LASIE

LARGE SCALE INFORMATION
EXPLOITATION OF FORENSIC DATA

Not so Smart Cities?
A Guide to Helping Cities Develop Ethical Data Strategies

LASIE Project

FP7 – SEC-2013.1.6-1 – Framework and tools for (semi-) automated exploitation of massive amounts of digital data for forensic purposes – Integration Project

Grant Agreement n°: 607480

Start date of project: 1 May 2014

Duration: 42 months

Document. ref.: n/a

Peace Research Institute Oslo (PRIO)

Oslo, 17 February 2017

Not so Smart Cities? A Guide to Helping Cities Develop Ethical Data Strategies

A lunch seminar by and with Dr. Gemma Galdon Clavell[1]

A public report by Ida Rødningen (PRIO)

Introduction

On 17 February 2017, Dr. Gemma Galdon Clavell visited Oslo to hold a lunch seminar at the Peace Research Institute Oslo (PRIO). Entitled "Not so Smart Cities? A Guide to Helping Cities Develop Ethical Data Strategies", the seminar was initiated by the research team at PRIO within the LASIE[2] project framework. LASIE, or 'Large Scale Information Exploitation of Forensic Data' (2014-2017), is a European Union (EU) co-founded research project conducted under the 7th Framework Programme for Research and Development (FP7). The aim of the three year project is to design, adapt and implement an open and expandable framework that will significantly increase the efficiency of current forensic investigation practices, by providing an automated initial analysis of the vast amounts of heterogeneous forensic data that analysts have to cope with. The end result of LASIE will be a new smart surveillance tool, which integrates different surveillance methods. It will be able to assist end-users in extracting information from a variety of data, for instance Close-Circuit Television (CCTV) databases, audio recordings, scripture and handwriting and multiple-format biometric information. The ultimate goal is for the LASIE "gadget" to be able to provide end-users (police, etc.) with more sophisticated evidence in the aftermath of a crime.

The research consortium consists of 18 technical and non-technical partners from all over Europe, and PRIO, as a partner in the project, is responsible for an ethical and societally acceptable development of the "gadget". This includes legal as well as ethical considerations, and covers potential issues relating to privacy and personal data protection. Partly, PRIO's responsibility is to continuously monitor and report back to the consortium via deliverables on emerging societal challenges, such as public acceptability and relevant legal developments. In addition to monitoring the project to ensure that its outputs are ethically sound and compliant to relevant legal regulations, PRIO advices on how to make sure that the forensic evidence compiled by the LASIE framework will be admissible by courts of law in Europe.

---

[1] Dr. Gemma Galdon Clavell's research focuses on surveillance, smart cities, the social, legal and ethical impact of technology, privacy, security policy, resilience and policing at Universitat de Barcelona. She also co-founded Eticas Research and Consulting (www.eticasconsulting.com), where she is working as a policy analyst. She is a scientific and ethics expert at the Directorate General for Research and Innovation at the European Commission and sits on the board of Privacy International and Data&Ethics. Clavell holds a PhD in surveillance, security and urban policy and an MSc in Policy Management from Universitat Autònoma de Barcelona.

[2] Cf. www.lasie-project.eu.

Background to LASIE seminars at PRIO

Since 2016, PRIO – as a partner in LASIE – organises short seminars at its premises in Oslo, Norway to discuss with invited experts the most pressing societal issues arising from the LASIE research project. The adopted formula of such seminars involves an introduction to a given topic by chairperson (15 min.), a keynote by the invited expert (45 min.), up to two interventions from invited commentators (10 min. each), the response from the invited expert (10 min.) and, eventually, the discussion with the public (30 min.) The seminars are organised either during a breakfast or a lunch and last 2 hours. Each seminar is followed by a public report such as the present one.

The present seminar was advertised internally at PRIO, on the public websites of PRIO, as well as internally within the LASIE consortium with the following description:

> *In the last few years, the possibility of so-called 'smart' technologies to improve the efficiency and surveillance capabilities of electronic devices such as CCTV has filled both pages of concern and PR leaflets. While the corporations driving these developments have emphasized how smart technologies can improve efficiency at all levels (public administration, mobility management and planning, market analysis, etc.), critics have warned against the risks associated with the proliferation of smart surveillance.*

