

IDEALiC

Setting the Future Scene of e-Inclusion

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Axis 5: Major societal challenges



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IDEALiC Setting the Future Scene of e-inclusion

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FINAL REPORT

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ABSTRACT

The IDEALiC project focused on developing the future digital inclusion policy for Belgium at local, regional and federal level. By way of an interdisciplinary approach combining qualitative ethnographic research, comparative case studies, policy analysis and a quantitative analysis, the IDEALiC project provided (a) answers to the underlying aspects that influence an autonomous and independent use of ICTs; (b) a comprehensive state of the art of digital inclusion policies and practices in Belgium; (c) an in-depth understanding of the experiences with digitization by citizens from a life course perspective, aged 18 to 70; and (d) a clearcut view of the extent to which suppliers of digital services take the needs of vulnerable audiences into account in design and development. Overall, it is clear that digital inequalities are largely underestimated by policy makers and suppliers, whereas civil society invests heavily in activities to ensure all citizens can participate in a digitized society.

1. INTRODUCTION

The ongoing digitization of services – both public and private – leads to an increased risk amongst the general population of being or becoming digitally excluded (van Dijk, 2005; Helsper, 2008). The so-called *digital turn* is as such posing a threat for all individuals that do not have the necessary digital skills to handle the digitization of the various life domains (Helsper, 2011). Though significant scientific effort is given to research on e-inclusion in Flanders, Wallonia and Belgium as a separate entity, knowledge is lacking about the extent to which the digitization of services, routines and practices in for example schools, mobility or welfare, is hampering the ability of individuals to participate fully in society. Recent studies have shown that the socio-economic background of individuals no longer solely defines digital exclusion, and moreover, that mechanisms of digital exclusion go beyond socio-economic vulnerable groups (Brotcorne et al., 2009; Schurmans and Mariën, 2014).

Consequently, this implies that there no longer is a clear view on the groups at-risk of being or becoming digitally excluded. The traditionally defined two-folded and dichotomous categories of included versus excluded population groups – e.g. rich versus poor; young versus old; male versus female or employed versus non-employed – are no longer valid. Consequently, new and more contextualised approaches are needed to identify those at-risk of being digitally excluded. Moreover, research by experts in the field such as van Deursen and van Dijk (2014), emphasize that digital skills and the ability to deal with digital media in an autonomous and strategic way are of increasing importance to ensure one's full societal participation. This move towards strategic goals and added value gained through the use of digital media is also visible at the level of e-inclusion policies that have shifted from the mere provision of physical access to broader societal goals such as empowerment, inclusion and participation (Zillien and Hargittai, 2009; Witte and Mannon, 2010; Mariën and Prodnik, 2014).

Hence, the IDEALiC project centrally addresses e-inclusion (*topic 1*) and aims at developing updated and systemic knowledge of e-inclusion today, in alignment with international research but rooted in the characteristics of the Belgian society and population. The central research question of the IDEALiC project is how e-inclusion policies and initiatives can provide solutions for the mechanisms of digital exclusion that coincide with the *digital turn*. Moreover, the project focuses (a) on defining future e-inclusion challenges – cf. how the *digital turn*, and more in particular the relation between individuals and the digitization of society and services, is leading to new divides and new groups at-risk of being digitally excluded – and (b) on identifying potential e-inclusion policy solutions – cf. through an in-depth analysis of current and potential e-inclusion actors, their possible roles and responsibilities, and the formulation of actor-driven and action-oriented policy recommendations. The IDEALiC project aims to address these issues by focusing on setting the new scene of e-inclusion for the upcoming years. It was done so by studying e-inclusion from various future-oriented and innovative angles:

- (1) A theoretical reconsideration of digital exclusion mechanisms, digital skills and frameworks of e-inclusion policies;
- (2) An analysis of experiences of e-inclusion along the life course, through extensive user research amongst 90 respondents (cf. 45 in Flanders, 45 in Wallonia);
- (3) An examination of the challenging relation between institutions, the digitization of their services, and their clients by way of 3 case studies; and
- (4) An identification of current challenges and solutions for e-inclusion policies at regional, national and international level through a participatory and action-oriented approach.

The interdisciplinary character of the IDEALiC project relied on:

- *The integration of different methodological approaches*: the proposal combines qualitative user-oriented research, comparative research and policy analysis; it also entails basic quantitative data-analysis from existing data sources.
- *A multidisciplinary research team*: the researchers of both partner institutions have backgrounds in communication sciences, sociology, and science-technology-society (STS). Their methodological skills include qualitative methods in social sciences, participatory and comparative research, including both qualitative and quantitative methods, and policy research. As both partners have recently contributed to the design of action plans for e-inclusion at national and regional levels, their experience in this area, together with their network of close contacts with stakeholders from civil society, policy and industry, will allow for a targeted and highly relevant translation of research results into policy outcomes.

2. STATE OF THE ART AND OBJECTIVES

The increasing digitization of public as well as private services is progressively posing a threat for individuals and communities that do not possess the necessary tools and competences to handle the new digital ecosystems. Yet, although research has been conducted around digital inclusion in Flanders, in Wallonia and at the national level, our knowledge regarding mechanisms of in/exclusion, as well as their impact on the societal participation of citizens, remains limited. Indeed, recent studies (van Deursen and Helsper, 2018; Helsper and Reisdorf, 2017; Brotcorne and Valenduc, 2009) have shown that the traditional discourses correlating digital exclusion with social exclusion and deprivation are no longer valid. As a result, there is no longer a clear-cut view on the groups at risk of being excluded since the classical dichotomies – rich/ poor, young/old – are no longer entirely significant. Therefore, a new and contextualized approach is needed to provide a refreshed understanding regarding the mechanisms influencing processes of in- exclusion.

Moreover, several experts such as van Deursen and van Dijk (2014) outline the fact that societal participation is more and more predicated on the ability of citizens to use digital technologies in an autonomous manner. This shift towards the development of strategic competences is already observable in recent e-inclusion policies, focused today not solely

on the provision of physical access to technologies, but increasingly emphasizing the use of technologies to achieve broader the societal objectives such as social integration or civic participation. Hence, the IDEALiC project builds on such developments to (a) establish the future scene of digital inclusion, and (b) provide solutions in line with the current digitalization of society.

The central research question of the IDEALiC project is how e-inclusion policies and initiatives can provide solutions for the mechanisms of digital exclusion that coincide with the *digital turn*. As such, the IDEALiC project aims at developing updated and systemic knowledge of e-inclusion today, in alignment with international research but rooted in the characteristics of the Belgian society and population and as such aims at setting the new scene of e-inclusion policy for the upcoming years. To realize this, it will build upon the expertise present within the partner consortium. Both teams, imec-SMIT and FTU Namur, are leading research institutions in the field of e-inclusion, respectively in the Flemish and Walloon Region, and their expertise is situated at local, regional and (inter)national level.

The objectives of the IDEALiC project are fourfold:

First objective: Theoretical answers

To provide answers to the most prominent theoretical questions that are systematically brought to the fore in (inter)national research on e-inclusion, namely the conceptual evolution of e-inclusion towards empowerment, inclusion and participation; the complex nature of digital skills and the importance of aspects such as autonomy, self-efficacy, soft skills; and the changing nature of frameworks for e-inclusion policies from delivering access to a complex set of aspects such as (in)formal training, technical support, awareness raising...

Second objective: Redefining those at-risk from a life course perspective

To redefine the groups at-risk of being digitally excluded by an innovative and new empirical approach that consists of considering experiences of e-inclusion from a life course perspective. Mapping usage patterns is highly complex and particularly difficult because of the reciprocal influence of determinant characteristics – eg. socio-economic background, skills, attitude, support networks, quality of access, etc. (Helsper, 2012). An explicit focus on life stages allows to grasp meaning through a focus on life events, life experiences and attitudes. Moreover, it enables an in-depth understanding of the subjective perceptions of individuals and the complexity, ambiguity and dynamism of their use of new media; along with their particular experiences regarding the acquirement of digital skills. Hence, instead of focusing on traditionally defined dichotomous and SES-oriented categories, new qualitative data amongst 90 respondents based upon three distinct life stages will be gathered and analysed. This will furthermore be complemented by three case studies in which the consequences and strategies of the digitization by (public) services suppliers will be examined and critically approached. Particular attention will hereby be given to the

specificities of different technologies (eg. mobile, apps, tablets, internet...) and how these influence usage patterns and experiences when engaging with digitized services.

Third objective: Extensive state of the art of e-inclusion in Belgium

To deliver, but also go beyond, an extensive state of the art of e-inclusion in Belgium at local, regional and (inter)national level, by examining available quantitative data, existing e-inclusion policies documents, conducting expert interviews and by defining what non-involved actors or currently lacking actions, strategies and initiatives could bring e-inclusion policies in Belgium to the next level.

Fourth objective: Policy recommendations for future e-inclusion strategies

To formulate policy recommendations, based upon two distinct participatory action-oriented brainstorm sessions in which a diverse set of actors active in the field of e-inclusion in Flanders and Wallonia are brought together to discuss the results of the various research parts of the IDEALiC project and as such enable the process of identifying the most prominent challenges and policy-related solutions that are needed to ensure a sustainable and successful e-inclusion policy in Belgium. Moreover, in order to deliver policy recommendations that are of value to a large number of actors in the field of e-inclusion instead of being merely driven by top-down scientific reflections, the IDEALiC project aims to involve additional actors from civil society, public institutions, policy departments, private companies, local governments and academics by organizing two public workshops, respectively on the draft results of the theoretical reflections and on the draft policy brief with preliminary policy recommendations will be discussed.

3. METHODOLOGY

The IDEALiC project consists of 6 work packages. Whereas WP5 entails the integration of the research results of the overall project and the final formulation of policy recommendations, each of the previous WPs (WP1 to WP4) is based upon specific scientific methods designed to reach the targeted objectives.

- WP1: Setting the new scene of e-inclusion
- WP2: User research: Experiences of e-inclusion at micro-level
- WP3: Case studies: Institutions versus individuals
- WP4: e-Inclusion policies in Belgium
- WP5: Conclusions and policy recommendations
- WP6: Project management, communication and valorization

Conceptual work: Setting the new scene of e-inclusion

The concept of e-inclusion

A first step of the research consists of a systemic review of the recent literature on digital divide, digital inequalities and digital exclusion (Brotcorne, D.1.1, 2016).

Firstly, the literature review goes beyond the traditional views on digital divide, digital inequalities and digital exclusion by integrating a sociology-driven perspective, which in turn highlights the direct relation between social stratification, existing structural inequalities and digital inequalities. It highlights the importance of the need to always consider digital inequalities beyond the mere digital aspect of it. It emphasizes that digital inequalities always need to be framed within a broader societal view and a multifaceted approach that takes into account those elements that influences one's social position in society and how these influences one's abilities and opportunities to engage with digital tools.

Secondly, an important additional value of the literature review, especially with regards to the field of research internationally, is that it not only highlights the importance of approaching digital inequalities from a broader societal perspective, but also summarizes a number of critical theoretical approaches that should be applied in future research. It emphasizes that studying digital inequalities is not about defining a certain state of the art in terms of people's access to technologies, their level of digital skills or their lack of motivation to engage with technologies. Instead, the literature review arguments that research on digital inequalities should focus on the effective and observable impacts of different types of online engagement on the degree of individuals' social inclusion, participation and empowerment. Studying digital inequalities requires a more in-depth sociological approach to the 'real' social effects of digital (dis)engagement.

Thirdly, it puts forward a stringent critique towards studying digital inclusion through the sole lens of user-centric approaches. This prevalent perspective in digital inclusion literature tends to overemphasize the role of individual agencies and individual choices in the process of digital technology appropriation. Instead, it tends to lack attention to the wider structural context – social, economic, political and technical factors – that shapes individuals' choices with regard to their engagement with digital technologies in the current context of the digitized society.

Fourthly, the literature review goes beyond criticizing current approaches by proposing an innovative sociological approach – from a life course perspective – which to date, has rarely been employed in context-oriented analyses in respect to digital inequalities.

The concept of digital skills

A second step of the conceptual approach consists of a theoretical review of the scientific literature that focuses on conceptualizing and measuring digital skills (Iordache et al., D.1.2, 2016).

Firstly, the literature review concentrates on a highly under researched area, namely on how digital competences are related to other transversal skills such as problem-solving skills,

self-efficacy, determination and autonomy, as a way of unravelling to what extent these underlying competences need to be developed prior or simultaneously with general digital competences. It therefore starts from a theoretical exploration of each of these concepts in order to define to what extent these personal attributes are relevant to the development of digital skills.

Secondly, the literature review creates a comprehensive and clear-cut view on how digital skills are conceptualized differently in current studies, and moreover how this influences practice-oriented models in the field of digital inclusion. Contrary to common practice, it uses the so-called quick-scan analysis in order to quickly, yet profoundly, analyse the 13 internationally most common digital skills models. Applying a quick-scan analysis in a literature review is not a common practice yet it brings several advantages.

e-Inclusion in Belgium, preliminary quantitative analysis

The conceptual framework has been completed by an overview of quantitative analysis of survey data concerning the social dimensions of usages of digital technologies and services, according to basic socio-demographic characteristics of the Belgian population (Valenduc, D.1.3, 2016). It addresses two main topics: on the one hand, the identification of non-users of Internet and the evolution of the population of non-users over the past ten years; on the other hand, a statistical mapping of differentiated usages of online services according to age, gender, education level and income level. In addition, some comparisons are established with neighbour countries. Statistical data come from the Eurostat Community Survey on the Information Society (CSIS).

This overview exploits the household part of the CSIS survey, covering households with at least one member is aged 16-74 years, and individuals aged 16-74 years. Information on access to ICT is collected at the household level, while data on the use of ICT is collected at the individual level. At the end of the project, this overview was updated.

User research: Experiences of e-inclusion at micro-level

The life course perspective

Since it is essential to study digital inequalities and digital inclusion from a broader contextual perspective, a life course approach allows individuals' life progression and the consequences of digital differentiation to be looked at according to the evolution of both circumstantial and structural aspects that define people's various needs, wants and constraints (see Faure and Schurmans, D.2.3, 2019).

The life course perspective uncovers specific moments or turning points in lives that triggered or halted the use of digital technologies. It allows a dynamic understanding of the meaning individuals attribute to ICTs and whether one or more life events have had an influence on digital uses. The role played by digital technologies in these life events, their

impacts on an individual's life course, their evolving status and the relationship individuals maintain with ICTs are the points of interest.

The aim of this approach was to uncover specific moments or turning points in life that triggered or halted the use of digital media, in order to see whether life events have had, or still have, an influence on the current use of digital media. Thus, tackling the issue of digital exclusion from a life course perspective is an innovative standpoint insofar as it enables a dynamic understanding of the meanings individuals attribute to their uses of digital technologies. It also sheds light on the complexity and ambiguity of their uses, and their societal outcomes according to the particular life events encountered. Indeed, an explicit focus on life stage groups allows one to grasp, through life events (e.g. marriage, birth, studies, etc.), the meaning of life experiences, attitudes and their impacts on the development of digital uses.

The life course perspective refers thus to a sequence of activities or events embedded in individual lives and seeks mapping, explaining and describing changes in social positions over time (Elder, 1994; Mayer, 2009). This approach states that individuals at each life stage experience specific life transitions. Further, the notion of life stage refers to the social positions and roles an individual occupies over time. From this viewpoint, each transition corresponds to a significant step in life, which not only modifies the social status and role of individuals, both from objective and subjective standpoints, but also their participation in different social spheres.

In addition to these instituted transitions, the life course approach insists on taking into account the singularity of individual paths and thus pays attention to the discontinuities and ruptures in existence. These biographic ruptures could be of professional purposes (e.g. unemployment, reconversion, etc.), in personal life (e.g. divorce, illness, accident, etc.) or even geographical (e.g. relocation, immigration, etc.). Biographic ruptures have an effect, as a life transition does, on the social status and role of individuals (Van de Velde, 2015).

As such, the life course approach focuses on the changes in human lives and apprehends individual trajectories as “the outcome of personal characteristics and individual actions as well as of cultural frames and institutional and structural conditions [...] viewed in the context of collective contexts” (Mayer, 2009:414).

Framed in this research, the life course perspective intends to understand the development of digital autonomy as:

- The outcome of personal characteristics and individual action, understood, on the one hand, as the influence of socio-demographic variables and, on the other, as the inclusion of human agency in the trajectory;
- The outcome of societal norms, and how they are integrated and constitute possibilities and constraints that influence the use of ICTs;

- Emanating from collective contexts, more precisely from social interactions of different natures, from the most formal to the most informal.

This said, this research is built upon interviews with 85 respondents distributed across the three following life stages (Mayer, 2009):

- The first life stage (18 to 30 years old) is the period in which young people are building autonomy in all domains of social life (e.g. employment, relationships, etc.) and steadily increasing their social, economic and political participation in society.
- The second life stage (31 to 50 years old) corresponds to a period in which individuals are assumed to have developed autonomy and participate fully in society. However, the challenge for these individuals is to maintain this autonomy and full participation while at the same time managing the balance between private and professional spheres.
- The third life stage (51 to 70 years old) can be characterized by the desire to remain active participants of society and to remain independent while ageing is considered an increasingly important policy challenge.

On the one hand, this research focuses on the development of digital autonomy within the life course perspective. Put differently, the aim of this project is to analyze experiences of digital vulnerabilities in each of the above-mentioned life stages. Analyzing different age groups is valuable for further e-inclusion policies for at least two reasons:

- Working on the gap between what is expected by individuals as “young adults”, “adults” or “seniors” and what one actually does, according to one’s life circumstances, can lead to more contextualized approaches of inclusion that take into account the needs of individuals, but also tackle digital stereotypes;
- While focusing on the development of digital autonomy from within each life stage group, a partition into three life stage groups can lead to a renewed approach of intergenerational support for inclusion, as the analysis by life stages can point out with precision what the weaknesses and strengths of each generation are and work on those variables for further inclusive e-policies.

On the other hand, this research focuses on the development of digital autonomy beyond the life course perspective. The strength of this approach is that it allows to move beyond the traditional emphasis on quantitative analyses to look at digital practices across the three (3) life stages: when it comes to having access to technology, what experiences are present among three life groups? How and where do experiences differ across the three life groups?

Life practice narrative interviews

The data used in this research come from empirical individual in-depth interviews conducted by both UCLouvain-Fondation Travail-Université (French-speaking respondents) and Vrije

Universiteit Brussels (Dutch-speaking respondents) teams. The interviews were designed as semi-structured life practice narrative interviews (Laviolette, 2016).

An interview guide was developed as guidance for each research team with a set of topics and questions to be covered during the interviews. However, far from being a constraining protocol, the interview guide functioned more as a reminder, with each research team encouraged to add extra questions when relevant areas emerged. The interview guide was thus divided into seven themes.

Table I: Thematic sections of the interview guide

THEME	
PRESENTATION	This section was aimed mainly at putting the respondent at ease by allowing him or her to present him-/herself and gave particular attention to potential life transitions or biographic ruptures.
EQUIPMENT, USAGE AND LEARNING PROCESSES	This section looked at the types of uses of digital media and the learning processes of the respondent. It addressed the uses and non-uses, frequencies, places and circumstances of access and use. It also focused on the evolution of competences, as well as the potential obstacles encountered. The aim of this section was to understand the importance of digital media in the daily life of the respondent along with the understanding of usage patterns and levels of digital skills.
IMPACTS OF ICT USES IN DIFFERENT LIFE DOMAINS	This section was related to the impacts of digital media in the different life domains (private life, social life, professional life, etc.). The purpose was to identify the determinant life phases and pathways of the respondent to see how digital media influenced life trajectories and vice versa. Interview cards with pictograms were used to inspire the respondent and start a discussion about the uses and impacts of digital media over the life course.
ROLES OF ICT USES IN THE DIFFERENT LIFE DOMAINS	Following the life course perspective and its emphasis on life transitions and biographic ruptures, this section focused on the positive and/or negative effects of digital media for the respondent during these life events. For instance, was using digital media helpful in finding a job or did the frequency of use change with retirement?
EXPERIENCES OF USE WITH ONLINE SERVICES: HEALTH CARE, MOBILITY AND	This section was dedicated to the digitization of services in order to establish possible relations between this work package and the case studies undertaken for Work Package 3 ¹ .

