

2. Essay of a Thinker: 'The search for a good digital life. Put people and values at the heart of digital innovation'

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2.1. Waking up from irresponsibility

It is important not to ignore this history of failure to assign and assume responsibility in the internet age, both by legislators and by Tech corporations, which led to the fiascos of the internet, in the form of spreading of mass surveillance, recruitment to terrorism, incitement to racial and religious hate and violence as well as multiple other catastrophes for democracy.

Paul Friedrich Nemitz (2018)

For far too long there has been silence about how the information revolution sneaked up and radically changed the world (Est 2012). An important reason for that silence is that many scientists, entrepreneurs, politicians and journalists are continually proclaiming the 'technological dream'. For society, this is a hopeful and seductive narrative in which citizens can do things better with new technology, for example watch TV series uninterrupted on the train or during cancer cure. In this instrumental vision, technological progress leads inexorably to societal progress. For the advocates of innovation, it offers a carefree existence with clear roles and few responsibilities. Scientists and high-tech entrepreneurs are seen as heroes and don't need to take responsibility for the risks associated with the technology. Governments are allowed to aimlessly stimulate innovation and leave future generations of politicians and managers to tackle the negative social 'side effects'. The result is that the technological dream goes hand in hand with organised irresponsibility (Beck 1986).

The technological dream state is characterised by idolatrous worship of innovators and aversion to critics. What is significant is the difference between the way the public reacted to Steve Jobs when he presented the first iPhone in 2007, and the reaction to the Christmas speech given by Queen Beatrix of the Netherlands at the end of 2009. When Jobs introduced the iPhone with the words 'Once in a while a revolutionary product comes along that changes everything', his every sentence was cheered by an ecstatic audience. Two years later Queen Beatrix issued a warning about information stress and asked some critical questions about the quality of debate on social media: 'The modern technical possibilities appear to bring people closer together, but they remain at a 'safe' distance, hiding behind their screens.' Social media exploded with comments that this 'oldie' had no understanding of new technology and would be better to keep her mouth shut. This kind of public atmosphere in which criticism of technology is almost taboo, is

an obstacle to a proper debate and also therefore to the democratic guidance of technology. This has certainly been the case for far too long in ICT.

In the year 2020, the world seems to have partially woken from its digital trance. Courageous whistle-blowers have played a crucial role here. In 2013 Edward Snowden brought the mass surveillance activities of the NSA, the American security services, to the attention of the entire world. Whistleblower Christopher Wylie revealed how Cambridge Analytica, at Trump's request, used data from Facebook to try and influence the behaviour of voters during the American presidential elections in 2018. Zuckerberg, the CEO of Facebook, was forced to give an account of himself before the American Congress and admitted: "We didn't take a broad enough view of our responsibility and that was a big mistake". So, it became clear that the privacy paradise of yesteryear has turned into a control state (Vedder et al. 2007) and that now there is also a global control economy, the so-called surveillance capitalism (Zuboff 2019). The result is a loss of control over personal data *and* freedom of information, i.e. a loss of control over the information we receive and on the basis of which we make choices (Hof et al. 2012).

Because of the technological dream and accompanying 'culture of lawlessness and irresponsibility' (Nemitz 2018), digital innovation has enjoyed a free-for-all in the last two decades, as a result of which the accompanying risks have been allowed to run rampant, sometimes with catastrophic results. Now that the internet is slowly morphing into the Internet of Things and will effectively play a role in all areas of society, it is important to acknowledge this history of irresponsibility (see opening quote by Nemitz 2018). Basically, the question is how we can ensure that digitalisation is modelled responsibly from now on.

This essay addresses the issue of responsible digital innovation by first looking at the situation in the Netherlands. How is governance of the societal and ethical issues around digitalisation organised in the Netherlands? Governance is 'the capacity of a society to develop some means of making and implementing collective choices' (Peters & Pierre 2009: 91). Then we take a look at the situation in Belgium and Flanders. On the basis of the three KVAB debates about digital innovation between the three Thinkers-in-Residence and stakeholders, I have tried to obtain some insight into the way in which the relevant stakeholders in Belgium and Flanders talk about digital innovation. Are debate and policy on digital innovation defined by the technological dream or the desire for responsible digital innovation?

