.

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## **Short Bio**

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