> *The conversation around the potential and risks of relying on technology to tackle urban and social problems has often been too high-level and abstract, ignoring the practical issues that arise when trying to design and enact the cities of the future and their technological capabilities. The specific policies and technological solutions that can contribute to better cities (more efficient, more sustainable, more citizen and service-oriented, more fair, more participatory, more accountable, more secure etc.) and the ways these may come about are often neglected, leaving local decision-makers on their own when it comes to planning the smart city.*

> *On the basis of the work of Eticas Research and Consulting with different local actors, the session will present a diagnosis of the problems with the current debate around the relationship between cities and technologies and a series of strategies that can be deployed to build ethical, responsible strategies to make the most of data to improve cities.*

The first seminar hosted Prof. Dr. Roger Clarke (Australian National University and the University of New South Wales) on 29 August 2016 and analysed the notion of "security".[3]. The second seminar hosted Prof. Dr. Mireille Hildebrandt (Vrije Universiteit Brussel) on 18 November 2016, examining the concept of artificial police agents.[4] The current report thus synthesises the third seminar in this series.

The views expressed in the following are solely those of the speakers, and does not reflect the views of the LASIE consortium as a whole, its individual partners nor the European Commission.

---

[3] Cf. http://www.lasie-project.eu/wp-content/uploads/2015/05/LASIE_Clarke_seminar_FINAL_ok_cleanv2.pdf.

[4] Cf. https://www.prio.org/utility/DownloadFile.ashx?id=323&type=publicationfile.

Photo by Martin Tegnander, PRIO.

Opening of the seminar

The seminar was opened by Stine Bergersen, researcher at PRIO and member of the PRIO team working on the LASIE project. Bergersen welcomed the main speaker, discussants and audiences, and proceeded to introduce herself, PRIO, and the LASIE project.

This seminar was about smart cities – a concept that relates to many contemporary challenges: privacy, data protection and so on. With around 50% of the population now living in cities, it is necessary to ensure an effective and sustainable use of resources in different fields such as transportation, communication, etc. This goal has been labelled as 'smartness' of a city, yet not without doubts or controversies. This seminar was therefore meant to provide some clarity thereto.

The floor was then given to Clavell for her key note presentation.

Presentation by Dr. Gemma Galdon Clavell, "Not so Smart Cities? A Guide to Helping Cities Develop Ethical Data Strategies"

Clavell opened her keynote speech with a brief introduction of herself, her policy- and research interests and background, and her co-founded company Eticas Research and Consulting. The company was started three years ago, and deals with issues of societal challenges of data intensive technologies, including technologies used in urban settings. It aims to contribute to making our technological futures more responsible. That means understanding how technology is built, why technology is built, and how to make technology more accountable. Eticas works on anything that can be said to involve data,

and one of the working fields is smart cities. Clavell introduced the topic of her speech with one of the main challenges of the very concept of 'smart cities': a widespread fatigue and inability to define the term itself, and little progress in what 'smart city' actually means.

She then provided the audience with two definitions of a smart city, one from 2000 and one from 2010. The terms show next to no evolution from the former to the latter, despite having been formulated ten years apart. This points to a problem with the way that smart cities are defined, and the way they are put into practice. Clavell states that we are failing to realize the potential to operate the smart city because it is given a title that fails to deliver. *People* are missing in the definitions, so what would happen if they were place at the centre of the definition? This bottom-up approach would challenge the corporate narrative, which shows some evolution in the right direction, but it still ends up falling into technological determinism. Many believe that technology will bring empowerment, change, etc., however this is a false promise, according to Clavell. People do not feel empowered by technology, nor do they feel that their voices are better heard in politics and so on.

Instead of looking at what a smart city *is*, it may be useful to enquire as to what a smart city *does*. Clavell has been part of Big Bang Data,[5] a world travelling exhibition aimed at raising awareness about what data is doing around us. The amount of surveillance that surrounds us in day-to-day life is extensive. Anything that is labelled 'smart' is essentially surveillance, and can be said to spy on citizens: from smart TVs, clocking-in systems, personal fidelity cards CCTV etc. This lead Clavell on to a special piece she was asked to contribute to, commissioned by the Town Hall of Barcelona on the topic of smart cities. She did her fieldwork in Barcelona, and found large amounts of failed technology, as well as confusion as to what was 'smart' and what was not. Also, there were examples of very costly 'smart' solutions in the city, such as an autonomous bus incapable of even turning a corner. Clavell stressed the need to take into account a level of responsibility, and also a certain level of accountability. Cities could end up graveyards of failed technology, for instance abandoned censors. Technology does not always work, but people tend to think it does. There are a lot of people with little or no knowledge of buying technology, and these people are often the same people making decisions about which technologies we buy. Public administration has not put itself at the level it needs to be in order to make good decisions when technology is being procured.