2.2. Blind spots in the Netherlands' governance landscape

The Rathenau Instituut in the Netherlands conducts research into the impact of science, innovation and technology on society. Providing information to the Dutch Parliament (Senate and House of Representatives) plays a major role in this process. The institute also tries to deepen and broaden the debate on

digitalisation. At the beginning of 2014 the institute identified the occurrence of an intimate-technological revolution: digital technology was nestling in and among us at lightning speed, gathering masses of data about us and simulating human behaviour (Est 2014). The fact that there is increasing interference in our personal lives via IT is leading to a political, economic and social fight for our intimacy. Digital innovation raises important ethical questions that touch on the (fundamental) rights and dignity of human beings: the right to privacy, a ban on the violation of physical and mental integrity, the right to a safe environment, the right to property and freedom of thought and conscience. At the time, the Rathenau Instituut called on politics and government to promptly develop frameworks to oversee this intimate-technological revolution on a societal level (Est & Rerimassie 2014).

The work of the Rathenau Instituut inspired Senate member Gerkens to submit a parliamentary motion on 23 September 2014 in which she signalled the advent of the Internet of Things and expressed concern about the social, legal and psychological effects thereof. In the motion, which was almost unanimously accepted, the Senate requested that the government ask the Rathenau Instituut to 'conduct research into the desirability of a committee that could advise on the ethical elements of the digitalisation of society.' The Senate suspected that important values were at stake as a result of digitalisation. The study *Urgent upgrade: Protect public values in our digitized society* (Kool et al. 2017) confirmed this. In this study we investigated which societal and ethical challenges were connected to digitalisation and the extent to which dealing with them is already politically placed on the agenda or institutionally embedded.

The terms digitalisation and Internet of Things refer to a cluster of digital technologies, such as robotics, artificial intelligence and algorithms and big data, digital platforms, biometry, persuasive technology, augmented reality and virtual reality. Together they are responsible for a new wave of digitalisation. An increasing number of components of the physical world are represented virtually. As a result, there are more and more places in which there is continuous feedback between the physical and virtual world, whereby products or services are directly or indirectly adapted on the basis of an analysis of digital data. The abovementioned technologies therefore play an increasingly important role in data value chains, i.e. for collecting, analysing and applying data. Applied to people, this means the measurement of people, the profiling of people and interference in the lives of people, such as controlling behaviour. Take for example the news feeds that social media companies 'personalise' on the basis of the user's surfing behaviour. The data value chain has thus become a cybernetic feedback loop, and as such is the main feature of the current phase of digitalisation, increasing its social impact.

Politics has been concerned with the issue of privacy since the 1970s. From a public perspective this means formulating and implementing a fair method of handling

and automatically processing personal data. Notable so-called 'fair information' principles include: purpose specification, restriction on data collection, purpose limitation of data, quality of data, security guarantees and informed consent. Whereas digitalisation was initially about collecting data, now the public and political debate is about the large-scale analysis and use of those data in a fair way. In recent years, the global debate on artificial intelligence (AI) has led to an identification of all kinds of principles for the use of algorithmic processing, such as the idea that AI technology has to be explainable (cf. Jong et al. 2019). This broadening of the debate has led to the realisation that digitalisation is putting pressure on other important public values besides privacy and security, such as autonomy, control over technology, human dignity, justice and equitable power structures (see Table 1).

Table 1. Societal and ethical issues relating to digitalisation
(source: Kool et al. 2017, 72)

Topic	Societal and ethical issues
Privacy	Data protection, privacy, digital inviolability, mental privacy, surveillance, function creep
Security	Information security, identity fraud, physical security
Autonomy	Freedom of choice, freedom of expression, manipulation (dissemination of disinformation, microtargeting), protection of democracy, paternalism, skills, limits of self-sufficiency
Control over technology	Control over and understanding of AI technology, responsibility, predictability
Human dignity	Dehumanisation, instrumentalisation, de-skilling, de-socialisation, unemployment
Justice	Discrimination, exclusion, equal treatment, stigmatisation
Power structures	Unfair competition, exploitation, consumer-business relations, business-platform relations

