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Introduction

Mediawijs is the Flemish Knowledge Centre for Digital and Media Literacy. It was founded in 2013 by the Flemish minister for media. It helps citizens in Flanders and Brussels use digital technology and media actively, creatively, critically, and consciously to participate in society. To this end, Mediawijs develops digital and media literacy campaigns and interventions for citizens, children, professionals, and the education sector; supports networks and cooperation in the field of digital and media literacy, and keeps track of developments in digital technology.

In 2013, Mediawijs was set up by a consortium of 14 organisations with expertise in the digital and media literacy field. The consortium consisted of two socio-cultural organisations specialising in digital inclusion: LINC vzw and MAKS vzw; two youth organisations making media with young people, Javi-Jeugdwerknet vzw (now Mediaraven vzw) and REC Radiocentrum vzw (now Chase vzw); one organisation for adult education with low literacy levels, Vlaams Ondersteuningscentrum voor het Volwassenenonderwijs (VOCVO vzw); three universities of applied sciences, Thomas More Hogeschool, de Katholieke Hogeschool Limburg (now UCLL) and de Provinciale Hogeschool Limburg (now PXL); and five university research centres at Vrije Universiteit Brussel, Universiteit Gent, KU Leuven, and Universiteit Antwerpen,[1] all coordinated by the Flemish strategic research institute iMinds vzw (now part of IMEC vzw). The idea behind the cooperation was twofold: (1) to kick-start the knowledge centre, building on existing expertise in the field, and (2) to establish a close tie between interventions in the field and existing research.

Over the years, the collaboration between the research field and Mediawijs has grown considerably, both in terms of people and in terms of departments and research centres involved. Yet, the initial philosophy remains the same. Researchers with different backgrounds are actively involved in the work of Mediawijs when exploring new topics, developing new tools, and planning new interventions. Additionally, Mediawijs is often involved as a possible valorisation partner in research proposals for applied and fundamental research submitted

1 The specific research centres involved were: Studies on Media, Innovation and Technology (SMIT) & ECHO (then Cemeso) at Vrije Universiteit Brussel; Media, Innovation and Contemporary Technologies (MICT) at Universiteit Gent; Centre for IT and IP Law (CiTiP, then ICRI) at KU Leuven and Media and ICT in Organisation and Society (MIOS) at Universiteit Antwerpen.

by Flemish researchers. The result of this active symbiosis is that Mediawijs has a rather unique position in the European field of digital and media literacy interventions, its work being strongly supported by sound research. Many of the chapters in this book are written by partners who have closely collaborated with Mediawijs in the past. Whenever possible, they briefly refer to and reflect on that collaboration.

The team at Mediawijs is proud to be inspired and supported by scientific research. That is why this book provides an overview of digital and media literacy research in Flanders, Belgium. It has a two-pronged approach. On the one hand, it looks back at how the political and technological context has changed over the last 15 years and how the use of digital technologies and media by children, young people, and adults has evolved. On the other hand, it provides insights into current debates in the field of digital and media literacy. What are the needs of different audiences such as children, socio-economically vulnerable groups, people with disabilities, or even influencers? What evolving forms of literacy do we need in our fully digitalised society? What are the key challenges in relation to practices such as sexting, cyberbullying, exploring (fake) news and (dis)information, online gaming, and dating? Flemish researchers contribute to these international debates with excellent research while taking into account the specificities of our small region.

This book has four main parts: Changing Realities, Specific Audiences and Groups, Forms of Literacies, and Themes in Media Literacy. Part 1*,* Changing Realities, maps the context in which digital and media literacy has developed in the past 15 years. Flanders has two longitudinal survey-based measurement instruments that map transformation in digital media use: (1) the imec.digimeter with a focus on the adult population, and (2) Apenstaartjaren with a focus on youth in schools. Chapter 1 focuses on the imec.digimeter and describes how the Flemish population has shifted from traditional media users to cross-media users who actively combine offline and online media across different devices and platforms. This transformation is attributed to technology-related shifts and expanded media supply. Chapter 2 focuses on Apenstaartjaren, a biennial research initiative designed to inform practitioners and educators about digital youth culture. The chapter focuses on the significant changes the study has undergone throughout the years in terms of involved partners, target groups studied, and topics covered. Furthermore, the authors elaborate on the most important research results and key takeaways from more than a decade of Apenstaartjaren. Chapter 3 analyses changing digital and media literacy policy in Flanders between 2009 and 2024, focusing on the policy discourse within different Flemish coalition governments during that period. This chapter frames the context in which Mediawijs has been working since its inception.