Moving from research and theory to policy, her field of expertise at Eticas, Clavell then shifted the focus to failures in policy. Why is there such extensive policy failure? This inability of successful policy-making gets worse when technology is involved, and one of the major problems leading to policy failure is mistakes in implementation of the procured technology. There are many challenges facing policy and policy-makers, and another issue is so-called imposed blindness. Furthermore, there is a problem with what has become known as 'the digital divide', a reluctance to get engaged in long-term debates and a clear preference for easy solutions. A good example would be cars in urban environments. The on-going shift from petrol-fuelled cars to electric ones is a relatively easy transition. However, according to Clavell, this is not the debate that ought to be had, but rather we should be discussing the concept of the autonomous car. How come citizens are not being told that what they are buying today is going to be outdated in five, ten, fifteen years? The hard debates and tough decisions tend to be skewed, and the question is not whether someone needs to take the first step, but rather *who*. In Clavell's research, she found that a combination of all the above-mentioned

---

[5] Cf. http://bigbangdata.cccb.org/en/.

factors leads to worse decision-making. Human beings lack in ability to critically question technology, and it is tempting to trust that whatever is being presented to us are the best solutions.

How technology is communicated to the people is another problem – there is a fundamental imbalance between the discourse around technology and people's needs. Technology has in many ways stopped being efficient in political terms. Clavell's PhD looked at, *inter alia*, why cities keep buying and implementing CCTV when there is clear evidence that it does not serve its intended purpose. The results of the research showed that the investment in CCTV systems has nothing to do with crime, but it was efficient in gaining political votes. A camera is a visible, even tangible thing as opposed to, for instance a long-term social policy plan to reduce inequalities. However, the political capital of CCTV cameras has not translated well to the concept of 'smart cities'. In the case of Barcelona, Clavell explained the result is even the opposite. When the new government had taken an "anti-smart city" stance from the outset, their problem was that they had no alternative. What was needed was a new discourse, new practices, hence the City of Barcelona decided to go for the new term "digital sovereignty", but this was merely a new label.

There is a clear interest in rethinking the interaction between technologies on the one hand, and urban spaces on the other. According to Clavell, the main success of technology in improving urban life has been waste management.

Eticas has been working with the technological hub in the City of Barcelona to try to map and create an understanding of where they want to get to with the smart city, how they want to get there and so on. The result has been a framework that aims to capture this very complex environment. Clavell took the audience through the four main pillars of the Eticas Framework, describing societal impact when facing various challenges. These challenges are apparent in most stages of developing a technological research or innovation project. The Framework offers four entry points to reach suitable solutions, and has been crucial for the work that Eticas is doing:

1) **Law and Ethics.** Ethics and societal impact can be a lot of different things. Traditional ethicists tend to only focus on one aspect: discrimination. A traditional ethicist will always claim that mass surveillance is preferable over targeted surveillance. This is a problem because the latter is often illegal. It is essential that international law and regulations are taken into account in development, procurement and implementation of technologies, but also values that are crucial to our legal systems, such as trust, social cohesion, responsibility, etc.

2) **Desirability.** What is technology a solution *to*? The relationship between solution and problem is crucial to good policy-making, yet this link is often non-existing when it comes to technology development. An example: when a Nigerian citizen attempted to detonate a bomb on a flight to the U.S., it sparked a debate on how to react. The result was the implementation of full-body scanners in airports. The perpetrator had been linked to a terrorist organisation prior to the trip, and had been placed on a general watch-list, but nothing had been done to prevent the attempted attack. Clavell asked, rhetorically, what the relationship between the problem and the 'solution' of full body-scanners was in this case, to which she herself answered none.

3) **Acceptability.** Complying with the law is crucial, but any steps taken also need to produce an acceptable, positive outcome for the potential client. Sensored 'spy bins' in London were used as an example. You put the trash in, but the sensors could pick up the MAC address on your

phone etc., and then push personalized commercials onto the phone. They were installed without any information or prior consent from the local inhabitants. After the bins had been brought up in media, and after the following complaints, they were finally removed. Shortly after the same problem occurred in New York, where sensors were installed in phone booths. However, the sensors in New York were based on a system of consent, so they were legally compliant. Nevertheless, people still rejected it and it had to be dismantled. According to Clavell, the example from London illustrated that social acceptability plays a role, and should play a role, in the implementation of (new) technologies, e.g. in the deployment of the smart city. It is important to focus on how to explain what is being done, and how to explain its acceptability to a potential client.