Below are three examples. The Cambridge Analytica scandal of 2018 showed how the autonomy of the democratic voter could be violated and resulted in a spurt of public awareness about how much data is collected, about the fact that providers earn money from user data and that companies and governments are in a position to try and manipulate human behaviour via profiling. The second example concerns human dignity or rather the lack of attention to human beings. On 18 March 2018 Elaine Herzberg was killed in Tempe, Arizona by an Uber self-driving car. An important cause of this accident was the fact that the Uber programmers had designed the software for the robot car such that it only detected pedestrians using a zebra crossing (Marshall & Davies 2019). Herzberg did what people often do: she walked her bike across the road. Because she did this at a distance of

approx. 100 metres from an official zebra crossing, the robot car detected her too late. The lack of a safety culture at Uber was the reason why insufficient attention was paid to human behaviour in their calculations. A third example concerns fair economic power structures. There is now a great deal of concern in Europe about the data power and market power of large American and Chinese platforms, such as Google, Amazon and Alibaba. During a Round Table discussion in the Dutch House of Representatives, fashion entrepreneur Erik van Rosmalen declared that the advent of platforms had caused a dramatic reduction in revenues among small and medium-sized businesses: 'In the last 8 to 10 years many retailers have seen a catastrophic fall in their sales and consequently their income, where percentages such as 30-40 are the rule rather than the exception' (House of Representatives 2018).

The Rathenau Institute also investigated the extent to which the legal framework and monitoring arrangements were sufficiently equipped for the above issues, which often touch on essential public values and fundamental rights. The issue at hand is therefore governance of the societal and ethical issues around digitalisation. The whole governance landscape was also examined: the role of science, the role of fundamental and human rights, the role of civic society and the role of politics and government in setting the agenda and determining and implementing policy. The analysis showed that the protection of public values under pressure from digitalisation was failing miserably in the Netherlands at that point. Five blind spots or governance challenges were identified (see Figure 1):

1. Translation of new societal and ethical issues into policy, interdepartmental harmonisation and coordination on digitalisation, and the political debate about these new issues.
2. Guarantee of fundamental and human rights in the digital society.
3. Empowering regulators and ensuring mutual coordination between regulators.
4. New responsibilities for developers of digital services and products.
5. Organising societal dissent: reinforcing civic society, knowledge and skills of citizens and societal debate about digitalisation.

In the Netherlands in recent years the public and political debate about governance of the societal embedding of digitalisation have received a real boost. In June 2018 the cabinet rolled out an integrated digitalisation strategy (EZK 2018). In order to get a better grasp on digitalisation, the House of Representatives set up the provisional committee Digital Future in July 2019. Its role was to investigate how the House can better oversee digital developments (Tijdelijke Commissie Digitale Toekomst 2020). In addition, various political parties, such as D'66 (Verhoeven et al. 2019) CDA (Havelaar & Dijkman 2019) and GroenLinks (Wouters 2019) have started thinking about digitalisation from the perspective of their ideological principles. The political silence about how the information revolution is changing

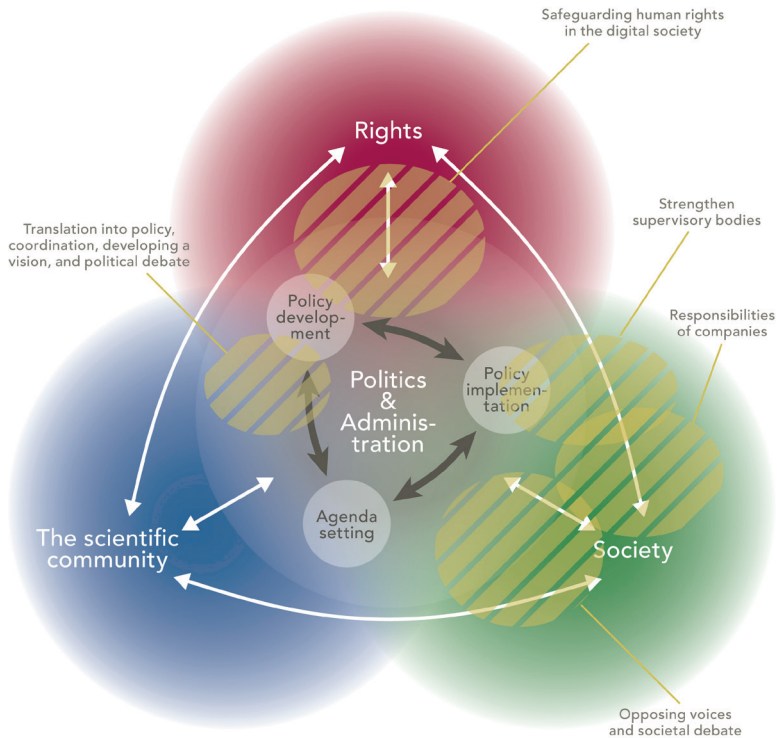


Figure 1. Blind spots in the Dutch governance landscape around digitalisation, ethics and society (source: Kool et al. 2017, 124).

society, which I talked about at the beginning of this essay, was broken in the Netherlands in 2019. As a result it is now possible to have a democratic pluralistic political debate about the future of the digital society. Following the Cambridge Analytica scandal and the enormous interest in AI and ethics among developers and media, the public focus on a number of social and ethical issues surrounding digitalisation has grown dramatically over recent years (Jong et al. 2019).