¹ See D.3.1. to D.3.4., to be published in 2019.

ADMINISTRATION	
DIGITIZATION OF SOCIETY	The aim of this section was to understand the perceptions and opinions of individuals with regard to the increasing digitization of services, both private and public. Building on the previous themes, the respondent was asked whether she or he had the feeling of being pushed toward more use of digital.
FINAL QUESTIONS OR REMARKS	The last section was left entirely at the disposal of the respondent for added questions or remarks about the research process, and for comments on themes judged unexplored.

Selection criteria for the respondents

The project teams agreed on a set of criteria for selecting respondents:

- life stages: the methodological choice of three life stages for this report refers to current standards in biographical models, commonly used in European social policies (Mayer, 2009);
- spoken language: French or Dutch;
- education level: divided into three categories related to the last diploma obtained:
 - low education level (max. middle school diploma);
 - medium education level (max. high school diploma)
 - high education level (min. bachelor degree);
- gender;

Further, two additional variables were introduced and taken into account when collecting interviews:

- the professional status of the respondent: employed or not, student or retired;
- the declared degree of familiarity with ICTs: according to the frequency and intensity of use.

With respect to these selection criteria, the objective was to equally spread the profiles to allow us to gather diversified discourses and life trajectories. By doing so, the purpose was, for each linguistic part, to have a minimum of two respondents by subcategories of gender and diploma. Conducting qualitative analysis, the choices for sampling were not driven in terms of statistical representativeness but sought for variety in the individual stories collected. The aim of such an approach was to grasp the similarities and divergences in the uses of, and relations with, ICTs for individuals belonging to the same life stage group and across these life stage groups.

Table II: Overview of the 85 interviews investigated for IDEALiC research

	18 – 30 Y/O		30 – 50 Y/O		50 – 70 Y/O		TOTAL
	F	M	F	M	F	M	
LOW EDUCATION LEVEL	3	6	2	5	6	5	27
MEDIUM EDUCATION LEVEL	3	3	5	3	7	4	25
HIGH EDUCATION LEVEL	5	4	5	6	4	8	32
UNDETERMINED					1		1
TOTAL F/M	11	13	12	14	18	17	85
TOTAL	24		26		35		

Interviews were conducted in two phases: a first wave was conducted between April 2017 and June 2017 and a second wave of interviews took place between February 2018 and April 2018.

Analysis

NVivo® was used for the analysis. One of the main advantages of using this software for qualitative research is that it leaves room for the creativity of the researcher insofar as it allows a deep focus on underlying themes, interpretation and theory instead of the time-consuming copy-cut-paste process of traditional data collection. Hence, it ensures easy, efficient and safe coding as all sources and data are stored under the same roof and consequently available to be reused.

As IDEALiC was a collaborative endeavor, a research routine had to be elaborated in order to ensure that both teams would be able to work together while managing large volumes of complex data. For this reason, a codebook was elaborated with a list of themes and nodes that emerged inductively from the observation of the data.

The codebook was divided into six different themes inspired by the interview guide. Each theme was subdivided into a series of thematic subcategories (nodes) to encompass the various aspects of each theme. The six main themes are briefly presented below.

Table III: Main theme of the coding tree

THEME	
TRAJECTORY	This theme gathers nodes related to the informant's life course, in relation or not to ICT, as triggers of use and non-use, life transitions and biographic ruptures.
CONDITIONS OF ACCESS AND	In this theme were all the nodes related to the material and spatial conditions of access to digital technologies. The nodes specified the

USE	type of equipment and places of access, with the possibility to indicate the multi-accessibility of informants.
DIGITAL ENGAGEMENT	Nodes within this thematic group were intended to specify the characteristics of one's use according to different life domains and gathered nodes related to frequency of use, types of use, applications and the degree of choice to use or not digital technologies. This theme also contains nodes related to social representations about digital technologies and attitudes toward them.
AUTONOMY	Based on the Digital Competence Framework for Citizens of the Joint Research Centre of the European Commission (Carretero, Vuorikari, & Punie, 2017), this theme develops the features of digital autonomy in terms of skills (basic, intermediary, advanced) and social support (from and for others).
OUTCOMES	This theme focused on nodes related to the outcomes and consequences – both objective and subjective – of ICT uses or non-uses.
PERCEPTIONS	This theme was used as an analytic tool to gather individual perceptions of one's relationship with technology, whether it is about uses or representations, on a scale of negative, neutral or positive perceptions.

Case studies: Institutions versus individuals

The general objective of the research was also to investigate digital exclusion through the prism of general interest service providers by questioning how their digitisation policies influence their ability to offer services that are accessible to all users. This question is particularly relevant to bodies of general interest, which are founded upon the principles of equal treatment of users and continuity of service. Therefore, it is particularly relevant to question how these organisations articulate the digitisation of their services with respect to their missions. More specifically, this research aims to understand the place and the role of digital inclusion in the process of digitising services within three general interest organisations in Belgium. This research also questions the way in which professionals represent and involve users in design work.

The methodological approach is based on case studies carried out within three general interest organisations in Belgium. This approach combines documentary analysis and semi-directive interviews with ten stakeholders involved in the digitisation of services within each organisation.

A multidimensional aspect characterises the notion of general interest services. These services can take different forms across European countries according to their state model. Nevertheless, despite these variations, one can adopt a broad and functional conception of

public services which encompasses a wide range of activities of different natures (e.g. public transport, health care and administrative services) and takes different organisational forms (e.g. public institutions, associations and mutual societies). However, their common basis is to pursue a mission of general interest in order to meet collective needs that evolve over time and space. This common basis requires them to respect identical principles – first and foremost, the principles of equal treatment of users and continuity of public service.

The first case study was carried out within a regional public transport company. The survey focused on two online services: a new version of the company's website and a mobile application under development at the time of the survey. The second case study took place within a mutuality. It concerned a social insurance organisation for health (e.g. illness, accident and prevention) and a social movement. The survey focused specifically on two online services: a new version of the organisation's website and the newspaper's website for affiliates, the latter of which was under development at the time of the survey. The third case study examined the organisation in charge of the digitisation of regional and municipal authorities. The survey focused on two online services: a single electronic access point for regional and local government services and a regional information portal.

The qualitative analysis of the interviews was based on the theoretical model of economies of worth (Boltanski and Thévenot, 1991; Boltanski and Chiapello, 1999) as well as on the sociology of translation (Akrich, Callon and Latour, 2006). It aimed to capture the arguments used by the stakeholders to justify the role of digital inclusion in their digitisation of services as well as the choices made concerning the methods of user involvement implemented during the design process (see Bonnetier and Broctorne, D.3.4, 2019).

4. SCIENTIFIC RESULTS AND RECOMMENDATIONS

Theoretical reconsiderations: moving issues of the digital divide debate

With the increasing democratization of internet, policies and academic debates have long revolved around the idea that the development of digital technologies would revolutionize the way people live and interact with each other. The digital divide, defined as “the gap that separates segments of society as well as whole nations into those who are able to take advantage of new ICT opportunities and those who are not” (OECD, 2000:3), is based on deterministic assumptions that mere physical access to technologies will automatically lead to a full use of ICTs. This traditional conceptualization does not take into account the diverse social and cultural contexts in which technologies are embedded; rather, it tends to imply a singular demarcation between the digitally engaged and the digitally disengaged, between those with access to a computer and those without access (Halford and Savage, 2010).

With this definition in mind, numerous policy strategies and academic research have focused on studying access to and use of technology with the idea that socio-economic status was the sole predictor of digital engagement. Put differently, the binary framing implied by the digital divide understands inequality as a matter of differences in technical apparatus

between urban/rural populations, rich/poor, or young/old. Yet, as more people gained access to digital technologies, observers started noticing that certain kinds of people (whites, males, wealthy...) were more likely to reap the benefits from the internet than others. The strong differences amongst people with formal access encouraged researchers and policy makers to move from binary oppositions towards an understanding the inequalities exacerbated by digital technologies.

The ongoing digitization of society at work over the past decade calls for a reconsideration of the categories of inclusion and exclusion since there is no longer a clear view of the groups at risk of being or becoming digitally excluded. Indeed, the mechanisms of digital exclusion no longer only affect socio-economically vulnerable groups, and solutions should go beyond the mere provision of material access and digital competences. Furthermore, the diversity of uses and available platforms raises new issues for digital inclusion policies as digital technologies are increasingly embedded in daily life and have become all the more essential to engage in daily activities and social participation.

The research gives particular attention to the changing concepts of digital inclusion and exclusion, as well as to digital autonomy, i.e. the range of choice an individual has when it comes to the uses of ICTs in a specific context. To this end, this study analyses individuals' usages and experiences with digital technologies at certain life transitions and ruptures and aims to examine the divergences and convergences in the relation to ICTs and digitization that individuals share. The study is based on a qualitative approach, building on in-depth interviews which entail the perceptions and relation that an individual had and still has with ICTs through various moments of life (see Asmar, Mariën and Van Audenhove, D.2.2, 2019).

Towards capital-enhancing usage

Over time, the debate on the digital divide has shifted from the issue of inequalities of access to one of inequalities between individuals who are able to take advantage of their digital uses and those who are not. As autonomous and unrestricted access remains crucial, studies have shown that with equal access digital inequalities were increasingly marked in the skills needed to use ICTs. Since then, a large investment has been made in the development of digital skills. However, it appears that developing digital skills is strongly shaped by individuals' social context and their needs to use ICTs. Evidence suggests that nowadays these needs to use ICTs are more and more constant and permanent.

Autonomy and empowerment are two recurrent terms in digital inclusion policies. A common point in the way these notions are addressed is their understanding as individual resources: autonomy as an individual competence and empowerment as a process of gaining self-worth and personal power via the use of ICTs, especially among vulnerable groups, with an emphasis on individual agency and little attention to the role of community and collective matters.

Rather than gaining individual skills, digital inclusion should work to eliminate the social and digital barriers that hinder equal and autonomous access to social resources for inclusion. These resources — provided by society — are increasingly digitized; this exposes more vulnerable individuals but also generates new issues for well-integrated persons as the means of action toward the course of digitization tend to decrease, leading to disengagement and disempowerment.

The meaning of autonomy

The IDEALiC study focuses on ICT usage during an individual's life course and the meaning of these uses at some key points of personal trajectories. A central issue is the signification of autonomy and digital autonomy. Digital society conveys certain broadly shared norms that orient individual action and have a constraining effect, notably:

- Access characterized by the need for constant and individualized access for all in order to be able to achieve a growing number of activities.
- Modes of uses that concern the skills, expected competences and the modalities of online participation.
- Autonomy, a behavior characterized by individual continuous interest and learning (Brotcorne et al., 2011).

Following these norms, digital inclusion is focused on user-centered approaches for the development of digital skills. The aim of this research is not to study development of digital autonomy as the growth of digital competences. Instead, digital autonomy relates to the choice individuals have in this digital and social environment (Mariën and Prodnik, 2014), the way it makes visible forms of digital exclusion and thus gradually disempowers individuals. The definitions and the links between digital exclusion and digital autonomy are as follows:

- Digital exclusion refers to the excluded as those who do not conform to social norms and need assistance from society to enter the norms (Paugam, 1996, 2011).
- Digital autonomy is far more than a competence. It is the actual room for maneuvering an individual has in the face of choosing to use or not to use digital technologies and the consequence of this lack of choice that make situations of exclusion arise.

Finally, this project rethinks the concepts of autonomy and digital autonomy. This study does not argue for independence from others and ICTs at large. Instead, inclusion is about everyone having the right to access the same opportunities in the face of digitalization, which means having the basic resources for access and social integration provided. Further, as long as the ones who need assistance are defined according to social norms, action can not only be the responsibility of individuals but also of a movement of co-construction to open the margin to maneuver in light of digital uses, a movement towards a clarification of the role of digital technologies and a redefinition of digital norms.

The added value of the life course perspective

The impact on user practices

This study confirms that digital uses and life trajectories are closely related. This is expressed by the facts that (1) digital technologies intervene in a growing number of life transitions and ruptures, and (2) digital competences no longer concern only specific domains. In this sense, (3) life transitions and ruptures are key moments at which the lack of digital competences can harm and exclude the individual. Moreover, assessing the multiplicity of moments and manners in which ICT could intervene in individual life trajectories gives insights into the reasons why groups at risk of exclusion are becoming less clear than before.

Furthermore, this research shows that the development of digital autonomy is strongly linked to the life course, in the sense that each stage and rupture in life could lead to a use of digital technology that is increasingly constrained both by the situation itself and by the normalization of digital uses in these situations. This study argues that the construction of digital autonomy should therefore be analyzed according to four thematic axes which subsequently refer to the individual, circumstantial and collective conditions with which digital (and non-digital) practices accord.

The situations of uses

Understanding situations of digital exclusion rather than profiles at risk of digital exclusion is a central point that has emerged from our research. Analyzing the process of the development of digital autonomy from the perspective of at-risk situations of digital exclusion instead of at-risk profiles has two consequences. First, it shows that the profound digitalization of everyday practices has tangible implications for the whole population. Virtually each daily practice entails one or more digital actions at a certain moment in time. In this context, we should question what are or should be the limits of these ongoing process of digitization at every level of daily interaction. How can or should we guarantee an offline alternative for those who “choose” interpersonal exchange or a physical place over the digital, regardless of the underlying motivations? It is at this moment that tensions rise between the norms, as explained earlier, and personal choice. Secondly, it implies that the manner in which individuals act against at-risk situations of digital exclusion is decisive. Digital competencies per se do not define or divide the population into digitally-in or -out. Rather it is the way in which individuals’ experiences as well as the scope and quality of coping strategies on which they rely when confronted by these at-risk moments that creates new risks for social inequalities amongst and across seniors, adults and young adults.

The social participation through ICTs

Paths for social participation emerge from observation of the need for individuals to have more room to maneuver in their ICT uses in order to participate in an empowered manner. One of the perceived major weaknesses of digitization is that individuals often do not understand the underlying objectives or do not feel integrated into these digitalization objectives. Nevertheless, the study shows that inclusion goes beyond the focus on competence-driven approaches, and it embraces both the fight against digital exclusion and emergent issues of inclusion. These perspectives shall include the following insights:

- Public computer spaces still have a crucial role in terms of digital inclusion but also in terms of the struggle against social isolation.
- Accessibility remains problematic and complex with the multiplication of devices and platforms, such as material access.
- The relation to the written is still a problem for individuals that have no option to use ICTs.
- New questions concerning the modes of participation currently imposed by ICT design — the use of data, the constraints of design and the individualization of services — are emerging and encourage further reflection on critical approaches and how to regain power to act on these modes of functioning.

Choice as a key element in the relationship to ICTs

With respect to the representations of ICTs, one representation of digital technologies more central than others concerned progress. The idea of progress is used as a structuring explanation of the development of uses, with different degrees of coerciveness that diverge slightly between life-stage groups. Defined as unidirectional and irreversible change (Pollard, 1968), progress questions the idea of choice and injunctions to use ICTs.

The study offers an analysis of individual's relation to ICTs with respect to their choice to use them and the impact on participation within each life-stage group. The elements gathered can be presented as follows, with a common statement that autonomy from digital technologies is narrowing for everybody:

Table IV: Overview of digital autonomy across life stages

	YOUNG ADULTS	ADULTS	SENIORS
	CONNECTION	DISCONNECTION	NON-CONNECTION
RELATION TO CHOICE / PARTICIPATION ISSUE	The choice is about how to participate and construct participation through constant connectivity.	The choice is about making reasonable one to preserve a balance between private and professional life.	There is no choice to enter digital uses to avoid the risk of becoming more dependent on others.

Individuals are not concerned with the same transitions of life and the same familiarization with digital technologies. The following points offer the main findings for each life-stage group:

- For young adults, their age mostly arose as the reason for their digital competences, and it diminished—in their view and that of older people—some of the difficulties related to particular devices (computer uses vs. smartphone uses) or platforms (Word, Drive, etc.). Digital autonomy is quite low: digital uses are unavoidable at this time of life to manage professional and private spheres; it is thus characterized by a constant connectivity in all domains of life. This constant connectivity appears both as a condition of participation in society and the means by which individuals gradually feel disengaged from their ability to participate in society, as being mostly by their lack of choice in the ways to participate online and to decide how to use ICTs.
- For adults, the main approach of choice is organized around the separation between professional and private uses, and it is evaluated through the scope of utility. Active life is central to the conception of digital autonomy, as ICTs are seen as unavoidable for work and allow professional objectives to be achieved. Yet, personal uses are expressed as something that has to clearly bring an added value to daily life. This pragmatic approach to digital technologies, enhanced by professional life, is often translated to the private sphere where digital technologies are thus a practical means to engage in daily life, and new uses are evaluated by their utility in the managing of an individual's private life with less hesitation to disconnect if the utility is not perceived.
- Seniors, in contrast to young adults, are deemed incompetent by the simple fact of being older, and this is interiorized in their relations with ICTs. As they are slowly leaving active life, ICTs tend to become more central for individuals as a means to remain integrated with society. The choice to use digital technologies assumes the traits of a threat, as non-use is almost automatically associated with exclusion. Facing digital technologies is more about “not being overwhelmed” by the rapidity of digital progress than responding to precise objectives. Thus, the problematic relation to ICTs for this life-stage group is understood around the issue of non-connection and a low level of digital autonomy.

Throughout each age, individuals gradually feel deprived of their ability to choose as soon as it enters the digital sphere, and this deprivation of choice manifests itself differently depending upon the life-stage group concerned. Consequently, individuals are not “by default” users, and the adoption of a digitized service is a subject of reflection, where choice is highly related to a vision of participation to society. Further, negotiating choice does not only depend on the digital competences of an individual but also on more general representations about digital technologies which are reflected in an ambivalence concerning the positive individual benefits and the negative collective consequences of digitization. While certain individuals have some tools to deal with these negative collective perceptions of ICT, other more vulnerable persons, urged on by their need to use ICT to achieve minimal

access to social resources, undermine these concerns and thus are embedded in the world as disempowered individuals.

Varying perceptions of digital technologies

Attitudes towards ICTs give insights about what could enhance or break individual uses beyond competences and access. The table below details the main representations about the changes brought by digitization as revealed from the interviews:

Table V: Main representations on digitization

	PRAGMATIC DIMENSION	SOCIAL DIMENSION	COGNITIVE DIMENSION
POSITIVE ASPECTS	Gain of quantitative time	Strengthen bonds	Accessibility of knowledge and information
	Individual level		
NEGATIVE ASPECTS	Loss of qualitative time	Dehumanisation	Unsustainability and opacity
	Collective level		

Analysis shows that when respondents represent digital technologies and society, the positive aspects refer more often to concrete individual advantages, while the negative representations of ICTs are issues that concern collective levels and lead to forms of disengagement with respect to digital technologies. Likewise, these dominant representations emerge as a whole in the discourses; this shows how individuals are caught up in these ambivalences and find themselves having difficulty in stating a unique vision of digital technologies. These collective aspects are those over which individuals seem to have the least control and it is in this sense that they constitute important guidelines on the future of digitalization because how can we think about empowerment when individuals have little control over the collective aspects related to digital change.

The pragmatic dimension is organized around time. Rapidity and ease of use are the image of ICTs for individuals. Yet, this capacity for saving time benefits them under several conditions: continuous interest, technical competences and the ability to have free time to spare on learning and managing online activities. In that way, digital technologies are also negatively perceived as a loss of qualitative time that is characterized in: (1) a loss of reflection because the device does it all, (2) a loss of meaning for the way time is spent, and (3) a loss of human contact.

The social dimension concerns the ambivalence between the power of strengthening and of weakening social relationships that is attributed to digital technologies. ICTs participate in the strengthening of intimate relationships, especially for people who are emigrating or those who are descendants of immigrants, through the use of social media. ICTs also strengthen intimate relationships by creating intergenerational bonds between the young and elders, with a common subject of interest to share and the possibility to support others in learning. Conversely, digital technologies are represented as dehumanizing objects as social media and digitization of public services narrow the opportunities to maintain human contact due to the individualization of digital technologies. Yet, this representation enters the thoughts of individuals who have access and skills, whereas digitally fragile individuals live with a sense of social isolation and marginalization by virtue of not having a device and/or not using it.