4) **Data management.** How are concepts from social science and ethics terminology, such as trust and social cohesion, translated into engineering terms? It is important to find a middle ground, something that can be understood both by social scientists and engineers. The Eticas Framework asks: where do you get the personal data in your database from? How does it get into the system, and how does it travel through it? Oftentimes, this is not known, and the data is lost. In each step of the data managing process, measures can be taken to improve ethical data management. This could be anything from anonymization to data minimization, which would mean only collecting the data you need for that particular purpose. Differential privacy, k-anonymity etc. are dependent on engineering expertise, but many other 'remedies' that may be implemented traditionally belong in the social science domain.

In light of explaining these four pillars of the Eticas Framework, Clavell moved towards the final and summarizing section of her presentation. The relationship with technology in most organisations, public or private, is a mess. The way things are done and the processes that are being used are outdated at best. We have added practices to processes that were never rethought. As of now, the only way to audit systems is by reverse engineering, which is extremely costly and time-consuming. Personal data ends up online to a larger and larger extent, to be used by anyone. For example, insurance companies can adjust people's premiums based on acquired information about their likelihood of getting ill. This, by large, goes against any principles of fairness and equality, and anything collective crumbles if you know the exact wishes and needs of individual people.

Clavell stressed that no single city in her research has had a data strategy. Procurers and policy-makers do know that they want technological systems, but they are often lacking a plan with regards to how it will be implemented, how it will impact their existing system, how different systems will relate to each other and so on. There are also organizational issues, and often, procurement is not under control. When buying new technologies, public administration as well as private entities often have no control of what they are actually buying, who the data controller is, and the privacy risks are difficult to estimate. So what is the status in Barcelona? Clavell's team are trying to design a map of what the city might look like, basically a data strategy. Looking at the data management plan of the city, including planning budgeting, procuring, data architecture, privacy and security, the goal is to define guidelines to assist an organization in dealing with these issues in a better way. These tools or mechanisms include data management checklists, security-, privacy- and open data-, big data management plans, ethical data strategies and so on. Even with these documents, it may take up to two years to transform a city, and Clavell states that we are currently compensating for over 30 years of not planning properly.

Not so Smart Cities? A Guide to Helping Cities Develop Ethical Data Strategies

LASIE

Finally, Clavell addressed the issue of 'data despotism'. There is a narrative around technology that says that through technology, people will be enabled to participate more in the life of a city, and thus be closer to those representing them. However, we see is that technology is being used as a way of avoiding to deal with human beings. "Everything for the people, with the data of the people – but without the people." It is crucial to start tackling this at a city level; the urban level has much more potential than any other level. National and regional levels are too complex, and anything below the urban level lacks the same capacity. Cities are important, and have always been, and they host a lot of potential and promise.

Interventions from discussants

After Clavell had finished her keynote speech, two invited discussants provided their reflections and comments.

The first discussant was Dariusz Kloza, LASIE project leader at PRIO. Kloza opened by asking how to make sure that the tools and measures as mentioned in the keynote will indeed work in practice, given various constraints and challenges. Firstly, he conducted a small linguistic exercise, looking at Oxford Dictionary of English's definition of 'smart'. According to the dictionary, the term refers can to to a variety of different qualities, such as "attractive", "neat", and "stylish". Adding onto what Clavell said in the beginning, we do not have a clear understanding of what 'smart city' entails. It is more than a mere aggregation of gadgets, but it is also difficult to define anything larger than a gadget as 'smart'. Secondly, Kloza compared the smart city to a battlefield, a place for accommodation of various interests or intentions. There are noble intentions: efficiency, sustainability for future generations etc., however there are also bad intentions, as seen for example in multinational corporations. They often base their technical advancement on greed and money-making. There is also the issue of repressive governments. In the battlefield, then, we have these good intentions up against the bad intentions. These intentions are always associated with risks, as described by Clavell, and we have to negotiate these risks so that the end result is legally compliant and "societally OK", which is PRIO's role in the LASIE project. Impact assessment provides a field for negotiating the term, and generating knowledge about smart cities. Finally, there is a problem with innovation. The most control that we have of the project is at the beginning of the development of any given project. The more we know about the technology, the less we can control it. When designing anything, we have a responsibility towards society. This responsibility is simply to not 'destroy' the said society. Kloza held that he does not oppose 'smart city' as such, but there are limits to be taken into consideration. Like Clavell, Kloza stressed that it cannot simply be about data alone, or only technology, and made a plea that we create a framework for mitigation. There is therefore a need for a comprehensive assessment of the smart city. The problems, failures and challenges faced by smart cities as discussed by Clavell, makes for a scope of a comprehensive impact assessment and this – at the end of the day – is what we need.

