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## **Digital innovation, a policy tool to renew crisis management? Design trajectory of contacting tracing apps in 3 states (France, Japan and Colorado-U.s)**

### **Paper's object**

The proposed paper deals with the development of contact-tracing applications developed in the context of the Covid19 crisis by comparing the design trajectory followed by these solutions in France, Japan, and Colorado. It aims to unfold how this type of digital innovation, part of an evolution of public policies in vulnerability and crisis management, but also in public action digitalization, confronts health authorities on the governance and monitoring issues of internet infrastructures.

### **Context**

In many Western countries, innovations based on mobile technology are spreading as solutions to manage risks at the citizen level better. In a context where the notion of resilience is embodied in the idea that the State can no longer provide responses to crises alone, equip citizens with targeted and multi-actor information tools, localization technologies or tracing, or mutual assistance platforms appear as an alternative or a complement to traditional risk management policies. The earthquake in Haiti in 2010 marked a turning point in the awareness, by public institutions, of the assets that digital solutions constituted in the hands of citizens. Social networks (Facebook, Twitter, etc.), activated spontaneously for communication between victims, victims, rescuers, or between crisis management organizations and citizens, have played a significant role in relief operations and reconstruction. In a few years, digital technologies (websites, mobile applications, serious game platforms, etc.) specifically dedicated to different types of crises have been developed by public and private actors around the world.

This growing interest of public actors for digital innovations in crisis management is in line with a broader movement of «platformization» of public action, which mixes in Western countries as in developing or emerging countries, both a renewal on the one hand of the modes of public support for innovation (in favor of «light», «smart», «easy to use» solutions), and on the other hand of the public/private partnership in operationalizing policies through new business models where data are produced for and by citizens.

The COVID19 health crisis is exemplary regarding this issue: a prolonged crisis, full of uncertainties, that has confronted public actors with vast challenges of governance of practices and bodies, trust and involvement for not only vulnerable populations but also all citizens, to discuss options, expertise, and decisions. It was an opportunity for the rapid deployment of multiple digital solutions (monitoring of tests, for example) aimed at coordinating the activities of numerous actors in crisis management, but also at involving citizens, in particular via mobile applications for tracing contact cases. Developed in the spring (first in Singapore) and distributed worldwide, «anti-covid» applications generally integrate an information functionality (top-down) and a «tracing» functionality aimed at identifying as quickly as possible chains of contamination. They assume the participation of citizens who must activate the tracing and declare their positivity if necessary. The benefit is, above all, collective (limiting the spread beyond oneself) and effective if enabled by many users. Tracing this innovation's development process in a crisis context from its conception to its final adoption sheds light on what is at stake in this digitization of public action vis-à-vis risks and vulnerabilities.

### **Methodology**

The article presented is based on two research projects funded by the University of Grenoble-Alpes on the one hand and the French national Agency on the other. The first project consisted of following the adoption processes of the French tracing application from November 2020 to July 2021 through surveys by online questionnaires (more than 15,000 voluntary respondents) and semi-structured interviews ( 85 interviews) with users and non-users. The second project, with an international dimension, compares the public policies of «test-trace-isolate», retraces the innovation projects of tracing applications and the adherence of citizens to these solutions but also to manual tracing and test-trace-isolate (via a survey by questionnaire with representative samples, 5000 respondents) in 3 contexts: France, Japan and the United States (Colorado precisely).

The innovation trajectory has been reconstructed from an analysis of the press, social networks, institutional reports on the projects, and semi-structured interviews with key actors involved in developing and monitoring the application. Three monographs have been established based on a comparative grid. The French case, driven by the public health authority and by public research actors, was studied in depth by following the team in charge of the project.

## Results

The digitization of contact-tracing creates a tool for individual accountability, whose effectiveness is based on its articulation with testing policy (massive/limited) and support for isolation. The comparison of the three countries highlights the flaws linked to a lack of alignment between the solution and the public actions carried out elsewhere to manage the crisis (test-track-isolate strategy). There are real disparities between the three countries: France favored mass testing and financed large isolation, Japan restricted access to testing and only supported declared covid19 patients' isolation, and Colorado mixed massive access to testing and moderate support for isolation.

Deep differences in the digital culture of health systems and the understanding of privacy issues have heavily influenced the choice of a sovereign public (France) or private (Japan, Colorado with GAEN) solution with consequences on monitoring capacity and efficiency assessment. Privatization deprived public authorities of data and any agile design, while the solutions deployed were initially quasi-prototypes. In Japan and Colorado, this privatization also opened to competing solutions and territorial levels issues. In all three cases, initially supported by public actors or volunteers, the design phase revealed technological challenges for bypassing the parameters of mobile phone operating systems and downloading platforms. These issues have largely determined the choice of multifunctionality in France, the challenge being to get the user to open the application regularly to keep it active, at the risk of masking the real uses of tracing *stricto-sensu*.

## Some few references

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