The cognitive dimension concerns the ease of accessibility to information, i.e. if one has the ability to sort and choose from a mass of similar and constant information. The negative representations of Internet are principally turned toward the lack of transparency of the Internet. This lack of transparency is expressed on the one hand by a misunderstanding about the aim of personal data and on the other hand by a blurring concerning the impacts of the material existence of digital technologies in terms of ecological and social sustainability.

Who is at risk?

A spectrum-based profiling approach

The emphasis on life stages with the focus on the three life categories (18-30 y.o.; 31-50 y.o.; 51-70 y.o.) has proven to be a valuable way to look at digital inequalities from a broader perspective. The focus on life stages, instead of on the traditional socio-economic indicators (cf. the so-called S.E.S, i.e. gender, income, education) has allowed to reveal which contextual factors have a decisive influence on the (non-) use of digital media. It has shown for example that, for parents, having a child going to school is a decisive factor in their purchase of internet access. But also, that most of the respondents received their first smartphone at significant moments in life such as their first communion or their first day in secondary school. The type of employment heavily determines the opportunities people have to develop their digital skills. In-house ICT training is more prominently available in ICT-related jobs. Retirement amplifies the need for digital skills as the support networks available at work disappear, but it simultaneously opens up opportunities and time to follow trainings in order to improve digital skills.

All these insights allow to define pivotal moments in the use of digital technologies and make it possible, in the future, to include these pivotal moments in training and coaching programs. For example, seen the fact that most children receive their first smartphone prior to going to secondary education, means that already in primary school educational packages on media literacy, fake news, in-app purchases, privacy and the use of personal data in smartphone apps need to be available. As a next step, digital inclusion initiatives need to be informed

more in detail about these defining life events, so as to adapt their communication and implementation strategies accordingly and intensify their impact.

With regards to the profiles at risk, it is clear that contextual factors play an important role. In the first year of the IDEALiC project, 8 profiles of digital inequalities were developed based upon an extensive literature review. These 8 profiles present a renewed conceptual model that explains and explores the extent to which various (non)-users can be subjected to mechanisms of inclusion or exclusion. It combines both social and digital factors and is based upon an elaborated version of the continuum of social inequalities, as developed by Miliband (2006).

Table VI: Continuum of social and digital inequalities (Mariën and Baelden, 2015)

Continuum of social inequalities	
<i>Deep social exclusion</i>	Worst possible social position. Confrontation with multiple and overlapping deprivations that are intertwined and reinforce each other. Overall lack of agency and participation in society.
<i>Wide social exclusion</i>	Precarious social position. Confrontation with several deprivations that occur simultaneously. Participation in life domains is present but limited.
<i>Concentrated social exclusion/inclusion</i>	Position balanced between exclusion and inclusion. On the one hand confrontation with a small number of deprivations that are concentrated within certain life domains. On the other hand participation and inclusion in the remaining life domains.
<i>Wide social inclusion</i>	Advantaged social position. Broad participation in society. When issues of exclusion occur, they are rather easily overcome.
<i>Deep social inclusion</i>	Overall and full participation in all life domains. No prominent mechanisms of exclusion at play.
Continuum of digital inequalities	
<i>Deep digital exclusion</i>	Confrontation with multiple and overlapping digital exclusion barriers that are intertwined and reinforce each other. Overall lack of opportunities and support that stimulate access, use, motivation and the development of skills. The digital exclusion issues at hand cannot be overcome without intervention.
<i>Wide digital exclusion</i>	Confrontation with several digital exclusion barriers that occur simultaneously. Access and use patterns are present but limited.
<i>Concentrated digital exclusion/inclusion</i>	Position balanced between digital exclusion and inclusion. On the one hand confrontation with a small number of barriers concentrated around one or two ICT-related issues. On the other hand no problem with the remaining aspects of digital participation.
<i>Wide digital inclusion</i>	Broad take-up of ICTs. When issues of digital exclusion occur, they are rather easily overcome.
<i>Deep digital inclusion</i>	Overall and fully autonomous use of ICTs. No prominent mechanisms of digital exclusion at play.

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The model consists of eight profiles of digital inequalities, ranging from deep inclusion to deep exclusion, and is based upon a combination of five key indicators at the social level (income, education, social participation, agency, wellbeing) and eight key indicators at the digital level (access, attitudes, digital skills, soft skills, media richness of the environment, autonomy of use, user practices and social support) (See Mariën and Baelden, 2015). These indicators were identified based upon an extensive literature review focusing on the identification of root causes of digital exclusion (See Mariën et al., 2016).

Table VII: Eight profiles of digital inequalities (Mariën and Baelden, 2015)

	The Digital Outcasts	The Hopelessly Undigital	The Digital Fighters	The Smoothly Digital	The Digital All-Stars	The Unexpected Digital Masters	The Unexpected Digital Drop-outs	The Digitally Self-Excluded	
	Continuum of social inequalities					Beyond social exclusion			
At-risk indicators	Deep social exclusion	Wide social exclusion	Concentrated social exclusion/inclusion	Wide social inclusion	Deep social inclusion	All three profiles are present amongst all SES-defined population groups			
Income	Low	Low → Average	Small number of specific barriers, no problems with remaining aspects, societal participation is present	Average → High	High	Low → High		High	
Education	Low	Low → Average		Average → High	High	Low → High		Low	
Participation in life domains	Low	Limited		Average → High	High	Low → High		High	
Agency	Low	Low		Average	High	Low → High		High	
Well-being	Low	Low	Continuum of digital inequalities			Concentrated digital exclusion	Wide to deep digital exclusion	Digital exclusion by choice	
	Deep digital exclusion		Wide digital exclusion	Concentrated digital exclusion / inclusion	Wide digital inclusion	Deep digital inclusion	Small number of specific barriers, no problems with remaining aspects, use patterns are present, support networks are in some cases lacking	Average → High	Average → High
Access	Low	Average	Average	Small number of specific barriers, no problems with remaining aspects, use patterns are present, support networks are in some cases lacking	High	High			
Attitude	Low → High	Average → High	High		Low → Average	High			
Digital skills	Low	Average	Low → Average		Average → High	High			
Social and soft skills	Low	Low	Low		Average → High	High			
Autonomy	Low	Low	Low		Average → High	High			
Use patterns	Limited	Limited	Limited		Functional	Diversified, creative & strategic			
Media Richness of surroundings	Low	Low	Low		Average → High	High	Average → High	Average → High	
Social Support networks	Not present, highly needed	Not present, highly needed	Present, but limited and needed	Present and needed, know where and how to get support, provide support themselves Reinforce resource effect			Present and needed, but not used	Present and needed, know where and how to get support	

Sources: Mariën et al., 2010; Mariën and Van Audenhove, 2010; Mariën and Van Audenhove, 2011; Mariën, 2012; Mariën and Van Audenhove, 2012a, 2012b, 2012c; Mariën et al., 2013; Mariën and Prodnik, 2014; Schurmans and Mariën, 2013.

This conceptual model, by going further than a sole focus on economic or demographic factors, allows the formulation of an alternative lens through which to look at mechanisms of inclusion and exclusion. Moreover, these eight profiles bring a significant contribution to existing research by highlighting the co-action of social and digital indicators in mechanisms of inclusion and exclusion (see Mariën and Baelden, 2015; Asmar, Mariën and Van Audenhove, 2020). Furthermore, they have shown to be a highly suitable tool for local authorities and policy makers to innovate and customize their digital inclusion policies. In collaboration with Mediawijs, the Flemish Knowledge Center for Media Literacy, and the host of www.einclusie.be, the 8 profiles were transformed into a physical card set and a series of methods and goals for which the cards could be used, such as: defining the digital vulnerability of a specific target audience, defining which of the 8 profiles existing digital initiatives are reaching or not, or inciting self-reflection amongst public servants and policy makers about digital inequalities.



To conclude, this study has shown that regardless of the life-stage group or life trajectories, at-risk situations occur due to the increasing digitization of society. Therefore, we argue that deconstructing the linear relation between socio-economic profile and the (non-)usage of digital technologies is mandatory. Instead, we should acknowledge at-risk moments of digital exclusion. Put differently, this analysis highlights that the whole of the respondents, including those with privileged life-course trajectories and digitally competent profiles, can find themselves in situations in which digitalization leads to concrete challenges to participate in the entire process related to the educational, professional and private-life domain, as well as at specific moments in time.

Moments at risk instead of profiles at risk

This study has shown that the increasing digitalization of society has impacted respondents throughout their life course. In this study that aimed to elucidate the contextual dimensions of the use of digital technologies and the at-risk situations in the process of digital autonomization, we have gained insights into the life-course trajectories of respondents and have given particular attention to life-stage group-related differences and similarities. Fieldwork indicated that life-course trajectories need to be understood in the respondents' broader life-course narratives. Indeed, the accounts showed that elders have a predominantly event-oriented life-course trajectory narrative. Adults describe a relational life-trajectory narrative. And, young adults have a rather self-centered life-course trajectory narrative. These life-course narratives not only put in perspective individual life-course trajectories but have also enabled us to assess the logic of life choices. Seniors, adults and young adults negotiate their life choices differently. In short, seniors made life choices according to events. Adults, for their part, considered the relation to others when making a life choice. Finally, young adults exhibit a rather self-centered life choice. Understanding this differentiation in life choices according to life-course group is crucial since we argue that it will impact tendencies in the life course, which in turn will impact the usage or non-usage of digital technologies.

When we analyzed the life courses of respondents in more detail, we saw that respondents move through different life domains which are composed of a set of alternative life-course trajectories. In a nutshell, fieldwork allowed us to identify three main life domains:

- The education life domain: In this life domain the ability or inability to pursue and achieve educational goals appeared central when narrating educational life-course trajectories. In this context three life trajectories can be distinguished: the finished academic life course, the fragmented academic life course and the failed academic life course.
- The professional life domain: The degree of professional stability along the professional careers characterizes this domain. The identified life courses are: the stable professional life course, the flexible professional life course, the additional professional life course, and the long-term unemployment professional life course.
- The private life domain: The number and the rapidity of successive moments of engagement and disengagement, or settlement and resettlement are at the heart of the private life domain. Three alternative life-course trajectories are put forth: the linear private life course, the flexible private life course and the ruptured private life course.

By defining a set of life-course trajectories for each life domain, this research highlights the importance of looking into the internal dynamics from a life-stage perspective and a life-course perspective. It has shown the multiplicity of life courses and has made us aware of

the cumulative risk of social exclusion within and across the educational, professional and private life domains.

Finally, this research has confirmed that digital technologies are integrated in all life domains and at every stage. For each life domain, specific moments were identified in relation to the use of digital technologies. In doing so, we not only highlighted the contextual dimension of digital use, but we also obtained a detailed overview of each life domain, including the potential risk situations of digital exclusion. By combining the level of coping strategy and the level of convergence of digital competences, we estimated the level of risk of digital exclusion for each situation. The scheme below briefly lays out the risk moments of digital exclusion and the level of risk for digital exclusion according to life domain:

Table VIII: Digital at-risk moments according to life domains

	DIGITAL AT-RISK MOMENTS	DIGITAL AT-RISK LEVEL
EDUCATIONAL LIFE DOMAIN	Selecting an educational institution or program	Low
	Enrolling at the school or in particular courses	Medium
	Involvement in the class interactions	High
	Accomplishing homework and tasks	High
PROFESSIONAL LIFE DOMAIN	Exploring the job market	Medium
	Responding to a job offer	High
	Integrating digital technology at the workplace	High
	Claiming unemployment benefits and services	Medium
PRIVATE LIFE DOMAIN	Meeting and dating	Low
	Renting or buying a house	Medium
	Engaging and disengaging	Medium

Social support for digital inclusion: A typology of social support patterns

Looking specifically at digital inequalities, recent research shows that social support has an important effect on mechanisms of digital in/exclusion (Mariën and Baelden, 2015; Mariën and Prodnik, 2014). Indeed, given that not everyone has access to the same level of support, social support is another level at which digital inequalities manifest themselves. However, despite extensive research on digital inequalities and their consequences on mechanisms of in/exclusion (Helsper, 2008; van Deursen and van Dijk, 2019), digital inequalities studies present two main shortcomings when discussing social support. On the

one hand, current research has not yet provided a concise definition of the concept of social support, and without a clear definition, the concept of social support is subject to several interpretations preventing the elaboration of a clear line of research; on the other hand, very little is known about the role of social support in mitigating or intensifying inequalities. In fact, the rare studies conducted on social support focus heavily on quantitative analyses regarding the quality and/or quantity of support (Courtois and Verdegem, 2016; Helsper and van Deursen, 2017; van Deursen, Courtois, and van Dijk, 2014).

Our study contributes to a better understanding of digital inequalities in two ways: It questions existing classifications by introducing a more complex typology of social support in relation to digital inclusion, and it nuances the causality between socio-economic factors and support. It focuses on: (1) what are the different patterns of social support in relation to digital technologies, and (2) what influence do such patterns have on digital inequalities?

To show the specificity of social support within digital inequalities research, and to demarcate the concept from definitions of other academic disciplines, we introduce the concept of social support for digital inclusion. We define it as the aid — emotional, instrumental, and informational — that an individual receives from his/her network in his/her use of digital technologies:

- Emotional aid as the support given through appraisal or social companionship during a time of heightened distress caused, for instance, by an individual's fear of technology.
- Instrumental aid is a task-oriented form of support (e.g., teaching an individual to use a computer).
- Informational aid refers to the guidance, advice or feedback an individual receives during the learning process.

Social support for digital inclusion points thus to the diverse nature of support networks and highlights the variety of support seeking patterns people use and/or combine, from individuals without access to support networks, to individuals who gain support by emulating others. Henceforth, our definition of digital social support, while built on existing conceptualizations of social support (Cobb, 1976; Islam et al., 2018), asserts the specificity of such a concept for digital inequalities studies by being grounded in the findings of this research.

Table IX: Patterns of social support (Asmar et al., 2020, under review)

Type of support	Characteristics	Type of support	Characteristics
Support-Deprived	<ul style="list-style-type: none"> • Low level of digital skills and of often in situations of social precarity and/ or social exclusion. • Acknowledge that they need help with digital technologies but in the incapacity to find someone to help because of their situation of exclusion. • Found within all three life categories (18-years old; 31–50 years old; 51–70 years old) 	Network-Supported	<ul style="list-style-type: none"> • Draw support mainly from close social circle (family/children/spouses/close friends and/or coworkers). • Show the importance of social embedding: to be able to draw support, there is a need to be integrated in a social network. • Mostly, 2nd life category (31–50 years old) and 3rd life category (51–70 years old).
Community-Supported	<ul style="list-style-type: none"> • Almost all sources of support come from computer room and/or computer classes. • Computer room/classes seen as: <ul style="list-style-type: none"> — a way out of potential exclusion, both at the social and digital level — a way to become more independent (no longer depends on children for support) • Mostly respondents from 3rd life category (51–70 years old) 	Vicarious Learners	<ul style="list-style-type: none"> • Do not explicitly ask for support but learn by emulating others. • Rely on watching friends' and family's use of digital media and from then onwards start learning by doing. • Mostly respondents from the 1st life category (18–30 years old).
Supported Through Substitution	<ul style="list-style-type: none"> • Do not directly engage with digital media but ask someone in their close social circle (generally family members) to accomplish a specific task for them (e.g. send an email) • Spotted with older couples where one spouse either has more skills than the other or when one spouse does not want to use digital media. • To be distinguished between a) supported with low digital skills, and b) supported with low motivation. • Mostly respondents from late 2nd life category (41–50 years old) and 3rd life category (51–70 years old) 	Self Supported	<ul style="list-style-type: none"> • Do not seek support from the domestic sphere but are a great source of support for others (mostly domestic circle). • Reveal high levels of digital skills and digital fluidity. Are more likely to stretch out of their comfort zone to learn new things. When help is needed, they look for solutions online and learn by doing. • Mostly respondents from the late 1st life category and early 2nd life category (between, 25 and 45 years old). Mostly male and highly educated.

Based on insights from our research, we developed a typology of six patterns of help-seeking and the characteristics associated with them (see Figure 1). The aim of this typology is twofold: (1) to further the debate on social support within digital inequalities studies; and (2) to critically engage with the often unnuanced academic literature on social support. It must be noted that these patterns of support are not mutually exclusive: People combine varied forms of support to meet their needs. However, while support-seeking patterns are not exclusive, the way people switch between patterns of help or the way these patterns change over time become only visible in the long run and would necessitate observing people over the years — a task for further research.

Internet is everywhere

When you're out, you're entirely out

Regardless of the policy level and/ or the policy domain, the IDEALiC research has showed that Internet — and to a large extent digitalization — is present in every area of life. In other words, they are no longer any life domains where people do not refer to the benefits and/or disadvantages of digitalization. Social contact, work, health, mobility, education, housing...

digital platforms and applications are embedded in each of these life domains. A crucial implication of this 'omnipresence' of digitalization is that people who are unable or unwilling to take part into the digital society due to lack of access or motivation, low digital skills or no social support, are not just excluded from one specific life domain, (i.e. education), but from society altogether. Put differently, this risk of exclusion is not merely limited to the specific benefits provided by digitalization, such as access to e-government or e-commerce, but it ultimately means being left out from societal systems that are increasingly reliant on technologies.

Certainly, new digitized information is accessible to all on equal basis (e.g. tax forms online, city hall documents...) but the ability to translate that access into beneficial and effective use is not spread evenly. In the absence of efforts to equalize the playing field with respect to enabling opportunities for the use these services, the end result may be increased social divides rather than reduced ones particularly, with respect to the already poor and marginalized.

Indeed, the extensive digitalization increases the so-called Matthew-effect. The rich – the strongly connected, highly digitally skilled, well networked and supported – are getting richer and are reaping more and more benefits from their use of digital tools. Whereas the poor – the disconnected, non and low skilled, isolated and non-supported – are becoming poorer as they do not succeed in using digital tools to their benefit.

Hence, this implies two crucial questions:

- (1) Do people still have the choice to opt out of the digital? How can we ensure an autonomous use of digital media if alternative choices are not offered? The capacity to choose is what makes us autonomous beings. Yet it is not the sole responsibility of the individual; rather, such room for choice must be accommodated by society. Digital autonomy cannot be expected from individuals if they have not been given alternatives suited to their personal digital standards or norms. On the contrary, by 'forcing' people toward more digital or rather by giving always less alternatives to the digital, the risk of actually pushing individuals toward self-exclusion is real. As a consequence of feeling coerced, individuals might increasingly opt for complete disengagement from the digital.
- (2) Are the human rights of all citizens guaranteed in a digital-by-default society? Should access to digital tools and the internet not be recognized as a fundamental right? The more public and private services restrict their accessibility to the digital, the greater the risks that the fundamental rights of low skilled individuals are no longer guaranteed. This crucial question will have to be mapped out in future research and translated into concrete policies to ensure the fundamental rights of every citizens are met, even more so in a digital-by default society: What are the legal and financial implications of the recognition of access to internet as a human right? What additional solutions need to be implemented in order to ensure internet access and capital enhancing use for all citizens?

From access to equipment to access to services: a polymedia perspective

The concept of access has traditionally been defined as a binary distinction between those who have access to the internet and those who do not. However, this oversimplifying definition does not accurately describe the present technological and social changes. Hence, distancing from this dichotomy, we move from a focus on technology affordances to the concept of polymedia to offer an alternative understanding of the concept.

In his influential work *The Deepening Divide*, van Dijk (2005) defines access to the internet as a process of appropriation starting with attitudes towards the internet, advancing to physical and material access, to culminate in proper skills and usage (van Deursen and van Dijk, 2019; 2015; van Dijk, 2012; 2005). At the heart of this model is the resources and appropriation theory (van Dijk 2005) asserting that categorical inequalities, personal – e.g. age – and positional – e.g. level of education, lead to an unequal distribution of resources; this unequal distribution results, as a consequence, in unequal access to the internet (van Deursen and van Dijk, 2019).