2.3. Thinking about digital innovation and acting in Belgium and Flanders

In the context of the KVAB Thinkers' Programme on digital innovation the above discussion raised the following question: Are Flanders and Belgium ready for the digital society? In other words: How do things stand in Flanders and Belgium in the matter of the governance of societal and ethical issues that have emerged as a result of digitalisation? The following issues also come up: Which public problems have been identified and put on the political agenda? How do various actors in

society discuss these problems? Are debate and policy on digital innovation defined by the technological dream or by the desire for responsible digital innovation? Who is involved and who is not? How are public values safeguarded at the institutional level? Which institutions have been set up over the years for that purpose?

Proper responses to these sorts of questions require far-reaching and in-depth research. As a matter of necessity, my ambition in this respect is far more limited. On the basis of the three KVAB discussions about digital innovation between the three Thinkers-in-Residence and stakeholders, I have tried to obtain some insight into the way in which people in Belgium and Flanders talk about digital innovation. These conversations show that stakeholders are aware of the fact that digitalisation comes with a wide range of issues (see table 2) and numerous governance challenges. For example, the Social and Economic Council of Flanders (SERV 2018) calls for experimentation spaces and testing grounds, a pioneering role for the government, and the stimulation of a dialogue on the impact of digitalisation and in particular the integration of ethical and social issues in technological development.

Table 2. Overview of societal and ethical issues highlighted during the three stakeholder debates about digital innovation.

Topic	Societal and ethical issues
Privacy	Limits on measuring and sharing intimate information For example, among pupils and students in the case of learning analytics.
Security	Information security
Autonomy	Fake news, addiction to 'games' and social media
Control over technology	Risk of bias in computer algorithms, the importance of explicability of AI technology to enable meaningful decision-making
Human dignity	Shorter attention span among pupils (de-skilling). While the public fears job losses due to automation, the technology federation Agoria (2018) claims that for every job lost in the future because of digitalisation, 3.7 new jobs will be created.
Justice	A huge digital divide threatens to emerge in society. There is a digital divide between teachers. And there is a digital divide between pupils. Are we taking sufficient account of those people who cannot participate? Online as standard causes exclusion
Power structures	Role of (big) businesses in education that may in time jeopardise the democratic function of education

2.3.1. National security, economic prosperity and social welfare

Hereafter, I will reflect on three key innovation goals – national security, economic prosperity and social welfare – and related innovation processes. There can be tension between these three goals. The current economy can be at odds with social and ecological limits in all kinds of ways (Raworth 2017). The realisation that the current global emissions of greenhouse gases is more than exceeding the planetary ecological limits upon which our lives depend (Rockström et al. 2009), is for example the moral basis for the sustainable energy transition. Another tension in the debate is the fear that too much focus on social welfare is undermining economic prosperity. This fear is very evident in the following quote by ALLEA (2019, 7): ‘The tension here is that Europe is losing its technological advantage and that this may lead to a fall in living standards and a decline in the political power that protects these standards.’ ALLEA, the European Federation of Academies of Sciences and Humanities, wonders whether Europe is not putting the protection of human dignity too far above economic growth and whether the incorrect use of data shouldn’t be balanced against the opportunities that this offers? (ibid.) The abovementioned tensions raise the question of how far national security, economic prosperity and social welfare can be combined.

In my ‘essay’ below I sketch out some reflections on the way in which Belgium and Flanders are modelling digital innovation in the area of national security, economic prosperity and social welfare and the extent to which they are taking into account its embedding in society. I compare the way in which digital innovation is modelled with a broad vision of innovation, inspired by the notion of socially responsible innovation (cf. Schomberg & Hankins 2019). In responsible (digital) innovation, the focus is on the societal impact of innovation, and those involved take responsibility for steering innovation a desired direction from a public perspective (cf. Est et al. 2017).