Given that digital media and technology permeate all aspects of human life, they touch very diverse groups in society. A one-size-fits-all approach to digital and media literacy is therefore undesirable and outdated, both from a theoretical and an intervention perspective. Part 2*,* Specific Audiences and Groups, focuses on the realities, needs, and approaches in relation to these different audiences. Chapter 4 looks at children's rights with respect to digital and media literacy. It maps scholarly and policy discussions at international, national, regional, and community levels and highlights the Flemish Mediawijs initiatives in this area. In Chapter 5, the focus lies on people with disabilities, an often forgotten and highly diverse group. For almost two decades, several research groups at Flemish universities of applied sciences have been conducting very practical research into the use of ICT by people with disabilities and the support they need. Because it is important to involve the target group in this process, a lot of attention is given to experiential expertise and co-research. After giving an overview of research in Flanders, this chapter focuses specifically on people with a mental disability. Chapter 6 looks at unaccompanied refugee minors in Belgium, a group that often remains invisible for both research and media literacy intervention. With increasing numbers of unaccompanied minors seeking asylum in the EU, the chapter highlights the growing importance of digital media for young refugees and the risks of misinformation they encounter. It highlights the need for tailored digital and media literacy programmes and support from youth workers, educators, and policymakers. Chapter 7 discusses the role of social media influencers in the development of youth. Due to higher exposure and online features that allow real contact, adolescents develop a close relationship with social media influencers. An important question is therefore whether social media influencers can influence adolescents' (mental) health and development in the short and long run.

The field of digital and media literacy has seen an emergence of new forms of literacy. Researchers emphasise the need for media literacy to be flexible and adaptable to the challenges posed by new technologies, new types of media, and new business practices. They argue for a shift away from one-size-fits-all understandings of digital and media literacies. Part 3, Forms of Literacies, maps the contribution of Flemish researchers in establishing new

(sub)forms of media literacy. Chapter 8 outlines the role and importance of advertising literacy in how children process advertising, based on a review of academic literature. The chapter gives an overview of the tools that are developed in Flanders to improve children's advertising literacy and provides insight into their efficacy in increasing advertising resistance. Chapter 9 introduces the topic of news literacy in light of the new information disorder: the complex interplay of disinformation, misinformation, and malinformation at a very large scale enabled by digital distribution technologies. Although news literacy existed before the new information disorder emerged, it has become a top priority in many democratic societies. Chapter 10 investigates the relationship between social media and the mental health of minors. Social media pose potential risks, related to exposure to harmful content, such as hate speech and idealised appearance content, and related to unwanted contacts and interactions, such as cyberbullying and being contacted by strangers. Social media literacy is proposed here as a new form of literacy to mitigate the possible negative effects of social media. Chapter 11 on data literacy shifts the discussion to the datafication of society and the introduction of artificial intelligence. In light of the current changes in this area, this chapter indicates that the need for an all-round data literacy education has never been more urgent. It should explore not only the technical aspects of data literacy – the ability to understand, use, and create data actively and critically – but also the ethical dimensions, the societal implications, and the role of critical thinking. Strongly related to the datafication of individuals' everyday lives is the aspect of privacy and privacy literacy, covered in Chapter 12. The complexity of data collection, which generates increasing knowledge and decisions about individuals, makes it complicated for people to manage their privacy. The chapter pleads for young people to be made more knowledgeable of the value of privacy, their fundamental privacy rights, and how to protect them. The last chapter in Part 3, Chapter 13, proposes an alternative perspective on scientific literacy. Instead of exclusively focusing on the science literacy competences of the public, this chapter turns the attention to the role and responsibility of academics to foster an environment conducive to the advancement of scientific literacy.