While the model of access (van Dijk, 2005) has proven useful for the development of digital inequalities research, van Dijk's theory (2005) presents two main limitations. First, theorizations of digital inequalities have certainly evolved for the better yet, at every stages of these divides, having access to technology is still understood as access to material (physical) equipment, what van Dijk (2005) calls material access. As such, it is implicitly assumed that having access is defined either by the ownership of a specific device, or that having access consists primarily in the acquisition of the relevant competencies for the use of particular devices. However, this view is problematic because it adopts an 'equipment-centric approach' viewing access not as a single decision to purchase a particular technology but a continuing process of getting access to new versions of hardware and software, peripheral equipment and subscriptions (van Dijk, 2017). By presenting access solely as the provision of physical artefacts, we argue that the equipment-centric approach of the traditional model of van Dijk (2005) misses the 'mundanity' of technology. Indeed, given how technological advances are transforming individuals' daily lives (Helsper and Eynon, 2013), the traditional model of access does not sufficiently recognize how the use and adoption of technology go beyond mere hardware and software, but is highly influenced by everyday social arrangements. In that sense, the mundanity of technology refers to how technologies quietly seep into the flow of everyday life and are incorporated into the routines of individuals. Hence, looking at the present media-richness of the Western context, we argue that access to technology is not always progressive endeavor; rather, access in the present media ecosystem has become a fluid interplay between different media. Understanding these fluid interplays is, we contend, key to grasping how and why people access technology.

Second, at the core of van Dijk's access model (2005) is the resources and appropriation theory placing emphasis on the categorical differences between individuals. While positional and personal categorical inequalities still play a role, we argue that the sole focus on the

relationships between individuals obscures the relationships said individuals forge with their devices. Indeed, as technology becomes mundane, so do people create complex entanglements with the digital, thus shaping a) how and why they access and use technology; b) how they think about their devices, the meanings they attribute to their media (Gershon, 2010). These entanglements in turn inform what people do with their devices. As such, it is our belief that understanding inequalities cannot be divorced from understanding the practices and entanglements wrought with technology. Yet, for such understanding to be possible, there is a need to shift the focus towards a ‘non-equipment centric approach’. By understanding media and technology as part of the everyday life, a ‘non-equipment centric perspective’ allows to grasp the varieties of practices and meanings people attribute to technology.

We thus argue that the theory of polymedia can, on the one hand serve to broaden the theoretical framework of digital inequalities research, and, on the other hand, alleviate the insufficiencies outlined above.

First, the concept of polymedia understands digital media as an integrated structure in which each medium is defined in relation to all other media: a computer is not just a computer, it is its difference from a smartphone that makes it what it is. From an epistemological perspective, polymedia draws on the anthropological structuralism of Levi Strauss (1963) and brings forth a theory of uses of, and access to technology less focused on individual channels of communication and more observant of media as symbolic environment. Polymedia as a theorization of the present media ecosystem perceives digital technologies less from the viewpoint of their singular properties or affordances, and more in relation to the other technologies that could have been equally employed to convey a particular message but have not been chosen by the user. We argue that the concept of polymedia provides digital inequalities research with the space to go beyond an equipment-centric perspective in order to understand how and why individuals create fluid and mobile media practices in their daily lives.

Second, in a ‘media-abundant’ environment, individuals’ choose which medium is best suited to convey a specific emotion or achieve a particular communicative goal from a catalogue of ever proliferating technologies. The choice of the medium is itself a communicative act. This moral aspect of polymedia is explicit in Gershon’s study (2010) with what she terms ‘media ideologies’: people’s beliefs about media and the ways they ought to be used in specific context. These ideologies are not just based on the technical characteristics of a technology, but they revolve around individuals’ ideas about how a technology (i.e. a text message instead of an e-mail) structures communication. For digital inequalities research the re-socialization of media would lead to grasp how people’s media ideologies affect and shape the way they engage with digital media. Categorical differences (van Dijk, 2005) certainly matter, but do not tell the whole story: rethinking access to technology implies understanding the social and cultural contexts within which this technology is being accessed and used.

Rather than focusing on singular technologies, the concept of polymedia shifts the discussion towards acknowledging the digital as an integrated ecology: what matters is not so much which technology is being accessed and/or used, but how users exploits the affordances of the different technologies at their disposal to achieve a specific need. In other words, access to technology is not solely a matter of (hard)software; access to technology is also highly influenced by the particular needs individuals' wish to fulfil. Digital tools allow individuals to maintain significant involvement in different life domains, from social networks to education. Through the research, the study has shown how people combine and express themselves through a varied range of media. Depending on their needs, individuals will use and combine a variety of platforms and/or services to achieve specific purposes. This reveals that they are less and less tied to specific infrastructures — i.e. laptop, smartphones, etc. — but integrate multiple media tools to achieve a specific outcome. Hence, having access is no longer limited to being connected to tools and infrastructure. Rather, it implies the ability for each individual to achieve their personal and specific purposes through the use of those tools and infrastructure (see Asmar, Mariën and Van Audenhove, D.2.2, 2019).

Access ceases to be solely about the platform (i.e. computer, tablet, etc.), but shifts towards accessing the services needed to fulfil specific aims. Whether access is obtained via a fixed home computer, a laptop or a smartphone is of lesser importance; access to services is primordial, whereas access to equipment has become secondary.

This finding brings about a determining question at policy level: with this shift in access, from equipment to services, there is a necessity to put the needs of citizens at the forefront of the digital agenda. Disengagement, or the fact of not using technology is not always due to economic factors. It also results from the inability of users to see or find answers to their needs. Henceforth, there should be a move towards understanding what drives individuals, what they need — to communicate, to find a job, etc. — and incorporate these realities in overall policies.

Digital inclusion policies should thus pay a renewed attention to the social environment of users as having a tremendous impact on the development of digital autonomy and empowerment. Additional research is needed to get an overview of what the primary digital services are that people need to fully participate in society? How accessible and user friendly are these services on different platforms and digital tools? To what extent are people equipped to use these services on these various platforms and tools and are they able to gain a substantial benefit? To what extent are these addressed in existing digital inclusion initiatives and the curricula at educational level? For which digital services are additional training materials needed, and so forth?

Digital fluidity is key

The overall digitalization of society and the shift from access to platforms and tools to services, also requires users to become fluid in their usage of technology. The qualitative part of the study shows that digital fluidity, or the ability to move easily between the various

platforms on which services are made available, is a crucial skill for autonomous use, certainly given the increasing digitalization of society. Digital fluidity refers to the repertoires of skills and the rapidity of execution of tasks online. It goes beyond the mere ability to express oneself in an online environment and includes the capacity to apply learned skills over a multiplicity of platforms and services.

To give an example, it implies that people need to be sufficiently skilled to use email or whatever other services on a smartphone, on a tablet, via various online browsers, via a desktop application, on a customized info point at their local municipality and so forth. They need to be able to switch fluently between these devices and platforms.

Given that access to a specific equipment (i.e. computer) is no longer primordial, but that access to a specific service regardless of the equipment used is crucial for users, digital fluidity implies that there is a necessity to develop digital skills trainings that go beyond the mere use of tools or equipment. Put differently, it is becoming essential to train individuals to use different services (i.e. WhatsApp, Skype, Teams, etc.) across a wide array of equipment (i.e. smartphone, tablet, laptop, etc.) instead of privileging an equipment-oriented training, that is to say learning to use one service on one type of equipment. Therefore, future training initiatives in formal and nonformal education must put an emphasis on the development of digital fluidity, that is to say teaching how to work fluidly with different services on different types of devices and platforms. This also implies developing and strengthening problem-solving skills and self-efficacy or self-confidence as underlying competences needed to enhance the digital fluidity levels of people.

Data literacy is the new gold

Everyday objects – from smartphones to home appliances – become increasingly equipped with sensing, sensoring or sorting technologies that allow these objects not only to understand their environment but endow them with the capacity to identify and precisely recognize the individuals that make use of them (van Deursen and Mossberger, 2018). This implies that as individuals incorporate these objects in their daily routines, more and more data about them is being collected, stored, used and sold to third parties, possibly without their accord. Moreover, when permission is asked for the collection of data, it is often done in such an impenetrable language that users, most of the time, neither read nor understand what they are expected to agree upon. One of the most cited concerns in the IDEALiC study, especially with the highly educated participants, refers to issues related to privacy, data collection, data gathering. As personal data are aggregated from various technologies and equipment, people no longer feel that they are in control of their information, or that they have the possibility to determine what can be known and revealed about their personal lives. As data starts to mediate the everyday life, it is clear that data literacy is of fundamental importance for processes of empowerment, digital autonomy and participation in a democratic society.

The concept of literacy and the skills associated to it are not static by nature but produced and defined by the social practices and technological changes occurring at a certain period of time. As new technologies appear, new literacies and skills are needed to take advantage of the rapid technological changes. For instance, we observed throughout the 85 interviews that many graduates between 30 and 40 years old finished their studies having encountered the literacies elicited by a wide array of new technologies: web editors, presentation software, instant messaging, virtual worlds, social media, etcetera. As students, they experienced new literacies at the end of their schooling that were completely unimaginable at the beginning. Given the increasing pace of technologies, it is likely that students who will engage in higher studies in the coming years will experience even more changes during their own literacy journeys.

Looking specifically at the digitalization of public and private services, our research shows that one of the main concern of respondents when it comes to data refers to privacy, and more broadly the uses of their data by third parties. Our findings show that, across all ages and socio-demographics categories, one of the attitudes that came the most to the fore during the in-depth interviews was that of mistrust regarding (1) what and how data are collected and (2) who collects the data. However, our findings also show that, while our respondents were equal in the face of fear, strong inequalities were noticeable in the ways in which individuals were coping with these fears. Second, the findings show how, out of these intersecting concerns, growing inequalities in the ways that individuals manage their exposures in the data society are on the verge of complexifying the picture.

The strength of the concept of data literacy is that it resolutely goes beyond the mere acquisition of skills, to move towards giving citizens the tools to understand, shape and explore data infrastructures: *While many previous conceptions of data literacy focus on the effective utilization of the by-products of these infrastructures as resources for knowing and representing the world, we propose that literacy initiatives should place greater emphasis on developing critical scrutiny, reflexivity, inventiveness and infrastructural imagination with respect to the socio-technical arrangements involved in the making of data* (Gray et al., 2018, p.9). Data literacy infrastructures is ultimately a re-invention process: it speaks of re-imagining data worlds by allowing the publics to play a role in the assemblage and the configuration of these data infrastructures. In addition, making data infrastructures visible is, we contend, the first – and very important step – toward answering the feelings of mistrust expressed by our respondents. As aforementioned, many of our participants have: a) little knowledge of what is being with their data, and b) little understanding of datafication mechanisms. It results from that a perception of the datafied society as obscure and lacking transparency.

Digital services: challenges and opportunities

The benefits of digitizing general interest services to overcome digital exclusion

As digital technologies become increasingly present in all areas of daily life, the digitization of private and general interest services is presented as an inevitable evolution that will bring about progress. The discourses that promote digital transition emphasize the emancipatory potential of digital uses. In particular, digitization is supposed to empower users and citizens in their interactions with public services.

At the heart of the policy of modernizing public services, digitization is generally considered an opportunity to improve the efficiency and the quality of services provided to users through a personalized and co-constructed offer. However, recent social science research has questioned these arguments which favor digitization. In particular, such research raises the phenomena of social exclusion and non-use of rights generated by this digital transition. In light of this, the present research questions how public organizations test the digitization of their services against the principles of collective interest specific to their mission. The following sections present the main results of the analysis (see Bonnetier and Brotcorne, D.3.3, 2019).

The progression of digitization through multiple compromises

The results revealed the emergence of compromises between the various logics – commercial, industrial and civic –, which were carried out by the stakeholders to overcome these tensions. These compromises materialized in a plurality of composite digital devices: voice call rather than video call, chat rather than chatbot, less aesthetic but more user-friendly design, etc. In the three studied organizations, digitization is progressing through multiple trade-offs between different logics whose challenge is convergence. Digitized services must be accessible, efficient, streamlined and cost-efficient. The difficulty lies in ensuring balance between these different rationalities. At risk is the erosion of the civic principles upon which the general interest is founded to the benefit of industrial and commercial principles, which are expanding within the organisms considered in this research.

The progression of digitization against a background of digital thoughtlessness

Beyond the discrepancies in the aims of digital inclusion, the actors agreed on a common framework for thinking (or not) about the digitization of services and its inclusive dimension: they had few questions about the relevance of the digital transition in light of the values traditionally promoted by the civic world. The digitization of services is considered inevitable and desirable: it offers greater personalization of services, and it allows the user to be 'automatically included' insofar that the appropriate content automatically reaches the user. This movement is beneficial to everyone, including the non-users of digital services, who benefit from the decongestion of physical counters.

This reliance on digital technologies is a result of thoughtlessness. This discourse allows digital technologies to be exempted from any justification requirement. It leads to the idea that digitization is an essential step for any organization, including those of general interest.

As a result, the legitimacy of this digital transformation was rarely questioned by the actors interviewed. The rationalities underlying the digital transition are not subject to justification.

However, a macro-social approach reveals that programs for digitizing services of general interest are not neutral. The strategic guidelines of these programs are part of a specific model of society – the connexionist world – and carry a new spirit of capitalism (Boltanski and Chiapello, 1999) that is characterized by the value of connected individualism (Flichy, 2004), flexible organizations, networking and more. These values correspond to the innovations imported by the big digital platforms Google, Apple, Facebook, Amazon and Microsoft (GAFAM). Such developments go hand in hand with growing criticism of public service missions, their operating methods and their financing methods. The digitization of services within bodies of general interest is gradually aligning with the industrial and commercial principles without raising major criticisms.

Digital thoughtlessness had two implications for the digitization of services in the organizations studied. On the one hand, it led to a desire to align the online services with the models of big digital platform technologies – specifically, Facebook and Google. The result was a certain homogenization of the technological ‘solutions’ provided to address diverse and singular needs. On the other hand, this thoughtlessness accelerated the process of hybridization between the private and public sectors. This trend is reflected in the increased use of private providers in the digitization of services. It is also reflected in concerns about the influence of GAFAM in the sectors of activity studied (i.e. health, transport and administration). These concerns are related to the implications of this penetration of the private sector within the commoditization of public services. This trend raises questions about maintaining public services that are accessible to all in an equitable way.

Organizations of general interest should further develop their governance of the digitization of their services which are aimed at the collective interest. Digitizing public services according to the models of big digital platforms without questioning their suitability for the principles of general interest creates a risk of importing the commercial logic of these digital platforms into public services. The idea here is not to oppose the digitization of public services, but to debate it and to question its aims openly and collectively.

It implies that public bodies should develop an ambitious, transversal and coordinated strategy, in accordance with the principles of equity and inclusion that underpin the legitimacy of their existence.

Biases in user involvement during the design process

The results reveal that the modalities of user involvement in the design work guide the configuration of digital services. Despite the rhetoric about the need to involve users in designing digital devices that are accessible to all, biases appear in the representation and involvement of target groups. Whether the methods are based on the mobilization of spokespersons or on the direct involvement of users, they tend to underestimate the heterogeneity of usage situations, particularly the most problematic situations in relation to

online services. These methods also tend to make some users invisible, especially those who use little or no Internet.

These biases are also the result of the aforementioned digital thoughtlessness. Their existence guides the choices of design actors regarding the modalities of user involvement. Their importance within the organizations studied favors the development of interfaces adapted above all to the needs of a standard 'mobile and connected' user. This occults the plurality of the users' social contexts. This thoughtlessness is particularly visible during the development of methods based on capturing users' digital footprints.

Big data and algorithms are considered to have unprecedented potential for professionals whose work lies in capturing the behavior of their target groups. Developing online services based on these automated tracking techniques tends to make invisible the practices of those with little or no Internet connection. However, this bias of representativeness seemed to raise few questions from the stakeholders interviewed. This dynamic thus reveals the existence of an unintentional form of denial of recognition of silent online users. This phenomenon contributes to their symbolic exclusion from general interest services that are being digitized.

To understand the diversity of digital users' profiles, public interest organizations must place the understanding of these social worlds at the center of the design process. However, it is not enough to state that the user is at the center of the design loop for this intention to be implemented in practice. It is necessary to organize their involvement based on user-centered design methods. The aim is not to give a detailed account of them here. However, it is important to remember that there is no ready-made methodology: every legitimate methodology must consider the characteristics of users, the contexts of use and the technical characteristics of the services that are to be developed.

This statement implies a collaborative approach between stakeholders from different socio-professional backgrounds, including not only users, their representatives, designers and marketers, but also human and social sciences researchers. The role of the latter is to support the thoughts of design actors on user practices so that they understand the social context of uses. This approach limits the risk of failure insofar as it allows for the development of digital interfaces adapted to the situations of use of the various target groups concerned.

Stakeholders unequally involved in the digitization of services

The results underline the research conducted by the Centre for the Sociology of Innovation (Akrich, Callon and Latour, 2006): innovation is not only a technical dimension, but also – and above all – a social one. Therefore, the success of inclusive digitization depends largely on the mobilization of a wide network of actors – including IT and marketing professionals, front-line agents and user representative associations – from the beginning of the process and on the achievement of balanced compromises between these parties.

Overall, the results reveal the dominant position of marketing and IT professionals within the network of actors involved in the digitization process. Conversely, front-line agents have little involvement. However, the digitization of services concerns these front-line agents first in the sense that it influences their working conditions and the nature of their relationship with users. The survey uncovered initiatives that mobilized these actors. However, these initiatives were often disparate; they did not fit into a global and coordinated strategy, which limited their scope and impact.

The arrangements for mobilizing the various stakeholders identified during the field survey are therefore best practices that should be disseminated. To ensure the deployment of a truly inclusive digitization of general interest services, the organizations must deploy all the necessary resources to systematize the mobilization practices of the various stakeholders involved in the design process.

The projects that mobilize field actors who are working directly with users must be systematized. Their involvement strengthens their commitment to the digitization project and leads to the regular involvement of front-line agents, their enhanced expertise in the design of online services, the planning of moments dedicated to testing and appropriating new services, and more.

The responsibility of public bodies in the implementation of digital services

In sum, in a context where user training in the use of digital technologies is called upon as a major, if not a unique, lever in the fight against digital exclusion, the results point to the importance of the collective responsibility of public services providers to design digital services in a way that supports the general interest.

This implies placing development and design choices at the center of the public debate on digital inclusion. It is necessary to focus on their performative nature, or in other words, on the effects of these choices regarding the development of digital services which are more or less adapted to the diverse audiences which they are intended to address.

To prevent these risks of exclusion through conception and design, it is important to place greater emphasis on the technological dimension of digital mediation, such as compliance with accessibility standards, the quality of ergonomics, the readability of content and the simplicity of language. Digital mediation commonly refers to human support in the appropriation of digital technologies. This is fundamental, but its mere valuation might overlook the importance of the quality of the concrete form of the socio-technical system as an element of this mediation.

The maintenance of human mediation and various modalities of access to public services are crucial aspects in a context where digital tools are gradually becoming the single channel for access to public services.

However, these actions alone will not correct digital inequalities. To succeed, they must be articulated to actions both to raise awareness among design stakeholders and to provide training, encouragement or even requirements to implement digital inclusion practices by design.

Plural aims of digital inclusion rather than a coordinated global strategy

The results indicate that the reason for digitizing services seems to be self-evident. To some extent, digitization has been naturalized: its legitimacy was not questioned by the actors interviewed. However, the results indicate that digitization was not the goal of a coordinated strategy shared by all the professionals of the organizations concerned.

This fragmented vision hindered the implementation of coordinated actions that support inclusive digitization. Beyond a consensus on the need to promote inclusive digital services, there were multiple conceptions of what digital inclusion means. These conceptions were based on three forms of justification from different spheres: the commercial, industrial and civic spheres. The juxtaposition of these different spheres explains the doubt concerning the direction to be taken in digitizing general interest services. The certainty of being faced with an inevitable process leaves room for uncertainty as to the directions to be given in order to reconcile the digitization of services with respect for the collective interest.

Some recommendations in this regard are:

#1 Digital inclusion should not only be concerned with providing solutions for individuals to gain skills. Rather, service providers should take into account the plurality of users, their difficulties and the measurement of negative impact for an individual if he or she does not access a digitized service he or she needs in order to propose appropriate solutions that meet collective needs.