2.3.2. National security: The return of the drones

In the area of national security, the objective is often to retain the technological upper hand. This is nicely expressed by Yoge Patel (chief designer at Blue Bear Systems Research): ‘The only way to anticipate danger is to retain the advantage. ... I always say: put on your sneakers and run! You have to stay ahead’ (quoted in Hofman 2019). In the area of military drones and cyber weapons that has led to an AI arms race. The engineering aim underlying the new robotics is to build machines that can move independently and work in complex environments (Royackers et al. 2016). This desire to have the technological upper hand means that (military and commercial) drones will become increasingly intelligent and autonomous. Such technology can also fall into the wrong hands and be used maliciously. In the documentary *Drones: The next air disaster*, Jason Derick, the lead developer of Exyn Technologies, an American company from Philadelphia that

develops autonomous drones, is asked if such a scenario is possible. He replies, 'I think we should separate this technology from the way people use it. How people use it is essentially their business.' This statement shows that he refuses to take any responsibility for the potential abuse of the drones that his company designs. For the sake of national security, how can this development be handled responsibly?

The development of autonomous military drones raises the question of whether armed unmanned systems can be allowed to make independent (i.e. autonomous) decisions about lethal force. This automation of death obviously invokes ethical questions. Can autonomous military robots conform to the main principles of the humanitarian law of war, such as proportionality (the use of violence must be proportionate to the value of the military objective being sought) and discrimination (when making a choice of target, a distinction must be made between combatants and civilians, and between military and civilian objects)? In 2018, the Federal Parliament of Belgium ruled that such 'killer robots' must never be used by Belgium. Belgium is the first country in the world to have introduced such a preventive ban from ethical considerations. Research into automatic weapons is however still possible in Belgium. So, Belgium is still a participant in the arms race.

The development of military drones raises the question of the extent to which proliferation of armed drones forms an irresponsible risk. In Syria the Islamic State has been using commercial drones to drop bombs since 2017. The proliferation of military drones and abuse of commercial drones thus requires serious attention. In any case this also shows that the idea that technological superiority in military technology serves the interests of national security is too simplistic. Cheap and simple drone technology can also cause a lot of damage. In addition, there is a question as to how well Belgium is prepared to defend itself against a drone attack. Although the doom scenario of armed drones that return and take revenge (cf. Tenner 1997) is obvious from a military strategic viewpoint, it has long been ignored. It seems that real-life incidents are needed – e.g. the temporary closure in early 2019 of Heathrow airport because one individual with a drone jeopardised air traffic – before attention is focused on that sort of societal impact.

In short, from a broad vision of digital innovation, arms development should always take place in parallel with arms control. With its decision never to employ 'killer robots', Belgium has sent a powerful moral signal. From that position, the country can cooperate on global treaties for arms control, to ensure that arms proliferation can be stopped and military robots can be responsibly developed and employed in military operations. Finally, Belgium needs to prepare itself for a possible (terrorist) drone attack.

Table 3. Broad vision on digital innovation in the area of national security, economic prosperity and social welfare.

Policy objective	National security	Economic prosperity	Social welfare
Innovation objective	Technological superiority	Development and use of key technology	Societal challenges
Risks of innovation	Strategic short-sightedness	Organised irresponsibility	Technology-driven; technologically obsolete
Broad vision of innovation	Arms development and control	Simultaneous development of technology, economy, debate and regulation	Value-driven digitalisation: people and public values central

2.3.3. Economic prosperity: Belief in technology and society

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n terms of economic prosperity there is a very real fear that a country will fall behind technologically and therefore economically. On this point, Vande Reyde, a Flemish member of parliament for Open VLD (liberal democratic party), is of the opinion that there has been too little focus on the passage in the Flemish government agreement: 'Flanders wants to work on the roll-out of 5G' (Reyde 2019). According to Vande Reyde, this got far too little attention during the debates held in the Flemish Parliament, and yet the roll-out of 5G is the policy resolution that will probably have the biggest impact on Flemish society. He warns that Europe, Belgium and Flanders are going to miss out to China and America in the area of 5G. Vande Reyde has a point: one of the important roles of government is to stimulate innovation so that a country can remain competitive. From the perspective of responsible innovation it is important here to address the societal embedding of technology. How much attention is paid to the impact of innovation in innovation policy, and what is being done to steer innovation in the desired direction?