The chapters in Part 4, Themes in Media Literacy, focus on potential dangers or negative aspects related to social interactions through digital media and more specifically social media. Chapter 14 focuses on the motives and consequences of sexting but also investigates the dark side of intimate image-sharing. More particularly, it explores different forms of image-based sexual abuse, from the unsolicited dissemination of intimate images to new developments such as deepnudes. Chapter 15 provides an overview of the history and the main findings on cyberbullying by Flemish researchers. Scholars in Flanders have played a worldwide leading role in research on cyberbullying. This chapter illustrates how scholars gradually evolved from investigating the problem (its prevalence, the profiles of bullies, victims, and perpetrators, and its impacts) to researching potential solutions (prevention, detection, and mitigation measures). Chapter 16 explores the effects of the blurring lines between gaming and gambling in teenage lives in a broad consumer protection paradigm. New forms of easily accessible and popular online games incorporate gambling-like elements in the game. The chapter argues there is a growing need for more enhanced digital and media literacy on these topics among children but equally so among parents, educators, and youth counsellors. The last chapter of Part 4, Chapter 17, explores the practice of online dating. Online dating has become a major social phenomenon, prompting a need among scholars to study this topic. Online dating could change fundamental issues like relationship formation and development in human life. The chapter ends with recommendations towards online dating literacy.

With this book, we provide the reader with an overview of the vibrant academic research on media literacy in Flanders. The editors of this book are directly involved in Mediawijs as founders, scientific advisors, or employees: Leo Van Audenhove (Vrije Universiteit Brussel), Michel Walrave (University of Antwerp), Eva Lievens (University of Ghent), Leen d'Haenens (Catholic University of Leuven), Andy Demeulenaere (General coordinator), Hadewijch Vanwynsberghe (Scientific Liaison Officer), and Davy Nijs (Coordinator for the Care and Welfare Sector).

The Editors

PART 1

Changing Realities

1

15 Years of imec.digimeter: The Transformation from Traditional to Cross-Media Users in Flanders

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Floor Denecker
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Over the past two decades, the media and technology landscapes have undergone significant changes. The digital media landscape is continuously evolving, altering how people use and interact with media. Technological innovations have made media omnipresent, with more content produced by more creators, available on more devices, and accessible via a multitude of platforms, anytime and anywhere (Evens et al., 2021).

In this dynamic environment, it is essential for media professionals, industry, and researchers to stay updated on media trends and monitor media adoption and use. To address this need, imec and Ghent University introduced the imec.digimeter, an annual large-scale survey in Flanders. The purpose of the imec.digimeter is threefold: (1) to monitor media adoption; (2) to capture changing media use; and (3) to investigate how people feel about media and technology.

In this chapter, we concentrate on how media use has evolved over a 15-year period, from 2008 to 2023. The key proposition of this chapter is that people in Flanders have transformed from traditional media consumers to cross-media users by navigating the digital media landscape. Based on the data, we provide an overview of how this transformation occurred. Media have become omnipresent, and people (can) seamlessly and constantly switch between different (linear or on-demand) media, including television, radio, print media, websites, applications, and social media. Thus, cross-media users navigate the media landscape by actively combining these different media across different devices and platforms.

1. About the imec.digimeter monitor

With audiences fragmenting across platforms and devices, maintaining a comprehensive understanding of the rapidly evolving digital media landscape has become essential. Since 2009, the imec.digimeter has monitored “Digital trends in Flanders”, focusing on media adoption, use, and attitudes towards media and technology. The publicly available reports provide valuable insights that enable researchers, media professionals, and policymakers to stay informed about the latest developments and identify emerging trends in media

usage and ownership. These reports are downloadable via the imec.digimeter website[2] (for some examples, see Image 1).

Image 1. An overview of multiple imec.digimeter covers: from left to right;

edition 2009, 2013, 2015, and 2022

As argued, media and technology have undergone a considerable evolution over the past 15 years, also challenging how 'media' has been conceptualised. Although the questionnaire has been expanded and modified, some key questions have remained the same, including those on the adoption and use of devices and connections, and the consumption of video, audio, and news. The answers to these questions form the basis of this chapter, with the most recent numbers from imec.digimeter 2023 (De Marez et al., 2024).

Over the years, imec.digimeter has employed various strategies to increase the representativeness of its insights. To ensure data collection from a diverse sample (i.e., stratified sample; see Bryman, 2012, p. 192), a recruitment matrix was developed considering factors such as gender, age, educational level, and province. To avoid non-sampling errors (Stopher, 2012), the questionnaires were offered both online and offline (on paper). In the early years, researchers recruited respondents from various municipalities and public places in Flanders. Later, the imec.digimeter established collaborations with several

2 http://imec.digimeter.be

partners, such as Mobile Vikings[3] and VDAB,[4] to reach difficult-to-access populations.

Since 2020, the generalizability of the data has increased by sending 12,000 invitation letters based on Flemish citizens' national register numbers. Combining panel data with randomized sampling through official registries has made the data a better representation of the Flemish population, including traditionally hard-to-reach demographics (e.g., elderly and poor people).