#2 Attention should be paid to the setting of norms for digital uses. Since they are exclusionary for a segment of the population, access, modes of use and autonomous learning should be designed in accordance with local realities, with regard to ages and the key situations that individuals face at these specific ages of life more than thinking about a generic solution to which everyone should adapt.

#3 Improve the perceived utility of ICTs and online services, as well as the transparency regarding the objectives behind digitization, since this lack of knowledge fuels a sense of non-choice and of being pushed to use ICTs by default, even with remaining questions.

#4 Propose alternatives and support for people in difficulty directly when a service is implemented and without any preconceived assumptions about age.

#5 Work on the negative aspects related to ICTs, without leaving them aside on the assumption that the positive aspects will counteract them. ICTs are a combination of positive and negative aspects that coexist, so it is necessary to deal with its negative aspects as they are. Consider solutions oriented towards these negative aspects and not only those that improve the positive aspects to make the negative points less visible.

#6 Deconstruct the linear relationship between vulnerable profiles and digital exclusion: if socially vulnerable people are indeed at risk, so are many others. Fostering a situation-based approach ensures that individuals who also face difficulties despite not being considered as "at-risk profiles" are not left out.

#7 Strengthen cohesion between online service designers and field actors in order to create a local network of digital inclusion that includes stakeholders throughout the process and not just at the end of the chain to deal with people who are experiencing difficulties. More generally, it is a question of institutionalizing the relationship with the actors (field actors and users) and ensuring that the digitalization of a service is designed by integrating them fully: the digitalization of a service or a resource should not leave individuals on the side. Thus, if the digitization of a service leads to a decrease in digital autonomy, the integration of (1) compensatory measures (training, institutionalized support, physical counter, etc.) to avoid exclusion mechanisms, and (2) a policy of transparency in the objectives and stakes of this digitization should be mandatory.

Inclusion-By-Design strategy for accessible online services

Digital inequalities often put focus on the specific situation of individuals and considers to what extent they have the necessary access, motivation, skills and support to engage with digital devices and content. However, a major risk of this approach is that the responsibility is by default directed towards the individual. The case studies have shown that interventions are also needed on the development and deployment side of digital platforms and services.

Regarding the future, there is a need to set a stronger focus on the provision of inclusion-by-design tools and good practices. Below some tools suggested throughout the IDEALiC research:

- Setting up an 'e-inclusion panel' of users that include digitally vulnerable profiles and that can be used to test or shape existing and/ or new digital services.
- Developing and testing tech cards to be used during the design and development phases of new digital services with the aim of making the choices regarding inclusion and exclusion explicit and visible.
- Developing a self-assessment test that allows to determine the digital profile of an individual and that indicates the extent to which there might be a risk of exclusion.
- Setting up co-creation and living lab processes in which existing and new digital technologies are tested in real-life conditions with a diverse audience, including digitally vulnerable profiles.

- Centralize and freely disseminate best practices related to inclusive digitalization processes, following the example of BOSA at the federal, regional and local level. This means launching broad communication campaigns aimed at local authorities and public entities that offer or want to digitalize their services.

Following the various insights from the study, particularly with regard to the need for more digitally inclusive public and private services, UCL, together with the VUB, submitted a valorization project. This valorization project is a direct translation of the findings of the IDEALiC project into practical tools designed to support designers and developers in their daily practices and routines. This project is especially intended to lessen the gap between three worlds, namely (1) welfare actors, (2) designers and developers and (3) civil society actors.

The valorization project addresses the following challenges:

- Socio-economic factors alone cannot explain why individuals are left behind in the digital society;
- Designers and developers of digital services have little to no insights into the underlying obstacles of non-users
- There is a lack of guidelines and hands-on tools that designers and developers can use to develop digitally inclusive services;
- With regard to policy, there is insufficient will to promote digitally inclusive services as standards of reference;
- Digital inclusion actors in all regions (Flanders, Wallonia, Brussels) are still faced with various difficulties preventing them to operate in a sustainable way.

The objectives of this valorization track are thus the following:

- Goal 1: support welfare actors and in particular front-line workers, in easily and quickly detecting digitally vulnerable groups and in easily referring them to local e-inclusion actors
- Goal 2: support designers and developers in the development of digitally inclusive websites, application and services, by providing various inclusion-by-design tools going further than mere web accessibility.
- Goal 3: create awareness among different stakeholders at different levels (federal, local, regional), from policy and public institutions to designers and developers, by organizing participatory events at which the developed inclusion-by-design tools are presented.

Towards Sustainable Digital Inclusion Policies

7 building blocks of a digital inclusion policy

At the start of the IDEALiC project, a conceptual framework for sustainable digital inclusion policies was developed, consisting of 7 building blocks and according recommendations (see Mariën and Van Damme, 2016):

- Building block 1 – A broad vision on e-inclusion: Steer away from the dual reflection behind the digital divide concept; instead approach the underlying mechanisms from a broader perspective that considers access, attitudes, skills and support.
- Building block 2 – A policy based on partnerships: A whole series of actors are already engaged in digital inclusion activities. It is key to partner up with these organizations and strengthen their activities instead of developing new and similar activities.
- Building block 3 – Applying Inclusion by Design principles: There needs to be an automated reflex about mechanisms of inclusion and exclusion when developing and deploying digital services. Structural processes of supporting digitally excluded groups need to be set up alongside the development of new digital services.
- Building block 4 – Build upon research: Additional research at several levels are needed. Amongst others, it is needed to review the groups at-risk that are entitled to receive a reduction for telecom or alternative measures for affordable internet and devices. Also, a yearly report that provides detailed information on the various aspects of digital exclusion (access, skills, support, groups at risk beyond SES...) is needed in order to provide the correct state of the art to policy makers. Other aspects to explore are the legal, societal and financial implications of the recognition of internet access as a human right.
- Building block 5 – Affordable and qualitative access: Investments are needed to provide all Flemish citizens with computer and internet access at home.
- Building block 6 – Basic digital competences for all: The approach developed by civil society actors needs to be upscaled and strengthened. It is clear that a local strategy, with a low threshold for participation, a one-on-one approach in small groups, with the right support and customized learning materials is most successful.
- Building block 7 – Support networks: Awareness about digital inequalities and the underlying mechanisms of exclusion needs to be raised at policy level.

In collaboration with Mediawijs, the Flemish Knowledge Center for Media Literacy, these building blocks were transformed into 7 physical cards, and accompanied by a instructions for civil society and policy makers on how to use the cards to (1) evaluate their current e-inclusion strategies, or (2) set-up new e-inclusion activities.

Table X: Examples of the card set 7 Building Blocks for a sustainable digital inclusion policy

STAP 1

- Stel een (representatieve) groep samen van lokale spelers.
- Selecteer samen de bouwblokken die je wil bespreken.

STAP 2


- Start het debat en geef als groep elke bouwblok een kleur:
 - Rood: we ondernemen nog geen actie rond deze bouwblok.
 - Oranje: we ondernemen beperkte actie rond deze bouwblok.
 - Groen: we ondernemen uitgebreide actie rond deze bouwblok.



STAP 3


- Selecteer de oranje en rode bouwblokken waar je aan wil werken.
- Stel per geselecteerde bouwblok een actieplan op aan de hand van volgende elementen:

• Waarom?	• Hoe?
• Wat?	• Waar?
• Wie?	• Wanneer?

 Meer info: www.e-inclusie.be/bouwblokken-aandeslag

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PARTNERSCHAPPEN

BASISREFLEX

Om te zorgen dat digitale diensten toegankelijk blijven voor alle burgers zijn een aantal basisreflexen cruciaal. Gebruik een 'User Centered Design aanpak'.

TIP Stel volgende vragen

- Wie moet de digitale dienst gebruiken?
Welke digitale profielen hebben ze?
(Zie bouwblok brede visie)
Toets bij een diverse testgroep af hoe ze digitale dienst gebruiken!
- Hoe kunnen moeilijkheden worden opgevangen
 - in het ontwikkelingsproces van de digitale dienst.
 - door partnerschappen en ondersteuningsnetwerken.

 Inspirerende praktijken:
www.e-inclusie.be/basisreflex





ONDERZOEK

The policy analysis realized on the basis of policy documents across various policy domains indicates that still insufficient attention is being paid to digital inclusion. Digitalization and

innovation are at the forefront of the agenda, yet without a structural reflection over the impact thereof on vulnerable groups. Given the increasing digitalization of all spheres of life, it is clear that, in the future, efforts must be made to develop a broad transversal digital inclusion policy that will serve as frame of reference for every policy domain. In other words, digital inclusion is not a competence restricted to a specific policy domain; rather, digital inclusion should be approached from an overarching perspective with a joint strategic framework as the basis of each policy domain (see Wauters, Mariën and Van Audenhove, D.4.1, 2019).

The structure of the Belgian policy field is a major hinder for such an overarching digital inclusion policy as responsibilities are dispersed across local, regional and federal policy departments. Coordination and knowledge exchange are key to such an overarching policy. At the same time, it is worth questioning the extent to which internet access is considered a basic right in a society where more and more vital services are becoming digital-by-default. A final interrogation relates to who should instigate the development of an overarching plan and which entities — federal, regional, local — will be accountable for which responsibilities. The motivation and decisiveness of civil society organizations should be taken into account and included in the overarching plan.

A digital inclusion approach beyond the individual's responsibility

The research distances itself from the competence-driven approaches of digital inclusion because they keep individuals in an unfavorable balance of power since they have to adapt to tools and services for which they have few means of action. The empirical data questions several changes in the modes of participation imposed by digital technologies:

- The use of data and algorithms as drivers for the design of new services raises issue about their ownership. They are currently seen as quite external to the individuals while constituting an implicit form of participation by their gathering.
- The design of the applications also influences participation in the sense that an individual will always behave according to what is allowed by the designer. This skews the grid of necessary competences and limits the possibilities for expression by individuals.
- The individualization of uses and services is characterized by the multiplicity of individual equipment and the naturalization of personalized platforms which could overshadow the collective purposes that could be achieved through digital uses.

These elements are translated in the experiences of use for certain respondents, and some insight has been gained into the consequences of such a context, as for example:

- there is a form of misunderstanding about the objective of the digitization of the services;
- there is an inability to take action in the case of technical problems and to avoid penalties;

- platforms induce individuals to conform to norms of behavior, access and uses;
- the learning of the functioning of the platform is left to the responsibility of the individual;
- there is a difference of investment and constrained investment among all the users, especially when they are in asymmetric relationships.

To resume, even individuals with privileged and digitally competent profiles find themselves in situations where imposed digitization can raise concrete problems as well as more global questions about their modes of uses, thereby raising the question of inclusion. The dilemma between the uses prescribed for minimum access to resources and all the disruptions in the current form of digitization is even more acute for the less privileged, who find themselves *de facto* caught up in a system they do not control.

Further, the study shows the important role of intermediaries as open public computer spaces functioning as places of proximity open to their local environment which tackle digital difficulties and the social isolation they generate. Also, the study shows that ways to use digital technologies in groups and/or with collective purposes, by reflecting on the needs and wants of their own communities, proves perennial and positive both for individuals who have difficulties with digital technology and also for the wider community (which could also be the family). Collective purpose and local anchorage go beyond individual benefits for vulnerable persons.

The critical standpoint of the definition of autonomy as a set of competences is that it leaves the responsibility of acquiring competences to the individual who must continuously adapt to the situations and new services (Badouard, 2017), while the structural inequalities that generated this situation are not called into question. Finally, the study shows that the accessibility to resources—digital or not—is still an issue for inclusion and that it tends to become more complex.

- Access continues to prove problematic not only for the financial aspects of acquiring a device, but it also calls into question secure and sustainable access, the access to complete information, the multiplicity of means necessary to access personal information (login, password, card reader, etc.) and limited access to technical support while having no choice to use ICTs.
- The problems with the relation to the written is emphasized by digitization because added to literacy, individuals found themselves more exposed to the scrutiny of others and the negative outcomes that follow.
- The lack of resources and information concerning the management of the digital divide in some public and private services is characterized by an unthinking about the non-connection of certain people, ignorance of their problems or a will to help but with precarious and non-perennial solutions.

Towards one horizontal action plan

The case studies with regard to the inclusion of reflections in inclusion-exclusion in the development of digital services primarily emphasizes the fact that there is ample room for improvement on the supply side. The development of digitally inclusive services is not a generally accepted standard. The entities reflecting on the impact of digitalization are strongly looking for good practices and ways to improve the accessibility and usability of their digital services and products.

The results of the stakeholder mapping confirm the results of the 2009 survey conducted in Flanders. There is in Flanders, Brussels and Wallonia a large and strong network of civil society organizations committed to providing access, support or offering (in) formal training programs. This is notably the case a variety organizations with diverse background, from the Centra for Algemene Welzijn (CAW), to the Centra voor Basiseducatie (CBE), Centra voor Volwassenenonderwijs (CVO), Vormingplus, Associations fighting against poverty, community centers, public computers rooms or the *Espaces Publiques Numeriques* (EPN), socio-cultural associations such as MAks vzw., Molengeek, Link in de Kabel, Interface 3, and many others. These actors have greatly differentiated their offers based on the needs of their target audience. A major boost was given by the funding of the Digital Belgium Skills Fund (DBSF), which, since 2017, has allocated more than 5 million annually to support digital inclusion initiatives and sustain their operations. Despite the continuing presence and actions of these initiatives, they remain invisible at the policy level. (see Wauters, Mariën and Van Audenhove, D.4.2, 2020)

The policy analysis realized on the basis of policy documents across various policy domains indicates that still insufficient attention is being paid to digital inclusion. Digitalization and innovation are at the forefront of the agenda, yet without a structural reflection over the impact thereof on vulnerable groups. Given the increasing digitalization of all spheres of life, it is clear that, in the future, efforts must be made to a broad transversal digital inclusion policy that will serve as frame of reference for every policy domain. In other words, digital inclusion is not a competence restricted to a specific policy domain; rather, digital inclusion should be approached from an overarching perspective with a joint strategic framework as the basis of each policy domain. At the same time, it is worth questioning the extent to which internet access is considered a basic right in a society where more and more vital services are becoming digital-by-default. A final interrogation relates to who should instigate the development the development of an overarching plan and which entities — federal, regional, local — will be accountable for which responsibilities. The motivation and decisiveness of civil society organizations should be taken into account and included in the overarching plan.

5. DISSEMINATION AND VALORISATION

Additional research tracks

During the IDEALiC project, both teams invested in additional research tracks to strengthen the overall impact of the project and enable a two-way knowledge exchange between the different projects.

- 2016 – Gender & ICT, research for the Ministry of Development Cooperation, Digital Agenda, Telecom and Postal Services, in collaboration with The Institute for the Equality of Women and Men, commissioned to VUB.
- 2017 – Strategisch Basis Onderzoek INDEED – e-Inclusion for people with disabilities (not granted).
- 2017 – The digital divide in Brussels, assigned by CIBG, Brussels Capital Region, commissioned to UCL.
- 2017 – Digital Inclusion best practices in EU, in collaboration with EU All Digital (not granted).
- 2018 – Development of a e-inclusive smart city strategy for the Brussels Capital Region, assigned by Innoviris, commissioned to VUB.
- 2018 – Development of an e-inclusion strategy for the ‘Huizen van het Kind’ in the City of Antwerp, commissioned to VUB.
- 2018 – Development of digital inclusion at community level in the City of Antwerp, commissioned to VUB.
- 2018 – Data literacy and digital skills in South Africa, Belspo, commissioned to VUB.
- 2019 – Strategisch Basis Onderzoek Digital Ageing: e-Inclusion strategies for elderly people, commissioned to VUB in collaboration with UGhent.
- 2019 – Support for 10 local authorities in the development of their digital inclusion strategy and activities for Labo Lokaal Diverscity, commissioned to VUB.
- 2019 – Strategisch Basis Onderzoek DIG-IN: Digital reintegration strategies for ex-prisoners (not granted).

Policy-oriented activities: information, scientific support & recommendations

2015	Presentation of the set-up of the IDEALiC project at the cabinet of minister Alexander De Croo (Digital Agenda, Federal Government). Discussion about future venues for collaboration.
	Presentation of the set-up of the IDEALiC project at the cabinet of minister Sven Gatz (Media, Flanders). Discussion about future venues for collaboration and interaction with Mediawijs, the Flemish Knowledge Center for Media Literacy.
	Presentation of the set-up of the IDEALiC project at the working group e-Inclusion for cities & municipalities in collaboration with Vlaamse Vereniging voor Steden en Gemeenten (VVSG) and Mediawijs, the Flemish Knowledge Center for Media Literacy. Discussion about future venues for collaboration and interaction with the cell of experts on e-inclusion, the organization of interactive workshops and co-authored publications. Co-authorship for the publication of a white paper on the future vision of e-inclusion in Flanders: Van Hoecke, L., Demeulenaere, A., Mariën, I., Van Damme, S., Bistmans, A., Gielens, C. (2016) White paper. e-Inclusie in Vlaanderen: een toekomstvisie. Brussel: Vlaams Kenniscentrum Mediawijsheid.

	Presentation and brainstorm in collaboration with Agentschap Informatie Vlaanderen (AIV) to support the 'Begeleid Digitaal' project of the 'Radicaal Digitaal' Program of the Flemish Government. This resulted in the creation of a number of tools (personas, guidelines...) that governmental bodies in Flanders can use to enhance the e-inclusive nature of their digital services.
	Presentation and brainstorm in collaboration with representatives of the city of Kortrijk and over 40 civil society actors active in the field of e-inclusion. The results of the brainstorm were used to develop a broad e-inclusion policy strategy for Kortrijk, customized to the different needs and wants of various target audiences.
	Participation in a working group 'Genre et TIC', organized by the cabinet of minister Jean-Claude Walcourt of the Walloon Regional government.
	Collaboration with IPTS, one of the 7 Joint Research Centers of the European Commission that consisted of validating the different components and overall set-up of the Digital Competence Framework (DIGCOMP 1.0). This resulted in a report and a refined version of the framework (DIGCOMP 2.0): Mariën, I., & Van Audenhove, L. (2015) Validation work for Digital Competence Framework to 8 proficiency levels of learning outcomes covering 15 competences. Research Report for IPTS, JRC European Commission.
	Collaboration with the City of Ghent to evaluate the upscaling of the pilot project 'Recup PC' that consisted of bringing an ideal digital inclusion mix to families living in poverty (computer, internet access, support and training). This resulted in a research report for the City of Ghent and a revision of the approach: Mariën, I. (2015) Alle Gezinnen Online. Evaluatie van het vervolgtraject van Recup PC: Do's en don'ts bij schaalvergroting. Onderzoeksrapport voor Digipolis Gent.
2016	The book 'Allemaal Digitaal: 7 bouwblokken voor een duurzaam e-inclusiebeleid' was presented during a colloquium in Antwerp with over 120 participants stemming from policy, civil society, public institutions and local authorities. It is a reflection of 14 best practices and contains a whole series of recommendations on how to set-up a sustainable digital inclusion strategy. It was written in collaboration with Sara Van Damme, the program director of Digitaal Talent, the digital inclusion program of the City of Ghent. The launch of the book was realized in collaboration with Mediawijs, VVSG and Politeia and supported by Agentschap Informatie Vlaanderen and Simon Vanderelst, advisor for e-government of the Cabinet of Minister Liesbeth Homans, responsible for digitalization. The book is built around 7 building blocks that are needed to deploy a sustainable digital inclusion policy, accompanied by a set of recommendations for each of the building blocks.
	Finalization of a four-year research project on digital exclusion in the Brussels Capital Region, with a specific emphasis on vulnerable youngsters. The report contains a series of policy recommendations on how to set-up a digital inclusion strategy for the Brussels Capital Region: Schurmans, D., Mariën, I., Laenens, W., & De Coninck, J. (2016) Digitale inclusie voor sociale inclusie. Welzijn en

	welbevinden van kwetsbare jongeren in de digitale stad: implementatie en beleid? Eindrapport Prospective Research for Brussels.
	Publication of a policy brief, mentioning different policy recommendations on what is needed to ensure that all citizens become digitally included: Mariën, I., Baelden, D. (2016) Radicaal Digitaal in Vlaanderen: Naar een e-inclusieve toekomst voor alle burgers. Brussel: SMIT, VUB Policy Brief #3.
	Publication of a policy brief, reflecting on the extent to which citizens are medialiterate about media policy and what is needed in order to strengthen their knowledge: Donders, K., Livémont, E., Vanhaegt, A.-S., Baelden, D., Mariën, I., Raats T., Van Audenhove, L. (2016) Hoe mediawijs is de Vlaming over mediabeleid? Brussel: SMIT VUB Policy Brief #6.
	Organization of a colloquium 'De Brusselse digitale burger' – Colloque 'Le citoyen bruxellois numérique', with over 200 participants in collaboration with EasyBrussels; the cabinet Bianca Debaets, secretary of state for Informatics of Brussels Capital Region; the cabinet Fadila Lanaan, secretary of state for Administrative Simplification of Brussels Capital Region, 30 November 2016, Square Brussels Meeting Center, Brussels. The IDEALiC team was responsible for setting up the content of the plenary section of the colloquium and the themes and methodological approach for the break-out sessions. The plenary part focused on solutions to make smart cities more e-inclusive. For the break-out sessions a participatory approach was used to formulate answers to three major challenges: (1) coordination of knowledge exchange on e-inclusion at regional level, (2) the complexity of online information of public authorities, and (3) acknowledgement of the importance of the user in the development of digital public services. The outcomes were reflected in a report, along with a series of recommendations for CIBG: Mariën, I., Brotcorne, P. Schurmans, D & Van Buggenhout, N. (2016). L'inclusion numérique en région bruxelloise: 12 recommandations pour une politique d'inclusion durable?
	Development and launch of the measurement tool 'Mediaprofiel', based upon the 8 profiles of digital inequalities, in collaboration with the department of Educational Sciences of the Vrije Universiteit Brussel (VUB) and Mediawijs. The tool is available at www.mediaprofiel.be and is being used by mediacoaches, educational institutions, civil society and so forth to define and discuss the media profile of the target audiences they work with. In 2019 over 7.000 responses were recorded.
	Collaboration as jury member for the Digital Belgium Skills Fund, coordinated by the cabinet of minister Alexander De Croo (Digital Agenda), in order to allocate approximately 5.6 million euros to digital inclusion initiatives in Belgium.
	Launch of the website www.einclusie.be by Mediawijs, the Flemish Knowledge Center for Media Literacy. Contribution of the IDEALiC team members as experts for the creation of videos on the concept of digital exclusion, digital inclusion, building blocks for a sustainable digital inclusion policy, and the eight profiles of digital inequalities.