Let me zoom in on how the Flemish government sees its role in the area of artificial intelligence (AI). During the plenary meeting of the Flemish Parliament on 22 May 2019 an interesting get-together took place between two members of the N-VA (New Flemish Alliance), a Flemish nationalist and liberal conservative political party. Member of parliament Gryffroy made the statement: 'I am an engineer. I believe in technology.' He then asked his party colleague Muyters, the Minister for Work, Economy, Innovation and Sport: 'What is the role of the Flemish government when it comes to stimulating AI on the one hand but also responding to those challenges and those more negative connotations on the other?' The minister outlined three roles: 1) investor in scientific research, 2)

stimulator and facilitator, and 3) awareness-raiser and trainer. The first role is self-explanatory. The second role is about informing the general public and raising awareness among small and medium-sized companies so that they don't miss the boat. The third role concerns training young people and re-training employees. In order to stimulate the dialogue on ethical issues and to give the government advice on this subject, the Knowledge Centre for Data and Society was set up (see also Flemish Policy Plan on Artificial Intelligence of 2019).

This view of innovation clearly ignores the technological dream. And yet it is still largely defined on a techno-economical basis. In order to clear the way for technology and economic activities, various social preconditions need to be created, such as providing information to businesses and citizens, training (future) employees and adequately addressing ethical issues. Nonetheless, there is still a real fear that the ethical dialogue will get in the way of the 'progress' of technology and economy. The Flemish Policy Plan on Artificial Intelligence (2019, 2) states that there are often legitimate concerns about ethical, legal and other issues, but that discussions about them 'frequently get stranded on possible undesirable or even negative consequences, without looking at what kind of new opportunities AI can bring about for existing societal challenges.'

In responsible innovation, society is not a precondition but the starting point, and technology and economy are the means. When modelling innovation from a public perspective, social desirability and societal challenges are central. Social issues are not feared, because they must guide innovation. So there is a change of perspective. The issue is no longer about digital technology that has to be embedded in society, but about shaping the digital society. This requires a capacity to give direction to the energy and vitality of innovation from the perspective of social ambitions and public values (Est et al. 2019).

Innovation also needs to be interpreted broadly – i.e. from a technological and social angle. To complement Gryffroy's pronouncement, here is another motto: 'I am a citizen. I believe in technology *and* society'. Social innovation is concerned with economic innovation (new earning or organisational models), political and social innovation (development of new language, public debate and political paradigms) and ethical and legal innovation (new moral frameworks and/or legislation). Shaping the digital transition requires attention and concomitant investment in all these types of innovation. After all, history teaches us that digital developments can happen very quickly and can have disruptive, sometimes catastrophic effects. If there is no simultaneous injection of energy into governance of digitalisation, then the public debate, our ethical thinking and laws and legislation, lags almost proverbially behind the technological development. But if society lags behind technology, this is a political choice. To put it more bluntly, following the technological dream was a political choice that has given free rein in the last twenty years to a 'culture of lawlessness and irresponsibility' (Nemitz 2018) in the area of digital innovation.

Developments in the area of, for example, face and emotion recognition and in the field of virtual reality (VR) – both applications of AI – require concomitant innovation and sometimes even a radical re-thinking of the way in which we look at and regulate digital innovation. In the area of VR there is a growing divide between the lack of political interest in the many social and ethical issues associated with VR on the one hand, and the need for timely development of frameworks in which to embed this technology on the other (Snijders et al. 2020). According to the Rathenau Instituut, the most fundamental question here is the extent to which VR should be regarded and regulated as biomedical technology (ibid.). The reasoning behind this is that the merging of the computer, the camera, biometric sensors, the VR glasses and the body is giving rise to an increasing number of possibilities for influencing individuals in real time and unobserved. In short, VR glasses cannot be regarded and regulated as a simple gadget; instead it is an intimate technology that is challenging politics and government to simultaneously develop timely frameworks in order to oversee the embedding of VR.

2.3.4. Social welfare: Value-driven digitalisation

Innovation in the area of education, government services, care and the living environment is not primarily about technological superiority or economic competition, but social objectives, like public health and quality of life. During the stakeholder discussions, a number of lovely Flemish examples came up. John Baekelmans, vice-president of imec's IoT and Connected Health Solutions Group, told us about his own personal learning curve. (imec is the largest independent European research centre in the area of digital technology). Before he came to work at imec, Baekelmans worked for Cisco for 21 years, the last years as Chief Technology Officer for the Internet of Everything (IoE) Solutions group. At Cisco they sold the technology dream and they adopted a 'technology push' strategy. Baekelmans witnessed many mistakes being made when technology was used 'for the sake of technology' without taking into account the citizen. In his view, neither technology nor the government should take the lead in shaping the city. Instead it should be the citizen, because essentially it is about quality of life and whether citizens consider the living environment a good place in which to live. If public space is to be purposed democratically, participation on all levels is necessary: from local through regional, to the governmental and national level. While the Netherlands is wrestling with the question of how lessons and innovations can be upscaled on a local level, the smart city policy in Flanders is a regional story. Antwerp is a test and experimentation city, a so-called living lab, and anything that works well there can be rolled out to other cities.