2. 15 years of imec.digimeter reveals cross-media user

The transformation from traditional to cross-media users, which occurred both in Flanders and other regions, is the result of multiple shifts in the media landscape. In the following sections, we have outlined these changes.

First, we discuss three key enablers for the transformation of cross-media users: the increased adoption of devices, together with increased connectivity and portability of media. Second, we differentiate between four layers of media that demonstrate the evolution from traditional to cross-media users: traditional offline media, online content from legacy media players, native digital media such as streaming services, and the social layer that encompasses social media and personal brands (ref. infra). Finally, we argue that the growth of digital media and technology has had a profound impact on people's attitudes towards media and technology. This led to four 'technology paradoxes', where users experience both positive and negative consequences from its use.

3 Mobile Vikings is a telecommunications service provider based in Belgium, offering mobile and internet services, primarily catering to the Flanders region.

4 VDAB (Vlaamse Dienst voor Arbeidsbemiddeling en Beroepsopleiding) is the public employment service for the Flanders region in Belgium. VDAB offers a range of services, including job search assistance, training programmes, and career guidance.

2.1 Key enablers for the transformation towards cross-media users

First, the number of screens in Flemish households has increased. Figure 1 shows a substantial rise in the adoption of various digital screens, including laptops, smartphones, tablets, flatscreen displays, and smart TVs between 2009 and 2023. Desktop computers are the sole exception, demonstrating a consistent decline over the 15-year observation period.

By 2013, Flemish households had transitioned into what can be characterised as 'multiscreen environments', with approximately 70% of households possessing a minimum of three distinct screen devices. This diversification has facilitated the emergence of new media consumption patterns, including dedicated second screen viewing behaviours and simultaneous engagement with social media platforms during primary content consumption. Among all technologies, smartphones were the quickest to gain popularity: with an adoption rate from 24% in 2010 to 93% in 2023. In just 10 years, smartphones have dramatically transformed internet use.

Over the last 15 years, Flemings have adopted multiple, mobile and connected devices

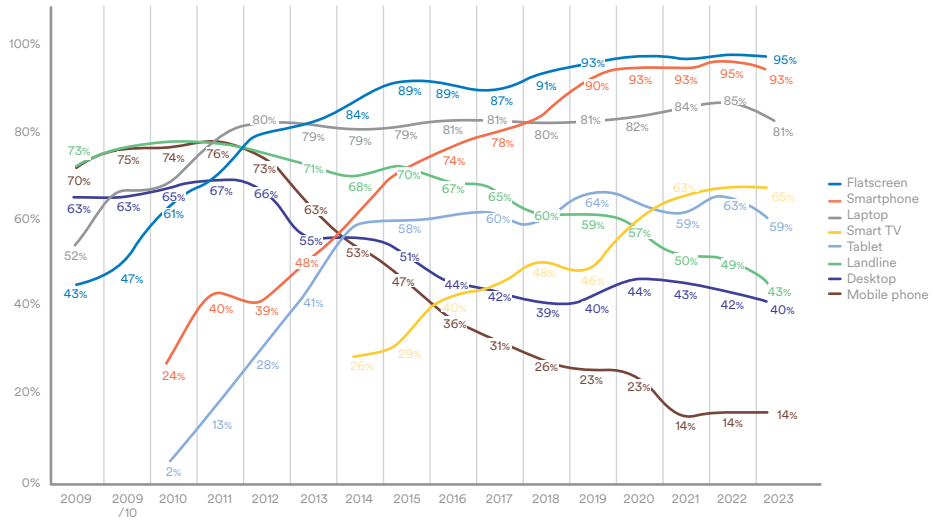

Figure 1. Evolution of adoption of different screens between 2009 and 2023

A second key enabler is increased connectivity in Flemish households. Internet penetration has grown remarkably from 78% in 2009 to nearly universal adoption at 99% in recent years. Furthermore, since 2019, 90% of households have maintained mobile internet connectivity through at least one device. The latest imec.digimeter editions reveal that people living below the poverty line experience two to three times more difficulties connecting to the internet.

Third, there has been a shift towards mobile devices, which has increased the portability of media use. The preference for portable (communication) technologies is reflected in the increasing adoption of laptops and the parallel decline in landline telephone usage. The year 2011 marked a milestone as laptop ownership surpassed desktop computer adoption rates for the first time. Laptops have remained the most popular computers ever since.