2017	Publication of a policy brief, specifically focusing on the Brussels Capital Region, providing a number of recommendations on how to ensure how young people living in vulnerable situation can be digitally included: Schurmans, D., Laenens, W., Mariën, I. (2016) Waarom de Brusselse overheid moet investeren in digitale inclusie van kwetsbare jongeren. Brussel: SMIT VUB Policy Brief #7.
	Realization of an additional research project on Gender & ICT for the Cabinet of minister De Croo (Digital Agenda) and The Institute for the Equality of Women and Men, that consisted of: <ul style="list-style-type: none"> • State of the art on the Digital Agenda in Belgium with a specific emphasis on gender. • Lessons learned on digital inequalities and women from qualitative studies, with a specific emphasis on women in vulnerable situations and women with a migrant background. • Quick-scan analysis of digital inclusion initiatives and best practices at (inter)national level. • Recommendations for a more distinct integration of the gender dimension in the Digital Agenda. This resulted in a report: Mariën, I., Laenens, W., Vandenplas, R. (2017) Gender & ICT in België: Stand van zaken. Report for the Ministry of Development Cooperation, Digital Agenda, Telecom and Postal Services, commissioned by The Institute for the Equality of Women and Men. Brussel: imec-SMIT Vrije Universiteit Brussel.
	Realization of various presentations and expert interviews commissioned by the CHD section of the Brussels parliament in order to prepare a vision statement on digital inclusion for the elections of 2018.
	Realization of an additional research project commissioned by the Secretary of the State of the Brussels Capital Region, responsible for digital transformation: Bonnetier, C., Brotcorne, P. Schurmans, D. et Vendramin, P. (2017). Analyse de la fracture numérique sur le territoire de la Région de Bruxelles-Capitale.
	Publication of a policy brief on inclusive communication by public authorities in Flanders: Laenens, W., Mariën, I., Van den Broeck, W. (2017) Inclusieve overheidscommunicatie in Vlaanderen: Hoe kunnen overheden dit garanderen? Brussel: SMIT VUB Policy Brief #12.
	Collaboration as jury member (Mariën, I.) for the Royal Foundation King Baudouin for a project call related to projects that counter the negative implications of digitalization for people in poverty.
	Collaboration as jury member (Mariën, I., Brotcorne, P.) for the cabinet of Bianca Debaets for a project call on smart cities and e-inclusion within the Brussels Capital Region.
	Collaboration as jury member (Mariën, I.) for the Digital Belgium Skills Fund, coordinated by the cabinet of minister Alexander De Croo (Digital Agenda), in order to allocate approximately 5.6 million euros to digital inclusion initiatives in Belgium.

2018	Publication on the consequences of digitalization and what is needed to ensure all citizens can participate within a digital society: Mariën, I. (2018) Digitaal is het nieuwe normaal. Samenleving en Politiek, 25: 4 (april), 61- 67.
	Report for the Royal Foundation King Baudouin to support their digital inclusion strategy based upon a document analysis of the various projects from poverty organisations working on digital inclusion: Mariën, I. (2018) Analysenota Nederlandstalige projecten. Projectoproep 'Armoede'.
	Report for the Royal Foundation King Baudouin on the feasibility of a yearly barometer on digital inequalities. This resulted in a report used for internal means within the Royal Foundation King Baudouin.
	Report for the City of Antwerp on the deployment of digital training opportunities in the 'Huizen van het Kind' in Antwerp, accompanied by a series of recommendations for the overall digital inclusion policy of the city of Antwerp. This project resulted in a follow-up project in which the methodological approach was scaled to three cities, namely Ghent, Kortrijk and Antwerp.
	Publication of a series of recommendations on how to deal with the ongoing and intensified digitalization of the Belgian society: Mariën, I. (2018) Inclusief digitaal: het nieuwe normaal. Samenleving en Politiek 'België, land van verborgen kloven', Jaargang 25, April 2018.
	Series of expert interviews and meetings with Kristel Bogaerts and Peter Van Humbeek from the Sociaal Economische Raad Vlaanderen (SERV) on e-inclusion policies and initiatives in Flanders. The input given has been fed into a vision note, a list of actions and recommendations that was subsequently spread amongst the partners of SERV, including several cabinets and administrations of the Flemish government. The SERV documents can be found here: <ul style="list-style-type: none"> Advise: https://www.serv.be/sites/default/files/documenten/SERV_20190513_e-inclusie_ADV.pdf Actions and recommendations: https://www.serv.be/sites/default/files/documenten/20180703%20Digitalisering%20-%20aanbevelingen%20en%20acties.pdf
	Series of expert interviews and meetings with Christine Copers from BOSA (Policy supporting service of the Federal government) on inclusion-by-design principles, the 8 profiles of digital inequalities, the set-up of an e-inclusive panel of test users and so forth, in order to collaborate and provide use cases for the Digital Playbook, eg. a series of tools that can be used by governmental bodies to strengthen the inclusiveness and accessibility of their digital services. This resulted into a proposal for an additional valorization track – IDEALiC2 – that focuses solely on setting up further inclusion by design principles.
	Several meetings with LINC vzw, a network organization in the city of Leuven, on the establishment and coordination of an e-inclusive panel of test users for inclusion-by-design exercises. The user panel was realized in 2019 and has been integrated in 5 research proposals. It has also been integrated as a use case in

	the Digital Playbook of BOSA.
	Collaboration as jury member for the Digital Belgium Skills Fund, coordinated by the BOSA, federal government, in order to allocate approximately 5.6 million euros to digital inclusion initiatives in Belgium.
>2019	Collaboration as jury member for the Digital Belgium Skills Fund, coordinated by BOSA, federal government, in order to allocate approximately 5.6 million euros to digital inclusion initiatives in Belgium.
	Participation in a Round Table organized by SERV (Sociaal Economische Raad Vlaanderen), starting with a presentation on the IDEALiC project about the impact of policy to resolve e-inclusion issues, followed by a round table discussion on (a) the results of e-inclusion research, (b) initiatives taken by departments, agencies and other relevant actors at the level of the Flemish government (VVSG, Digipolis, Agentschap Informatie Vlaanderen...), (c) examples of good practices regarding inclusive digital services and digital skills development (City of Antwerp, City of Kortrijk, Studietoelage, VDAB...), preconditions to reach diverse vulnerable groups (Anysurfer, Link in de Kabel...). More information on the round table can be found here: https://www.serv.be/serv/evenement/serv-rondetafel-e-inclusie
	Additional research assignment for the Royal Foundation King Baudouin with the aim of creating a yearly barometer on digital inclusion. The first barometer was launched in 2020 and has received extensive attention by both media as policy makers. The barometer itself can be found here: https://www.kbs-frb.be/nl/Activities/Publications/2020/2020_08_24_CF .
	Organization of an interactive participatory session during the expert meeting on e-inclusion organized by VVSG and Mediawijs, as a preparatory phase for future policy recommendations towards local authorities.
	In October 2019, Ilse Mariën, the lead coordinator at the Flemish side of the project team, was appointed as advisor on digital inclusion at the cabinet of Minister Bart Somers, competent for Internal Affairs, Local Authorities, Equal Opportunities and Integration.
	Collaboration with BOSA (policy supporting service of the Federal government) for an informative session on e-inclusion with over 40 representatives of different federal policy departments, with a specific emphasis on the overall outcomes of the IDEALiC project, the results of the policy analysis section and the conceptual set-up of an inclusion-by-design toolkit.

Presentations at (inter)national conferences and events

2015	Valenduc G. (2014) Qui fait quoi sur internet? Analyse des inégalités sociales dans l'utilisation d'internet en Belgique en 2014. Contribution to a blog epn-ressources.be in relation to the organization of the "Semaine numérique" (20-30 avril 2015). The contribution was also published in the Educational Notes of FTU.
	lordache, C., Baelden D., Mariën, I., Van Audenhove, L. (2015) Promoting and

	measuring digital skills and competences: A quick scan analysis of 13 digital literacy frameworks. Digital Literacy: Policies, research and good practices, University of Padua, 10th December 2015, Padua, Italy. Presentation.
	Mariën, I., Baelden, D., Van Audenhove, L., & Mathé, J.J. (2015) Reconsidering media literacy in practice: A quick-scan analysis and in-depth comparison of 25 media literacy frameworks. IAMCR Conference Hegemony or Resistance? The Ambiguous Power of Communication? 12-16 July, Montreal, Canada. Presentation.
	Mariën, I., Baelden, D. (2015) Masterclass Digitaliteit. KBC Leuven, 4 September 2015. Presentation.
	Mariën, I. (2015) Naar een e-inclusiebeleid op maat van mensen in armoede. Academische zitting, De Lage Drenpael, Mechelen, 2 October, Mechelen. Presentation.
	Mariën, I. (2015) 8 profielen van digitale ongelijkheden. Visie- en vormingstraject van het Vlaams Kenniscentrum voor Mediawijsheid, Mediawijs.be 'Lokale e-inclusiepraktijken', 29 October 2015, Locus, Brussel. Presentation.
	Mariën, I. & Baelden, D. (2015) Digitale ongelijkheden: 8 profielen. Studie- en netwerkdag Digitale Week 2015 in Kortrijk, organized by Stad Kortrijk, 30 april, Kortrijk. Presentation and brainstorm session.
	Mariën, I. (2015) De digitale kloof in transitie. Seminarie 'Een kluif aan de kloof', organized by KORTOM, 21 April, De Markten, Brussel. Presentation.
	Mariën, I. (2015) Digitale ongelijkheden en e-inclusie in context. Ledenvergadering De Katrol, 23 March, Ghent. Presentation.
	Valenduc G. (2015) Inégalités et diversité dans l'accès aux TIC et dans leurs usages, Séminaire CERTICA, Université de Liège, 12/03/2015.
	Mariën, I. (2015) Digital inequalities in context. Guest lecture Vrije Universiteit Brussel, Course 'Internet Governance', Prof. Dr. Morganti, L., 21 October 2015, 2 hours. Teaching course.
	Brotcorne P. (2015) Participation à la table ronde "Administration en ligne", colloque sur le langage juridique clair organisé par easy.brussels et l'ASBL Droits quotidiens, Bruxelles, 14/12/2015. Presentation.
2016	Brotcorne P. (2016) Enseigner l'informatique, éduquer au numérique, communication au colloque Didapro-DidaSTIC, Namur, 25/01/2016. Presentation.
	Brotcorne, P. (2016) Les inégalités numériques: quelles significations aujourd'hui?, Journée annuelle pour les formateurs en PMTIC. Journée d'étude organisée par le LABSET, ULG, 2 décembre 2016. Presentation.
	Brotcorne, P. & Schurmans, D. (2016) L'inclusion numérique par l'amélioration du pouvoir d'agir: une perspective de recherche renouvelée, intervention dans le cadre des midis du CIRTES, Université catholique de Louvain, 14 novembre 2016. Presentation.
	Brotcorne, P. (2016) Enseigner les compétences numériques à l'école et pour la

	<p>vie, quels leviers, quels obstacles? , dans colloque Didapro 6 – DidaSTIC. Quelles éducations au numérique, en classe et pour la vie? Faculté d'informatique, UNamur, Namur, janvier 2016. Presentation.</p>
	<p>Mariën, I., Brotcorne, P. Schurmans, D. & Van Buggenhout, N. (2016) Co-organisation du colloque Le citoyen bruxellois numérique: vers une région inclusive, avec Easybrussels, agence pour la simplification administrative de la Région Bruxelles-Capitale, 30 novembre 2016.</p>
	<p>Van Audenhove, L., Claassen, W., Iordache, C., Mariën, I. & Craffert, L. (2016) Media literacy policy in the EU and South Africa. A comparative analysis. CPR SOUTH, 8-11 September, Zanzibar. Presentation.</p>
	<p>Mariën, I., Salemink, K. (2016) Back to the drawing board: Towards a renewed conceptual framework for digital exclusion. IAMCR 2016. Memory, commemoration and communication: Looking back, looking forward. July 27-31, Leicester, UK. Available as abstract only. Presentation.</p>
	<p>Mariën, I. (2016) e-Inclusie in het volwassenenonderwijs: wie, wat, hoe, waarom? Trefdag VOCVO 'Lerende volwassenen in leerrijke leef-, werk- en educatieve omgevingen', 20 May. Presentation and interactive workshop.</p>
	<p>Mariën, I. (2016) Een e-inclusie aanpak op maat van ??? Trefdag Digidak, 31 March, Turnhout. Presentation and workshop.</p>
	<p>Mariën, I. (2016) Slim en inclusief digitaliseren en innoveren: een aanpak op maat van alle burgers. Studiedag 'Naar e-inclusieve digitaliseringsprocessen', Vlaams Kenniscentrum Mediawijsheid Mediawijs.be, 17 March, Brussels. Presentation and workshop.</p>
	<p>Mariën, I. (2016) Who's in, who's out: 8 Profiles of digital inequalities. IAMCR 2016. Memory, commemoration and communication: Looking back, looking forward. July 27-31, Leicester, UK. Available as abstract only. Presentation.</p>
	<p>Mariën, I. (2016) Digitale kloof en mediawijsheid. Guest lecture University of Ghent, Course 'Nieuwe Media Studies', Master Nieuwe Media en Maatschappij, Prof. Dr. Ralf De Wolf, 7 December 2016, 2 hours. Teaching course.</p>
	<p>Mariën, I. (2016) De digitale kloof ontleed. Guest lecture LUCA campus Gent, 16 students 'Digitale Vormgeving, professional bachelor, 2nd year, Prof. Frank Maet (Techniekfilosofie), Prof. Ingwio D'Hespeel (Digitale Studio), 5 December 2016, 6 hours. Teaching course.</p>
	<p>Mariën, I. (2016) Digital inequalities in context. Guest lecture Vrije Universiteit Brussel, Course 'Internet Governance', Prof. Dr. Morganti, L., 26 October 2016, 9 November 2016, 4 hours. Teaching course.</p>
	<p>Mariën, I. (2016) e-Inclusie: waarom, wat, wie? Denkdag Centrum voor Taal en Onderwijs (KU Leuven). Taalrijk, kansrijk. 27 May, Vaalbeek, Belgium. Presentation.</p>
	<p>Mariën, I. (2016) Pdh research 'De dichotomie van de digitale kloof doorprikt: Een onderzoek naar de oorzaken van digitale uitsluiting en naar strategieën van een duurzaam e-inclusiebeleid', nominated for M-awards 2016, Mediawijs Congres, Mediawijs – Vlaams Kenniscentrum voor Mediawijsheid.</p>

	Schurmans, D. & Brotcorne, P. (2016) Be.brussels: un portail d'information accessible à tous?, in Le citoyen bruxellois numérique: vers une région inclusive. Colloquium organized by Easybrussels, agence pour la simplification administrative de la Région Bruxelles-Capitale, in collaboration with IDEALIC-BELSPO (VUB, UCL, FTU), 30 November 2016.
2017	Brotcorne, P. (2017) Quelle est la portée politique et sociale de l'approche sociocritique du numérique en éducation? In Une approche sociocritique du numérique en éducation: enjeux et questionnements, Journée d'études, Université de Grenoble, France, June 2017.
	Mariën, I., Laenens, W. (2017) 8 profielen van digitale ongelijkheden: een interactieve denkoefening. Teamoverleg Open School Brugge-Oostende-Westhoek, 13 januari 2017, 3 hours. Interactive brainstorm.
	Brotcorne P. (2017) Inégalités numériques : significations et enjeux actuels pour les publics en situation d'illettrisme. Conférencière invitée au colloque : « l'apprentissage des compétences de base comme défi à la numérisation », colloque annuel de La Fédération Lire et Ecrire de Suisse romande, 3 novembre 2017.
	Brotcorne, P. (2017) Les inégalités chez les apprenants : mais de quelles inégalités parle-t-on. Colloque international en éducation (CRIFPE) UQUAM, Montréal, 18-19 mai 2017.
	Brotcorne P. (2017) Quelle(s) posture(s) critique(s) pour une approche sociocritique du numérique en éducation ?. Colloque international : « Une approche sociocritique du numérique en éducation ». Université de Sherbrooke, 15-16 mai 2017.
	Laenens, W., Mariën, I., Van den Broeck, W. (2017) New ways of addressing all citizens in a digitalised society: Communication channels for public governmental services. IAMCR 2017. Transforming Culture, Politics & Communication: New media, new territories, new discourses. July 16-20, Cartanega, Colombia.
	Mariën, I. (2017) PAR4-P/S. Zeven bouwblokken voor e-inclusie: visieontwikkeling in de praktijk. Seminarie Politeia, 24 February, Brussel, Belgium.
	Mariën, I. (2017) e-Inclusion for a sustainable digital society. GSTIC 2017. Global science, technology and innovation. October 23-25. Brussels, Belgium.
	Mariën, I. (2017) Digitale in- en uitsluiting in het onderwijs. ICT-praktijkdag, 22 May, VIVES Kortrijk, presentation.
	Mariën, I., Walravens, N., Ballon, P., & Heyman, R. (2017) Smart Cities en de rol van e-inclusie. Trefdag e-inclusie, Mediawijs i.s.m. antwerpen.be-centrum, digidak en Vormingplus Antwerpen, 23 June, Provinciaal vormingscentrum, Malle.
	Mariën, I., & Laenens, W. (2017) 8 profiles of digital inequalities. Centrum voor Basiseducatie vzw – Leerpunt Waas & Dender, Sint-Niklaas, 09 November, presentation.