Frank Robben was involved in setting up the Crossroads Bank for Social Security – the coordinator of e-government in social security – and the eHealth platform, whose aim is to improve the electronic service and information exchange in health care. During a stakeholders' meeting, Robben described four elements in the

successful digitalisation of these types of public services. Firstly, it is important to involve all key stakeholders in the innovation process (and ‘to keep out the battalion of lawyers who come to defend interests’). Secondly, with the help of those stakeholders joint principles and goals must be identified. Some of them are already laid down in legislation, such as the GDPR (General Data Protection Regulation) concerning data protection and privacy. Thirdly, it is important to decide what is desirable and what is undesirable, and to look for a balance between the two. So, for instance, at the Crossroads Bank it was decided that identification would be managed by the participating partners – since nobody wanted to outsource that task to an ICT giant like Apple, there is no app for the Crossroads Bank. Finally, the values and norms that are important need to be reflected in the design of the digital system. This relates to architecture politics: politics and ethics by design. In practice the design must, for example, ensure a secure system that respects the personal privacy of patients.

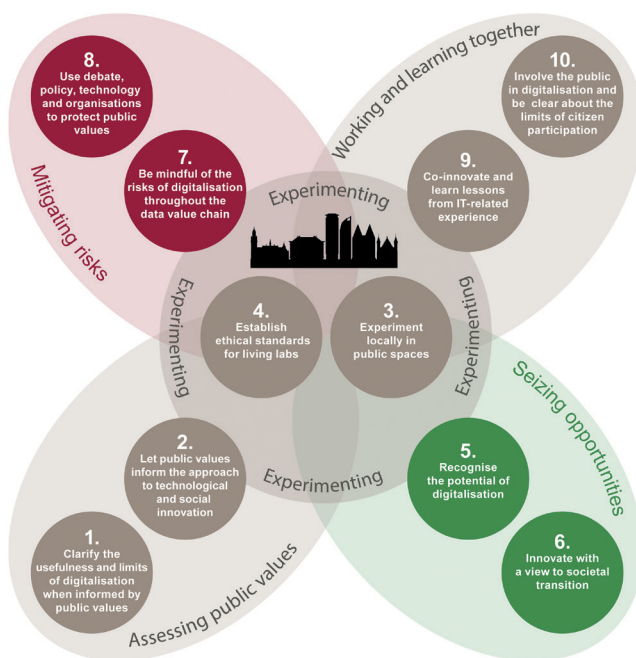


Figure 2. Value-driven innovation by means of five key innovation processes (source: Est et al. 2019).

The two examples from the previous two paragraphs are consistent with the perspective that the Rathenau Instituut refers to as value-driven innovation (Est et al. 2019). Value-driven innovation is about a constructive interaction between technical and social innovation. Five processes play a role here: assessing public

values, experimenting, seizing opportunities, mitigating risks and working and learning together (see Figure 2). 'Assessing public values' is about elucidating public values and objectives that people want to strive for. 'Experimenting' means making space for trying out new things. 'Seizing opportunities' means being open to the possibilities that digital technologies offer. The government undertakes to strive to ensure that our society can profit as much as possible from the blessings of digitalisation. 'Mitigating risks' involves protecting citizens as far as possible from the risks of digitalisation. Steering digitalisation in the right direction is a joint challenge. It requires coordination and cooperation between various levels of government and between diverse authorities and knowledge institutions, companies and of course citizens. 'Working and learning together' is the fifth ideal. The involvement of relevant stakeholders is crucial, but not always straightforward. There may, for example, be 'stakeholders' who do not wish to be involved or who are 'elusive'. How do you ensure, for instance, that children from families without an internet connection can still take part as a stakeholder in whatever way possible in the discussion about the digitalisation of education?