Concurrent with expanded internet connectivity, tablet devices also emerged as devices for media use. While tablets transcended their initial niche status in 2011 to become instrumental in digital media exploration, their adoption rates had plateaued by 2015. This same period witnessed accelerated smartphone adoption, establishing them as central components of daily media use.

The transition from traditional mobile phones to smartphones has been driven by expanding functionality and application diversity. Figure 1 highlights 2014 as a pivotal year for Flanders, marking the point at which smartphones overtook mobile phones. By 2015, smartphone adoption had reached 70% of the Flemish population, with users actively engaging in online activities on their mobile devices. This trend continued to accelerate, reaching 90% adoption by 2019, a level that has been maintained throughout subsequent years.

2.2 Four layers of cross-media use

The widespread adoption of multiple screens, ubiquitous internet connectivity, and the proliferation of portable devices have drastically altered media use. Audiences have transformed from traditional to cross-media users. To understand how this transformation occurred, we distinguished four layers of media: (1) the traditional offline layer; (2) the online content of legacy media players; (3) native digital media, such as streaming services; and (4) the social layer, with social media and personal brands (i.e., specific persons such as content

creators, influencers, or journalists). Below, we discuss how media use has changed by elaborating on each of these four layers.

2.2.1 Layer one: traditional offline layer

The pre-2005 media landscape represented the golden age of traditional mass media when television, radio, and print media reached a stable and large audience. Before the digital disruption, radio maintained a powerful presence in daily media consumption, and families archetypically structured their evenings around primetime programming schedules on TV (Courtois et al., 2013). Television viewing was predominantly a shared family experience, with households gathering in living rooms for appointment viewing of popular shows and news broadcasts. Similarly, print media enjoyed frequent readership, and reading newspapers was ingrained in daily routines. While European newspapers, including in Flanders, were already experiencing dwindling circulation and distribution figures since the 1990s (Raeymaeckers et al., 2007), the period 2008–2015 implied a transitional media landscape due to the key enablers listed above.

Despite the emergence of mobile and social media, traditional news media – television, radio, and newspapers – maintained their dominance as preferred information sources in 2009. In 2011, printed newspapers retained their position as the primary news source for the Flemish population even as online news consumption began to increase. During this period, national television viewership began to decline as emerging media platforms gained traction. While 2012 witnessed a growing preference for online platforms, traditional media remained the predominant source of news.

However, the traditional landscape was dramatically disrupted by the digital revolution. Most notably, traditional media outlets, especially newspapers and television networks, have experienced a (further) decline in audience engagement. People are increasingly turning to digital platforms for immediate information access and personalized content delivery. The following sections examine how this ongoing transition has shaped media use. We discuss the new emerging layers of media use and reflect on how these alter the traditional layer of offline legacy media.

2.2.2 Emerging second layer: online content by legacy media

The first layer added to people's traditional media use was the online layer of media players, including websites, apps, and streaming platforms of broadcasters and print media. This shift towards new devices and online platforms has allowed legacy media to reach a wider audience and adapt to their changing preferences. Over the 15-year period from 2008 to 2023, people embraced the online content of legacy media in multiple ways.

2.2.2.1 Smartphones have become the most important device for daily news use

The devices used for daily news provided by the legacy news media have changed. In 2011, tablets emerged as popular devices for visiting news websites and reading digital newspapers. By 2014, computers had established themselves among the top three devices for daily news use following newspapers and radio. This indicates that online news became integral to the majority of Flemish citizens' media consumption habits.

However, the most remarkable transformation occurred in 2015, when smartphones became the primary devices for daily news use. Since then, mobile news consumption has become a daily habit of most people. By 2016, smartphones surpassed computers as the preferred device for accessing news – a trend that continues today. As of 2023, smartphones are the most used devices for daily news, while traditional sources such as radio and TV maintain a strong presence.

2.2.2.2 People use more devices, including smaller screens, to watch online content

The proliferation of smartphones and portable devices has fundamentally changed how Flemings consume online videos from legacy media. In 2012, watching online TV content via computers was still uncommon, with 62% of respondents reporting that they had never engaged in this activity. However, in 2014, the convergence of technological, market, and social factors created optimal conditions for digital media use. This convergence included the maturation of 4G networks, increased streaming service availability (e.g., the introduction of Netflix in Flanders), and competitive data packages. These factors catalysed an increasing number of people to adopt video content consumption across various devices.