	Mariën, I. (2017) 8 profiles of digital inequalities. Annual Conference Life Long Learning Platform. Education in a Digital World: Reducing inequalities through lifelong learning. 31 May, 1 June, Talinn University, Estonia, presentation and workshop.
	Mariën, I. (2017) e-Inclusion for a sustainable digital society. GSTIC 2017. Global science, technology and innovation. October 23-25. Brussels, Belgium.
	Laenens, W., Mariën, I., & Van den Broeck, W. (2017) New ways of addressing all citizens in a digitalised society: Communication channels for public governmental services. IAMCR 2017. Transforming Culture, Politics & Communication: New media, new territories, new discourses. July 16-20, Cartanega, Colombia.
	Heyman, R. & Mariën, I. (2017) Data literacy for smart cities and smart citizens: A matrix of indicators. ECREA Digital, Digital Culture meets data: Critical approaches, 6-7 November, Brighton, UK.
	Mariën, I. (2017) Empowerment and disempowerment in the digital age. Guest lecture Vrije Universiteit Brussel, Course 'Internet Governance', Prof. Dr. Van Audenhove, L., 25 October 2017, 2 hours.
	Mariën, I. (2017) Smart Cities and e-inclusion. Guest lecture University of Antwerp, Smart City Summer School, Prof. Dr. Oosterlinck, S., 5 September 2017, 3 hours.
	Mariën, I. (2017) (Dis)empowerment in a digital society - Moderator at Reason and Engage (VUB) conference, 21 November 2017, Bronx, Brussels. Moderator.
2018	Brotcorne, Périne (2018) Élargir la base du « paradigme des usages » pour appréhender les pratiques numériques : quelques éléments pour une approche renouvelée des études d'usages en éducation. Colloque international francophone sur les Usages du numérique en éducation : Regards Critiques, ENS LYON, Lyon, France, (21-23/03/2018).
	Mariën, I. (2018) Digital Inclusion: Theories, Policies, Practices & Monitoring. Guest lecture Vrije Universiteit Brussel, Course Media Literacy and Digital Inclusion, Master New Media and Society, Prof. Dr. Leo Van Audenhove, 12 hours.
	Laenens, W., Mariën, I., & Walravens, N. (2018) Participatory action research for the development of e-inclusive smart cities. 15th Architectural Humanities Research Association International Conference, 15-17 November 2018, Eindhoven.
	Asmar, A., & Mariën, I. (2018) The legitimacy of our Undiscipline: toward a rethinking of the ethnographic practice. 13th Annual ethnography symposium, 28-31 August, Copenhagen, Denmark, 24p.
	Laenens, W., Mariën, I., & Walravens, N. (2018) PAR4-B: Participatory Action Research for an E-inclusive Smart Brussels. Innoviris, Brussels, 17 January, presentation.
	Van Audenhove, L. Mariën, I., Craffert, L., & Grove, W. (2018) South Africa's e-

	Skills Policy. From e-Skills to Media Literacy? In: Paul Cunningham & Miriam Cunningham (ed.) IST Africa 2018 Conference Proceedings, IIMC International Information Management Corporation.
	Asmar, A., Mariën, I., & Korenhof, M. (2018) E-Inclusief Onderwijs in het Mbo. Ondersteboven van Onderwijs, ORD 2018, 13-15 June 2018, Nijmegen, NL. Poster presentation.
	Asmar, A., Mariën, I. & Van Audenhove, L. (2018) Digital disempowerment in the digital age: An empirical research from the life course perspective. IAMCR 2018, Reimagining sustainability: Communication and media research in a changing world, 20-25 June, Eugene, United States, 12p.
	Asmar, A., Mariën, I. & Korenhof, M. (2018) e-Inclusief onderwijs in het mbo: Een aanpak op maat van 8 media profielen. Onderste Boven van Onderwijs, 13-15 Juni, Nijmegen, Nederland.
	Mariën, I. (2018) Course Gebruikers & Gedrag (Users & Behavior), 2 nd Bachelor 2 of the Interactive Multimedia Design course, Thomas More Mechelen-Antwerp, 40 students, 72 hours.
2019	Faure L. & Schurmans, D. (2019) L'autonomie digitale au fil des trajectoires de vie. Séminaire des Midis du CIRTES, UCLouvain, 25 mars 2019.
	Brotcorne, P. (2019) Les inégalités sociales numériques en éducation: termes et enjeux d'une question sociale minorée. Journée d'étude internationale : inégalités numériques, ESPE de Caen; Maison de la Recherche en Sciences Humaines, Mars 2019, Caen, France.
	Brotcorne, P. (2019) Une conception de services numériques d'intérêt général qui peine à inclure tous les usagers. Journée d'étude internationale: analyses des représentations des publics et des usages des internautes : retours critiques. Laboratoire Communication et Sociétés EA 46 47 à l'Université Clermont Auvergne, 28 et 29 mai 2019.
	Brotcorne, P. (2019) Les services d'intérêt général à l'épreuve de la numérisation: études de cas dans les secteurs de la mobilité, de la santé et de l'administration. Journée d'étude : Numérisation des services publics. Quelle prise en compte des publics peu qualifiés et illettrés ? Bruxelles, Lire et Ecrire Communauté française, 23 mai 2019.
	Brotcorne, P. (2019) Inégaux face aux technologies numériques : un problème d'accès ?. Séminaire: Parentalité et Numérique. Le tissu associatif, pilier de l'accompagnement des familles pour une transition numérique inclusive. Délégation générale Wallonie-Bruxelles, Paris, France, 12 juin 2019.
	Brotcorne, P. & Faure, L. (2019) Une conception de services numériques d'intérêt général qui peine à inclure tous les usagers. Les Midis du service d'études de la CNAV, la CNAV. Paris, France, 27 juin 2019.
	Brotcorne, P. (2019) Les services d'intérêt général à l'épreuve d'une numérisation inclusive: études de cas dans les secteurs de la mobilité, de la santé et de l'administration. Journée de mise au vert. Commission wallonne pour l'Énergie, Namur, 7 octobre 2019.

	Faure, L. (2019) L'autonomie numérique au fil des trajectoires de vie. Enquête auprès des usagers. Intervention au Collège des Secrétaires Fédéraux du MOC, Namur, 09 octobre 2019.
	Brotcorne, P. (2019) Fracture numérique: de quelles inégalités est-elle le nom ? . Place de la Promotion de la Santé à l'école dans la société numérique. Association Professionnelle des Médecins Scolaire, Dinant, 15 et le 16 novembre 2019.
	Brotcorne, P. (2019) Les services d'intérêt général à l'épreuve d'une numérisation inclusive: balises pour la prise en compte des personnes en situation d'illettrisme dans la conception. Intervention dans le cadre des 30 ans de Lire et Ecrire Wallonie, Ottignies, le 7 novembre 2019.
	Faure, L. (2019) L'autonomie numérique au fil des trajectoires de vie. Enquête auprès des usagers. Intervention pour le réseau des AID (réseau d'Actions Intégrées de Développement), Namur, 19 novembre 2019.
	Pokpas, C., Craffert, L., Van Audenhove, L., & Mariën, I. (2019) Woman and ICT in South Africa: Mental models on gender and ICT in marginalised communities. In: Paul Cunningham & Miriam Cunningham (ed.) IST Africa 2019 Conference Proceedings, IIMC International Information Management Corporation.
	Katunga, N., Njenga, J., Craffert, L., Van Audenhove, L., & Mariën, I. (2019) Using Social Media to Support Community Development. A case study of e-inclusion intermediaries in underprivileged communities in South Africa. In: Paul Cunningham & Miriam Cunningham (ed.) IST Africa 2019 Conference Proceedings, IIMC International Information Management Corporation.
	Wauters, C., & Mariën, I. (2019) Digital public services: A threat to citizens' rights? An insight into Belgian digital inclusion policies. IAMCR 2019 Annual Conference 'Communication, Technology and Human Dignity: Disputed Rights, Contested Truths', July 7-11, Madrid, Spain.
	Mariën, I., Asmar, A., Korenhof, M., & Klaijnsen, A.C. (2019) e-Inclusive education in the Netherlands: A customized approach framed within 8 media profiles. IAMCR 2019 Annual Conference 'Communication, Technology and Human Dignity: Disputed Rights, Contested Truths', July 7-11, Madrid, Spain.
	Award 'Mediawijs Onderzoek' 2019 for the IDEALiC project, granted by Mediawijs, the Flemish Knowledge center for Media and Digital Literacy.
	Mariën, I. (2019) Digital Inclusion: Theories, Policies, Practices & Monitoring. Guest lecture Vrije Universiteit Brussel, Course Media Literacy and Digital Inclusion, Master New Media and Society, Prof. Dr. Leo Van Audenhove, 12 hours.
	Mariën, I. (2019) Appointed as guest professor for the course 'Les enjeux numériques', 3rd bachelor Information Systems, UCL, 8 hours.
	Mariën, I. (2019) Course Gebruikers & Gedrag (Users & Behavior), 1st and 2nd Bachelor, Course Interactive Multimedia Design, Thomas More Mechelen-Antwerp 60 students, 72 hours.

	Brotcorne, P. (2020). Fractures numériques et Fractures sociales à l'heure du déconfinement. Formation à distance donnée en co-animation avec Pascal Plantard, Professeur des Universités en Sciences de l'Éducation, Université Rennes 2 et co-directeur de GIS M@rsouin. Institut des sciences sociales du travail de l'ouest (ISSTO), Université Rennes 2, Bretagne, France, 2 juillet 2020.
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6. PUBLICATIONS

Peer Review (pdf available in annexes)

- Mariën, I., Van Damme, S. (2016) Allemaal digitaal: 7 bouwblokken voor een duurzaam e-inclusiebeleid. Brussel: Politeia. (Not available in pdf, can be purchased here: <https://www.politeia.be/nl/publicaties/341-allemaal+digitaal>)
- Mariën, I., Heyman, R., Salemink, K., & Van Audenhove, L. (2016) Digital by Default: Consequences, Casualties and Coping Strategies. In: Servaes, J. & Oyedemi, T. (eds.) Social Inequalities, Media and Communication: Theory and Roots. Rowman and Littlefield. (Not available as open access)
- Van Audenhove, L., Vanwynsberghe, H., Mariën, I. (2017) Mediawijsheid in Vlaanderen. Van parlementaire discussie tot de oprichting van het Kenniscentrum Mediawijsheid. Tijdschrift voor Communicatiewetenschappen, 45(4), 244-266. (Annex 01)
- Iordache, C., Mariën, I., Baelden, D. (2017) Developing digital skills and competences: A quick-scan analysis of 13 digital literacy models. Italian Journal of Sociology of Education, 9(1), 6-30. (Annex 02)
- Van Audenhove, L., Vanwynsberghe, H., Mariën, I. (2018) Media literacy policy in Flanders Belgium: From parliamentary discussions to public policy. Journal of Media Literacy Education, 10(1), 59-81. (Annex 03)
- Iordache, C., Mariën, I. & Baelden, D. (2018) Развој дигиталних вештина и компетенција: брзи преглед стања 13 модела дигиталне писмености. The Herald of the National Library of Serbia, XVI(19): 63-101. (Annex 04)
- Collin, S. et Brotcorne, P. (2019). "Contribution d'une approche sociocritique à l'étude des effets du numérique en éducation". Dans G-L Baron & C. Depover (dir.). Les effets du numérique sur l'éducation Regards sur une saga contemporaine. Presses Universitaires du Septentrion: Paris. (Not available as open access)
- Asmar, A., Mariën, I. (2018) Digital (dis)empowerment in the digital world: an empirical perspective from a life course perspective. IAMCR 2018, Reimagining sustainability: communication and media research in a changing world, June 20-24th, Oregon, US, 12p. (Annex 05)
- Brotcorne, P., Bonnetier, C., Vendramin, P. (2019) Une numérisation des services d'intérêt general qui peine à inclure et à émanciper tous les usages. Technologie de l'Information, Culture & Société, 125-126, 15p. (Annex 06)
- Asmar, A., Van Audenhove, L., Mariën, I. (2019) Rethinking access in a polymedia environment: From equipment to services (Under review). (Annex 07)

- Brotcorne, P., Collin, S., Schneider, E. (2019) Des recherches en éducation au domaine des technologies éducatives: quelles dynamiques d'appropriation des approches critiques? *Formation et Profession*, 27(3), 22-35. (Annex 08)
- Collin, S., Brotcorne, P. (2019) Capturing digital (in)equity in teaching and learning: a sociocritical approach. *The International Journal of Information and Learning Technology*, 36(2), 169-180. (Annex 09)
- Brotcorne P., Bonnetier C. et Vendramin P. (2020). Une numérisation des services d'intérêt général qui peine à inclure tous les usagers. *Revue Terminal. Les déclinaisons de l'empowerment en régime numérique*, 125-126. (Annex 10)
- Asmar, A., Mariën, I., Van Audenhove, L. (2020) No one-size fits all! Eight profiles of digital inequalities for customized inclusion strategies. *New Media and Society* (Under review). (Annex 11)
- Asmar, A., Van Audenhove, L., Mariën, I. (2020) Social support patterns for digital inclusion: Towards a typology of social support patterns. *Social Inclusion*, 8(2), 27p. (Annex 12)
- Asmar, A., Van Audenhove, L., Mariën, I. (2020) De invloed van sociale ondersteuning op digitale zelfredzaamheid. *Jaarboek Armoede 2020*, 21p. (Under review). (Annex 13)
- Faure, L., Vendramin, P., Schurmans, D. (2020) A situated approach to digital exclusion based on life courses. *Internet Policy Review*, 9(2), 18p. (Annex 14)

Others

- Valenduc, G. (2015) Qui fait quoi sur internet? Analyse des inégalités sociales dans l'utilisation d'internet en Belgique en 2014. Note d'éducation permanente de l'ASBL Fondation Travail-Université (FTU), 04/2015, 15p. Bruxelles: FTU.
- Prieto, L.A., & Valenduc, G. (2015) Digital skills and labour opportunities for low-skilled. *Dynamics of Virtual Work, Working Paper Series*, 6, Cost Action IS 1202, 15p. UK: University of Hertfordshire.
- Segers, K., Mariën, I., & Lieten, I. (2015) Iedereen verdient digitale kansen. Opinion piece, MO* (mo.be), 30 April 2015, online publication.
- Mariën, I. (2016) De dichotomie van de digitale kloof doorprikt: Een onderzoek naar de oorzaken van digitale uitsluiting en naar strategieën voor een duurzaam e-inclusiebeleid. Unpublished Doctoral Thesis Vrije Universiteit Brussel, 410p.
- Mariën, I. (2016) Digitale uit- en insluiting bij kwetsbare groepen. *Cahier-Interact* (9), 6p. Brussel: Brussels Kunstenoverleg.
- Mariën, I. (2016) Getting all aboard the digital bandwagon! Opinion piece, imec Magazine, November 2016, online publication.
- Brotcorne, P. (2016) Inégaux face au numérique: un problème d'accès? Article published in l'Observatoire belge des inégalités, July 2016.
- Collin, S., Brotcorne, P. & al. (2016). Vers une approche sociocritique du numérique en éducation: une structuration à l'œuvre. *Adjectif: recherches sur les TIC*, March 2016.

- Mariën, I., Brotcorne, P. Schurmans, D & Van Buggenhout, N. (2016) L'inclusion numérique en région bruxelloise: 12 recommandations pour une politique d'inclusion durable. Report based upon the outcomes of the colloquium 'Brusselse digitale burger' organized by Easybrussels and the IDEALiC Research team, November 30th.
- Van Audenhove, L., Claassen, W., Iordache, C., Mariën, I. & Craffert, L. (2016) Media literacy policy in the EU and South Africa. A comparative analysis. CPR SOUTH, 8-11 September 2016, Zanzibar.
- Schurmans, D., Mariën, I., Laenens, W., & De Coninck, J. (2016) Digitale inclusie voor sociale inclusie. Welzijn en welbevinden van kwetsbare jongeren in de digitale stad: implementatie en beleid? End report for Prospective Research for Brussels.
- Bonnetier, C., Brotcorne, P. Schurmans, D. & Vendramin, P. (2017) Analyse de la fracture numérique sur le territoire de la Région de Bruxelles-Capitale. Report realized for the Centre Informatique de la Région Bruxelloise, commissioned by the State Secretary of the Brussels Capital Region, responsible for IT and Digital Transformation.
- Brotcorne P. (2017) La fracture numérique: mythe ou réalité? L'essor. Revue trimestrielle du secteur de l'insertion socioprofessionnelle, n°82, p. 7-11.
- Brotcorne P. (2017) La fracture numérique: de quelles inégalités est-elle le nom? Sciences frictions ECHOS, n°97, Bruxelles Laïque, 29-32.
- Brotcorne, P. (2017) L'éducation au numérique, à l'informatique: termes et enjeux d'un débat houleux dans J. Henry., A. Nguyen., Vandeput, (Ed.) L'informatique et le numérique dans la classe. Qui, quoi, comment? Presses Universitaires de Namur, Namur (Belgique), 7-22.
- Heyman, R., Mariën, I., & Ballon, P. (2017) Pleidooi voor datageletterdheid: zonder slimme stedelingen geen slimme stad. In: Ballon, P., Macharis, C., Ryckewaert, M. (eds.) De humane stad. Brussel: Politeia.
- Mariën, I., Donders, K., Vanhaeght, A.-S., & Walravens, N. (2017) PAR4-P: een shift in beleidsvorming voor een menselijke digitale stad. In: Ballon, P., Macharis, C., Ryckewaert, M. (eds.) De humane stad. Brussel: Politeia.
- Brotcorne, P. (2018) Smartphones et écrans plats: des pauvres vraiment pauvres? In Pauvrophobie. Petite encyclopédie des idées reçues sur la pauvreté. Publication coordinated by le Forum bruxellois de lutte contre les inégalités, Luc Pire édition, Brussels.
- Mariën, I. (2018) Inclusief digitaal: het nieuwe normaal. Samenleving en Politiek 'België, land van verborgen kloven', Jaargang 25, April 2018.
- Brotcorne, P. (2018) Comprendre le pouvoir des algorithmes. L'état de la Démocratie. La 96e Semaine Sociale du Mouvement Ouvrier Chrétien, 60-70.
- Brotcorne, P. (2019) Pour une approche systémique des inégalités numériques parmi les jeunes en âge scolaire. Nouveaux Cahiers de la Recherche en Education, 21(3), 134-153.
- Brotcorne, P. (2018) Digitalisation des services publics: la face sombre. Revue Quart Monde, 248, 4-7.

- Brotcorne, P. (2018) Smartphones et écrans plats: des pauvres vraiment pauvres? In: Le Forum- Bruxelles contre les inégalités, Pauvreté. Petite encyclopédie des idées reçues sur la pauvreté, (p. 103-106), Luc Pire: Bruxelles.
- Faure, L. (2019) IDEALiC: l'inclusion numérique par l'amélioration de l'autonomie et du pouvoir d'agir au fil du parcours de vie. Etat des lieux et perspectives de l'inclusion numérique en Belgique. Note d'Education Permanente de l'ASBL Foundation Travail-Université (FTu), 11, 5p.
- Brotcorne, P., Faure, L., & Vendramin, P. (2019) IDEALiC. L'inclusion numérique par l'amélioration de l'autonomie et du pouvoir d'agir au fil du parcours de vie. Science Connection, 60, 35-37. Brussels: Belspo.
- Mariën, I., Asmar, A., Wauters, C., & Van Audenhove, L. (2019) IDEALiC. Digitale inclusie door het versterken van autonomie en empowerment doorheen de levensloop. Science Connection, 60, 35-37. Brussels: Belspo.
- Mariën, I. (2019) Digitale inclusie verdient meer aandacht. Sterk Magazine (Sterke verhalen van mensen met een handicap), 2019:30 (juni), p. 10.
- Brotcorne, P. (2020) Une numérisation impensée de services d'intérêt general: un mécanisme producteur d'inégalités. Journal de l'Alpha, 218, l'Alpha à l'ère du Numérique, 88-98.
- Asmar, A., Van Audenhove, L., & Mariën, I. (2020) De invloed van sociale ondersteuning op digitale zelfredzaamheid. Wie helpt wie, op welke manier en wanneer bij het gebruik van digitale toepassingen? Jaarboek Armoede & ICT 2021. (Under review).