2.4. Final thoughts: The good digital life

In this essay I looked at how people in the Netherlands and Belgium and Flanders talk about and approach digital innovation. In both countries, there is no longer silence about how the information revolution has gradually and radically changed the world. It is no longer seen as open minded purely to sing the praises of digitalisation. The debate has transcended the technological dream. Both in the Netherlands and Belgium, the realisation has sunk in about how big and wide the impact of digitalisation is on society. Digitalisation no longer refers to a collection of gadgets but is now seen as a transition with opportunities and risks and a whole host of uncertainties. The transition perspective brings the question of the digital good life to the table and with it the key democratic question: What kind of digital society do we want to live in? (cf. Kool et al. 2018)

In both countries there is an awareness that digitalisation comes with numerous ethical, legal and societal challenges. In Flanders, the Knowledge Centre Data and Society was set up with that in mind. However, the question is whether attention to social and ethical issues is not too much seen as a compulsory activity; an appendix or necessary evil to legitimise digital innovation in political spheres. At the start of my essay I stated that the technological dream state manifests in the idolatrous worship of innovators and an aversion to critics. The Flemish Policy Plan for Artificial Intelligence (2019) still has an ambivalent attitude towards social criticism. On the one hand, it is clearly not possible to avoid difficult questions; on the other hand there is a fear that this criticism will throw a spanner in the technological and economic wheel.

This fear is both justified and unjustified. Justified because ecological, social and ethical aspects can indeed place limits on technology and economy. Unjustified because this choice between values should be viewed as a starting point for innovation. See above the opinion of Frank Robben and the perspective of value-driven innovation. By leaving behind the technological dream, we leave behind the myth that technological progress by itself leads to social progress and that economic innovation is obviously also positive from a public perspective. A broad perspective on innovation means that all kinds of relevant values and norms can play a role in guiding innovation. The question posed by ALLEA, the European umbrella organisation of scientific academies, about the relationship between economic growth and human dignity is therefore in principle a good question. I say 'in principle' because the proper handling of this question gives rise to a constructively more integrated discussion about digital innovation. In the worst-case scenario such a question can stoke fear and lead to a return to the technological dream.

Above I have shown what such a broad value-driven perspective on digital innovation means in terms of national security, economic prosperity and social welfare (see Table 3). National security is not sufficiently served by arms development. It is served by the least possible – depending on the state of the world – arms development and as much arms control as possible. The blind stimulation of digital innovation is giving rise to a great deal of techno-economic innovation and is also a formula for organised irresponsibility and social disasters. The trick is to make sure that technical and social innovation go hand in hand. That requires the simultaneous stimulation of both forms of innovation. That is precisely how Flanders modelled and continues to model digital innovation in the area of e-government and the smart city. The Rathenau Instituut advocates this kind of value-driven digitalisation in the Netherlands. In the case of socially driven innovation, Belgium and Flanders already seem to know how this can be done. Let that prove to be a boost for the modelling of the entire palette of digital innovation, so that it can make a positive contribution to the democratic search for the good digital life.

Postscript: 'Digital skills are important for hairdressers too'

As concerns the discussion on digitalisation, it seems to me a good idea to check how things are going in Flanders and Belgium with the governance of social and ethical issues that have arisen because of digitalisation. In the Rathenau study *Urgent upgrade* (Kool et al. 2017) and at the beginning of paragraph 3, there are more details on the sorts of questions involved here.

During the stakeholders' meetings, concern was often expressed about the huge digital divide that is threatening to emerge in Belgian society. There is a digital divide between teachers. And there is a digital divide between pupils. This latter

is perpetuated by the myth of the digital native: the idea that if kids grow up in a digital world, they will automatically become media-wise. The statement 'Digital skills are important for hairdressers too' by Greet Vanderbiessen (Katholiek Onderwijs Vlaanderen) made a deep impression on me. This sentence goes to the heart of the digitalisation challenge in three ways. Firstly, it shows that digitalisation affects everyone in society; secondly, it argues that digitalisation must have a positive prospect for everyone and so should be fair and inclusive. Finally, Vanderbiessen points out that every citizen has the right to digital training and skills. This is totally consistent with my opinion that technological citizenship is the democratic challenge of this century (Est 2016). Political-administrative institutions need to enable and stimulate three skills. Citizens must first be able to make optimal use of the benefits of technology. In addition, citizens must be resilient in the face of the risks of technology and protected against them. Thirdly, citizens must be in a position to take part in the public and political debate on the future of our digital society. Only then can citizens democratically claim their rights and responsibilities in the digital era. And that is why digital skills are important for hairdressers too.

2.5. References

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