The second discussant was Kristoffer Lidén, senior researcher at PRIO. Lidén heads work on law and ethics in the SOURCE[6] and NordSTEVA[7] projects that are highly relevant to the topic. Lidén focused on the role of ethics with regards to Clavell's speech. An educated ethicist, Lidén highlighted issues of discrimination as important in this regards, but agreed that the topic is much broader and that there has been a problem with the traditional work on the ethics of technology, security technology and surveillance. It has not focused sufficiently on the actual technology, although there is huge

---

[6] Cf. http://societalsecurity.net/.

[7] Cf. https://www.prio.org/Projects/Project/?x=1135.

improvement ongoing. The connection between corporations and public administration of cities was also commented on. Many of the actors collecting data, for instance in shops, will be private actors. To what extent will public administration get access to this sort of data? What is their obligation to share it, and how should it be regulated and implemented in terms of public administration?

Another important thing highlighted by Lidén is the long-term impact of these technologies. Sometimes innovation technologies that are generally longer-term processes suffer short-term consequences. Lidén directed a question at Clavell, asking her opinion on whether it may be necessary to experience repeated failures to get somewhere, and whether it is then ethically worth accepting repeated failures, if it moves in the right direction? The discussant referred to Hans Jonas' 1985 book on technology and ethics that "… The worst case scenario must always be our starting point. If the worst-case scenario is not acceptable, then we must not take the first step." [8] The role of ethics in law, on the one hand, and the role of ethics in democracy, on the other, is important and interesting. This includes dealing with issues that are legally regulated, but also broader societal issues that are not legally regulated at a detailed level. There are also issues relating to how data can be used in processes not involving people directly. In Clavell's approach, the argument leads to people being more included in the process. Lidén inquired into the speaker's expertise on how to operate in this area. He briefly presented the audience with three levels of ethics: applied, pragmatic ethics; immanent critique, and external ethical perspectives. How to reconcile ideal, perhaps utopian, perspectives with applied ethics? Lidén asks the speaker if she has any experience giving applied advice that goes against her broader thinking on the ethics of security at a level of more ideal theory? He expressed concern that not being able to reconcile the three levels might undermine the role of ethics as a substantive corrective to instrumental reasoning. Finally, Lidén discussed the dilemma of how applied ethics can be part of legitimizing certain types of technology. Technologies that are not popular to begin with, can be swayed into acceptance by showing that they have undergone ethical considerations in the development process.

Discussion and questions from the audience

Following these two interventions there was a brief section of responses and comments from Clavell.

Regarding the relationship between corporations and public administration, she stressed the dynamics between them. A lot of corporations are selling vapourware, and in the system in which we work that is legitimate. The problem is when public administration buys vapourware. The failure of 'smart city' is the companies that invested therein. She repeated that there is a problem with procurement, contracts, the ability to oversee what is happening with citizen data.

On the issue of repeated failure leading to success as raised by Lidén, Clavell responded positively, but that it is crucial to learn from the failures in order to get somewhere. There is a lot of inability to recognize that technology sometimes fails. We are not currently learning from our mistakes.

A question was raised about whether Clavell has considered including means of incentives to produce effective outcomes in public services, to which Clavell responded that demand is not an issue. Eticas operates in a climate where there is no need to sell, because clients come as a result of privacy failure. People take care of ethics more and more, but they are less willing to pay for it. She noted that privacy will be the civil right of the 21st century. The issue of whether people actually care about technology

---

[8] Jonas, H. (1985). *Technik, Medizin und Ethik — Zur Praxis des Prinzips Verantwortung*. Frankfurt a. M.: Suhrkamp.

was also raised. Clavell replied that people do care, but they don't have any alternatives. The idea that the law will limit technological possibilities seems strange, but it should be remembered that legislation is social values translated into codes.

Finally, one member of the audience asked about the specifics of politicians becoming engineers. Clavell rounded the session off by commenting that it is all about implementation, and how you explain things to build a discourse that resonates with people.