Media involvement

- IDEALiC (2015) Mentioning in Du Brulle, C. L'exclusion numérique concerne 15% de la population en Belgique. Article in Daily Science, 17 March 2015, online publication.
- IDEALiC (2015) Mentioning in Elkayouhi, S. Alexander De Croo zet in op digitale inclusie met IDEALiC. Article in DataNews.be, 17 March 2015, online publication.
- IDEALiC (2015) Mentioning in Elkayouhi, S. Alexander De Croo mise sur l'inclusion numérique avec IDEALiC. Article in Levif, 17 March 2015, online publication.
- IDEALiC (2015) Mentioning in Jennotte, A. (2015) Il y a de nouvelles formes d'exclusion numérique. Article in Le Soir, 14 March 2015.
- IDEALiC (2015) Mentioning in Manise, J.-L. (2015) IDEALiC: l'inclusion numérique dans la nébuleuse belgo-belge. Article in IT Belgo Wallone, 17 March 2015.
- Mariën, I. (2015) Heyvaert, B. Iedereen moet mee met WWW. Article in Het Nieuwsblad, 13 March 2015, interviewed as expert.
- IDEALiC (2015) Mentioning in Furnière, A. Government launches research project on digital inclusion. Article in Flanders Today, 24 March 2015, online publication.
- IDEALiC (2015) Mentioning in Van Hoyweghen, S. Federale overheid lanceert onderzoeksproject digitale inclusie. Article on Engineering.net, 17 March 2015, online publication.

- Mariën, I. (2016) Mentioning in Teffer, P. Juncker's unrealistic promise of free WIFI. Article in EU Observer, 14 September 2016, online publication, interviewed as expert.
- Mariën, I. (2016) Mentioning in De Walsche, A. Moeten we bang zijn voor de stad van de toekomst? Article in MO*, March 2016, online publication, interviewed as expert.
- Mariën, I. (2016) Mentioning in Van Halst, I. Is er nog wel leven zonder het internet? Article in Kerk en Leven, 9 November 2016, interviewed as expert.
- Mariën, I. (2016) Getting all aboard the digital bandwagon! Opinion piece, imec Magazine, November 2016, online publication.
- Mariën, I. (2016) Mentioning in De Walsche, A. (2016) Moeten we bang zijn voor de stad van de toekomst? Article in MO*, March 2016, online publication, interviewed as expert.
- Brotcorne, P. (2016) Mentioning in Vellande, D. (2016). Les réseaux sociaux : pas toujours gage de plus de démocratie. Article in L'avenir, 24 Octobre 2016, interviewed as expert.
- Mariën, I., Wauters, C. (2017) Mentioning in e-Inclusie: wat en waarom? Content contribution to the subsite www.e-inclusie.be, coordinated by Mediawijs, the Flemish Knowledge Center for Media Literacy, 28 November 2017, online publication, interviewed as experts.
- Brotcorne, P. & Mariën, I. (2017) Guest experts at RTBF La Première, 'Questions clés', February 20th.
- Brotcorne, P. (2018) Guest expert in France Culture Radio, on January 12th, on 'Un monde de fractures' focusing on the transition from differences in access to differences in usage.
- Mariën, I. (2019) Guest expert in Bij Debecker, Radio 1, 21 februari 2019, on 'e-Inclusie in Vlaanderen'.
- Brotcorne P. (2020) Les experts de l'UCLouvain vous répondent: "Le confinement a exacerbé la fracture numérique", Le vif, 12/06/2020. Interviewed as expert.

7. ACKNOWLEDGEMENTS

Throughout the four years of the IDEALiC project, the research team was continuously able to build and rely on the involvement of both French speaking and Dutch speaking digital inclusion actors stemming from public institutions, policy departments, civil society and local authorities from the Walloon Region, the French Speaking Community, the Brussels Capital Region, Flanders and the Federal level.

The IDEALiC research team is greatly thankful for the efforts that all of these actors displayed. Firstly, by their willingness to contribute to the IDEALiC project by way of providing access to vulnerable groups, sharing their experiences on failed projects and best practices, delivering a critical view on the outcomes of the project and signaling new issues at hand in terms of digital exclusion mechanisms. Second, by their engagement to validate and disseminate the outcomes of the IDEALiC project to a broader audience and the

numerous invites for keynote speeches, presentations and workshops on e-inclusion. Without such engagement the impact of the IDEALiC project would not have been what it is today. And third, by taking up the recommendations of the IDEALiC team as valid and have them integrated in policy documents, vision notes and white papers, thus steering federal, regional and local digital inclusion policies into a future in which each Belgian citizen can participate and benefit fully from today's digital society.

Kick-off event

The kick-off event of the IDEALiC project took place on March 13th, 2015 at SMIT, VUB. Over 40 stakeholders and actors from policy departments, civil society, local authorities, public institutions and academia were present, witnessed the interesting speech by Alexander De Croo, Federal Minister of the Digital Agenda, a contribution on the Brain.be program by Frank Monteny, Director General Research at Belgian Science Policy Office (BELSPO), and received a heads-on about the set-up of the IDEALiC project by the research team.

Follow-up of the project

The progress and quality supervision of the IDEALiC project was realized by a two-way strategy: (1) through follow-up committee meetings and (2) through working group meetings with actors from policy, civil society, public and private institutions.

Role of the Follow-up Committee:

- Critically evaluate and constructively discuss the scientific quality and progress of the IDEALiC project;
- Provide input and critical reflections for the next steps of the execution plan of the project;
- Redirect the execution plan of the project if needed; and
- Identify potential valorization activities based upon the direct input of civil society and policy actors.

Role of the Working Groups:

- Organize and stimulate knowledge exchange between digital inclusion partners stemming from federal, regional and local level;
- Identify potential valorization activities based upon the direct input of civil society and policy actors; and
- Collect critical and constructive feedback on the overall progress of the IDEALiC project and the next steps of the execution plan.

The Follow-up Committee and working group meetings were organized on:

- March 13, 2015
- May 9, 2016

- June 13, 2017
- June 14, 2018

The members of the Follow-up Committee:

Name & Organization	Organization
Laure Van Hoecke	Mediawijs
Elke Boudry	Mediawijs
Pieter Verdegem	UGent
Thierry Desmedt	UCLouvain
Eric Goubin	Thomas More
Rafaël Huybrechts	CJSM Vlaanderen
Stefan Platteau	Fobagra
François George	ULG
Laure Lemaire	Interface 3
Eric Blanchart	Technofutur
Luc Lathouwers	Agentschap Informatie Vlaanderen
Philippe Vermeulen	FOD Personeel en Organisatie
Beverly Bernard	POD Maatschappelijke Integratie
Hadewijch Vanwysberghe	Mediawijs
Davy Nijs	UCLL
Anne-Sofie Van de Velde	Kabinet minister De Croo
Karim Beseghir	FOD Personeel en Organisatie
François Georges	ULG LABSET
Marieke Zwartjes	Dossierverantwoordelijke BELSPO
Julien Van Geertsom	POD Maatschappelijke Integratie
Christine Mathieu	Federaal planbureau
Lore Hollevoet	Agentschap Informatie Vlaanderen
Philippe Moraldo	Direction Général des Télécommunication et de la Société de l'information chez FOD Economie.
Gunther Mattheussens	POD Maatschappelijke integratie
Rick Meynen	MIVB-STIB
Karen Vos	Digipolis Gent

The members of the Working Groups:

Name & Organization	Organization
Laure Van Hoecke	Mediawijs
Beverly Bernard	POD Maatschappelijke Integratie
Sara Clauw	Arhus
Anne-Sophie Collard	Université de Namur
André Delacherlerie	ACT/AdN
Yannis Derbali	Close The Gap

Pieter Duysburgh	Digipolis Gent
Ank Eijkelkamp	Artevelde Hogeschool Gent
Pierre Fastrez	UCLouvain
Sven Geldof	Agentschap Informatie Vlaanderen
Caroline Gielens	VOCVO
Eric Goubin	Thomas More
Nathalie Hardat	Agence du Numérique
Skrolan Hugens	Stad Antwerpen
Catalina Iordache	Imec-SMIT VUB
Kris Lentacker	Stafdienst Vlaamse Regering
Valérie Miest	Interface 3
Debby Opregt	Antwerpen.be-Centrum
Ann Peeters	Maks vzw
Dana Schurmans	iMinds SMIT VUB
Peter T'Sas	HowAbout
Leo Van Audenhove	iMinds SMIT VUB
Sara Van Damme	Digipolis Gent
Jo Van Hecke	Tonuso
Sofie Vandoninck	Instituut voor Mediastudies KU Leuven
Marieke Zwartjes	Dossierverantwoordelijke BELSPO
David Loyen	Link in de Kabel
Stijn Custers	UC Leuven Limburg
Tanguy Delestré	ICT and Digitisation Advisor - State secretary Bianca Debaets in the Brussels Region
Pol Gerits	DG of Federal Public Service Health, Food Chain Safety and Environment, Brussels
Stefan Van Baelen	imec
Pierre Strumelle	FOD Economie
Stijn Mathé	Antwerpen.be-Centrum
Laure Lemaire	Interface 3
Saar Verhogen	Agentschap Informatie Vlaanderen
Lore Hollevoet	Agentschap Informatie Vlaanderen
Martine Vandermaes	e-Inclusiewerking Oostende
Steven Van den Eynde	Federatie Basiseducatie
Steven Van Haegenberg	Coördinator De Lage Drempel
Emmanuel Boodts	Raadgever Staatssecretaris Bianca Debaets
Rita Lenaerts	SPK (Blenders)
David Van Voren	Advisor Housing Policy, Cabinet Secretary of State of the Brussels-Capital Region, Housing and Equal Opportunities.
Ern Calders	Vormingplus Antwerpen
Lucy Vereertbruggen	Cultuurconnect

The closing event

On September 5th, the IDEALiC research team organized a one-day colloquium on digital inclusion, in collaboration with Belspo-Brain. The day was devoted to the presentation of the results of this project, which has been carried out over the past 4 years by the Vrije Universiteit Brussel (VUB), Université Catholique de Louvain (UCLouvain) and the Fondation Travail-Université (FTU) and has been financed by BELSPO. The discussion on this theme is enriched by the experiences of field actors from the three regions and by the contributions of work carried out in other European countries. Simultaneous interpretation NL/FR was foreseen.

The agenda of the final event was the following:

08h45-09h00	Arrival
09h00-09h10	Introduction <i>Dr. Ilse Mariën - imec-SMIT VUB</i> <i>Prof. Dr. Patricia Vendramin - CIRTES UCL</i> <i>Coordinators of the IDEALiC project</i>
09h10-09h40	Digital Inclusion and Well-Being of Vulnerable People in the UK: Research Lessons and Agendas <i>Dr. Panyiot Tsatsou - University of Leicester</i>
09h40-09h50	Questions from the audience
09h50-10h20	The Digital Capital Index: monitoring citizens' digital inclusion <i>Dr. Massimo Ragnedda - University of Northumbria</i>
10h20-10h30	Questions from the audience
10h30-10h50	Coffee break
10h50-11h30	The development of digital autonomy beyond and accross the life course <i>Axelle Asmar - imec-SMIT VUB</i> <i>Laura Faure - FTU & Dana Schurmans - UCL</i>
11h30-11h40	Questions from the audience
11h40-12h20	Towards a digitalization of public services? Experiences within mobility, health and civic sectors <i>Carole Bonnetier & Périne Brotcorne - CIRTES-UCL</i>
12h20-12h30	Questions from the audience
12h30-13h30	Lunch
13h30-14h00	Digital public services: A threat to citizens' rights? An insight into Belgian digital inclusion policies <i>Chantal Wauters - imec-SMIT VUB</i>
14h00-14h10	Questions from the audience
14h10-14h40	Digital Exclusion illustrated in the movie 'I come from another planet' <i>Yves Dormes - KBS/FRB</i>
14h40-15h00	Coffee break
15h00-16h00	Round table discussions (3x20 min.) with digital inclusion actors and civil society organisations <i>Adrien Godefroid - ARC asbl</i> <i>Anaïs Col & Marieken Dewitte - WeTechCare</i> <i>Cédric Tchong - Delta 7 asbl (France)</i>
16h00-16h10	Closing remarks
16h10-17h30	Networking reception

REFERENCES

- Akrich, M., Callon, M., & Latour, B. (2006). *Sociologie de la traduction, textes fondateurs*. Paris : Presses de l'École des Mines.
- Asmar, A., Mariën, I., & Van Audenhove, L. (2019). A qualitative analysis of the development of digital autonomy beyond the life course perspective. IDEALiC D.2.2.
- Badouard, R. (2017). *Le désenchantement de l'Internet : désinformation, rumeur et propagande*. Limoges: FYP Editions.
- Boltanski, L., & Thévenot L. (1991). *De la justification: les économies de la grandeur*. Paris : Gallimard.
- Boltanski, L., & Chiapello E. (1999). *Le nouvel esprit du capitalisme*. Paris : Gallimard.
- Bonnetier, C., & Brotcorne, P. (2019). Les services d'intérêt général à l'épreuve de la numérisation : études de cas dans les secteurs de la mobilité, de la santé et de l'administration. IDEALiC Deliverable D.3.4.
- Brotcorne, P., & Valenduc, G. (2009). Les compétences numériques et les inégalités dans les usages d'internet. *Les Cahiers du numérique*, 5(1), 45-68.
- Brotcorne, P., Damhuis, L., Laurent, V., Valenduc, G., & Vendramin, P. (2011). *Diversité et vulnérabilité dans les usages des TIC. La fracture numérique au second degré*. Gent: Academia Press.
- Brotcorne, P. (2016). A theoretical revision of the evolution of the concept of digital inclusion. IDEALiC Deliverable D.1.1.
- Carretero, S., Vuorikari, R., & Punie, Y. (2017). *DigComp 2.1 the Digital Competence Framework for Citizens with Eight Proficiency Levels and Examples of Use*. [Science for Policy report]. Joint Research Centre of European Commission: European Commission.
- Courtois, C., & Verdegem, P. (2016). With a little help from my friends: An analysis of the role of social support in digital inequalities. *New Media and Society*, 18(8), 1508-1527.
- Elder, G. H. (1994). Time, Human Agency, and Social Change: Perspectives on the Life Course. *Social Psychology Quarterly*, 57 (1): 4-15.
- Faure, L., & Schurmans, D. (2019). A qualitative analysis of the development of digital autonomy from within a life course perspective. D.2.3.
- Flichy, P. (2004). L'individualisme connecté entre la technique numérique et la société. *Réseaux*, 124(2), 17-51.
- Gershon, I. (2010). Media ideologies: an introduction. *Journal of Linguistic Anthropology* 20(2), 283–293.
- Gray, J., Gerlitz, C., & Bounegru, L. (2018). Data infrastructure literacy. *Big Data & Society*, 5(2), 1-13.
- Halford, S., & Savage, M. (2010). Reconceptualizing digital social inequality. *Information, Communication and Society*, 13(7), 937-955.
- Helsper, E. (2008). *Digital inclusion: an analysis of social disadvantage and the information society*. Department for Communities and Local Government.

- Helsper, E. (2011). The emergence of a digital underclass: Digital policies in the UK and evidence for inclusion.
- Helsper, E. J. (2012). A corresponding fields model for the links between social and digital exclusion. *Communication theory*, 22(4), 403-426.
- Helsper, E. J., & Eynon, R. (2013). Distinct skill pathways to digital engagement. *European Journal of Communication*, 28(6), 696-713.
- Helsper, E. J., & Reisdorf, B. C. (2017). The emergence of a “digital underclass” in Great Britain and Sweden: Changing reasons for digital exclusion. *New media and society*, 19(8), 1253-1270.
- Helsper, E. J., & Van Deursen, A. J. (2017). Do the rich get digitally richer? Quantity and quality of support for digital engagement. *Information, Communication and Society*, 20(5), 700-714.
- Iordache, C., Baelden, D., & Mariën, I. (2016). Reconsidering digital skills. A theoretical questioning of the skills that define e-inclusion. IDEALiC Deliverable D.1.2.
- Mariën, I., & J.A. Prodnik. (2014). Digital Inclusion and User (Dis)Empowerment: A Critical Perspective. *Info*, 16 (6): 35-47.
- Mariën, I., & Baelden, D. (2015). 8 profielen van digitale ongelijkheden. IDEALiC Deliverable.
- Mayer, K.U. (2009). New Directions in Life Course Research. *Annual Review of Sociology*, 35 (1): 413-433.
- Mariën, I., & Van Damme, S. (2016). Allemaal Digitaal : 7 bouwblokken voor een duurzaam e-inclusiebeleid. Politeia.
- Mariën, I., Heyman, R., Salemink, K., & Van Audenhove, L. (2016). Digital by Default: Consequences, Casualties and Coping Strategies. In: Servaes, J. & Oyedemi, T. (eds.) *Social Inequalities, Media and Communication: Theory and Roots*. Rowman and Littlefield.
- Miliband, D. (2006). *Social exclusion: The next steps forward*, London: ODPM.
- Paugam, S. (1996). *L'Exclusion, l'état des savoirs*. Paris: La Découverte.
- Paugam, S. (1997). L'exclusion : Généalogie d'un paradigme social. *Sociétés & Représentations* 5 (2): 129-155.
- Schurmans, D., Mariën, I., & Van Audenhove, L. (2014). Digitale mediaprofielen van jongeren in maatschappelijk kwetsbare situaties. Etmaal van de Communicatiewetenschappen 2014, 3-4 februari, Wageningen.
- Valenduc, G. (2016). Usages of digital technologies and services in Belgium: what can be learnt from statistics? IDEALiC Deliverable D1.3.
- Van de Velde, C. (2015). *Sociologie des âges de la vie*. Paris: Armand Colin.
- Van Deursen, A. J., & Van Dijk, J. A. (2014). The digital divide shifts to differences in usage. *New media and society*, 16(3), 507-526.
- Van Deursen, A. J., Courtois, C., & van Dijk, J. A. (2014). Internet skills, sources of support, and benefiting from Internet use. *International journal of human-computer interaction*, 30(4), 278-290.

Van Deursen, A. J., & Mossberger, K. (2018). Any Thing for Anyone? A New Digital Divide in Internet-of-Things Skills. *Policy & internet*, 10(2), 122-140.

Van Deursen, A. J., & Helsper, E. J. (2018). Collateral benefits of Internet use: Explaining the diverse outcomes of engaging with the Internet. *New media and society*, 20(7), 2333-2351.

Van Deursen, A. J., & Van Dijk, J. A. (2019). The first-level digital divide shifts from inequalities in physical access to inequalities in material access. *New media and society*, 21(2), 354-375.

Van Dijk, J.A.G.M. (2005). *The deepening divide: Inequality in the information society*. Sage Publications.

Van Dijk, J.A.G.M. (2017). Digital divide: Impact of access. *The international encyclopedia of media effects*, 1-11.

Wauters, C., Mariën, I., & Van Audenhove, L. (2019). E-Inclusiebeleid in België : Een overzicht van de bestaande en mogelijke beleidsplannen, acties en initiatieven. IDEALiC D.4.1.

Wauters, C., Mariën, I., & Van Audenhove, L. (2020). The playing field of Belgian e-inclusion actors : who, what, why, how ? IDEALiC D.4.2.

Witte, J. C., & Mannon, S. E. (2010). *The internet and social inequalities*. Routledge.

Zillien, N., & Hargittai, E. (2009). Digital distinction: Status-specific types of internet usage. *Social Science Quarterly*, 90(2), 274-291.

ANNEXES

- Annex 01 – Publication – Mediawijsheid in Vlaanderen
- Annex 02 – Publication – Developing digital skills and competences
- Annex 03 – Publication – Media literacy policy in Flanders
- Annex 04 – Publication – Developing digital skills and competences (article translated to Serbian)
- Annex 05 – Publication – Digital disempowerment in the digital world
- Annex 06 – Publication – Numérisation des services d'intérêt général
- Annex 07 – Publication – Rethinking access in a polymedia environment
- Annex 08 – Publication – Des recherches en éducation au domaine des technologies éducatives
- Annex 09 – Publication – Capturing digital inequity in teaching and learning
- Annex 10 – Publication – Une numérisation impensée des services d'intérêt général
- Annex 11 – Publication – Eight profiles of digital inequalities for customized inclusion strategies
- Annex 12 – Publication – Social support for digital inclusion
- Annex 13 – Publication – De invloed van sociale ondersteuning op digitale zelfredzaamheid
- Annex 14 – Publication – A situated approach to digital exclusion based on life courses