Deliverable 2.1: Report on Theoretical Framework: Media Institutions' Activities and Networks

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DELIVERABLE 2.1

Report on Theoretical Framework: Media Institutions' Activities and Networks

Marlen Komorowski – February 2015

Part of Work Package 2:
Media organizations' characteristics and value chain

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Media Clusters Brussels – MCB – is a collaborative and interdisciplinary research project of the Brussels Capital Region involving the three leading universities of Brussels, VUB, ULB and USL-B. The aim is to analyse the many facets of the media industry located in the Brussels Capital Region and explore the development of clusters.

The Projet de Plan Régional de Développement Durable / Ontwerp van Gewestelijk Plan voor Duurzame Ontwikkeling for Brussels (2013), approved by the Brussels Regional Government on 12th December 2013, identifies the cultural and creative industries as one of the four key sectors of the metropolitan economy, and more specifically proposes a media city at Reyers as the first strategic cluster (Pôle Reyers) to develop. However, despite the fact that the Brussels Region is committed to foster the development of the media sector, there is up until now hardly any empirical data available about the structure and dynamics of the media industry in Brussels. This project aims at creating socio-economic value for the media industry in the Brussels Region and beyond by providing decision-makers with the in-depth knowledge they need regarding the media industry in Brussels while accompanying the phases of implementation of the Pôle Reyers. The overarching research question is: How can the structure and dynamics of the media sector in the Brussels metropolis be enhanced to improve its social and economic roles?

MCB is divided in six **Work Packages**. Work Package 1 offers a general overview, definitions and common framework of the project. Work Packages 2 & 3 focus on Brussels media institutions by studying Brussels' media clusters from a macro and socio economical perspective. Work Packages 4 & 5 focus on the media workers within Brussels from a micro perspective and Work Package 6 on the communities the media workers form to create interactions and communities of learning from a meso perspective. These three points of interest, media institutions, media workers and media communities, enable MCB to grasp all dynamics of media clusters in Brussels.

More information on the Media Clusters Brussels project is available on the Internet (www.mediaclusters.brussels).

The project is financed by Innoviris under the Anticipate programme (Prospective Research – Anticipate – 66 – 2014/2018).

Scope of this report

This report is dedicated to **Work Package 2** – Media organisations' characteristics and value chain. Work Package 2 is committed to the analysis of the media institutions[1] integrated in the media clusters of Brussels and focuses on a socio-economical analysis of the actors from a macro view. The Deliverable was built on the findings of Deliverable 1.1a and 1.1.b. The output of this Deliverable shall guide the mapping of the media institutions through investigating the characteristics of media institutions. Based on these findings, an extensive list of media institutions will be extracted from available data sources and mapped, which will be presented in Deliverable 2.2. Additionally, the findings of delineating media institutions will be also used in other media institution-related Deliverable.

Deliverables that are built on the findings here are:

Deliverable 2.2

Deliverable 2.3

Deliverable 3.1

Deliverable 3.2

[1] We have chosen to use the term „media institutions", which deviates from the wording chosen in the Project Proposal "media organisations" (see title of Work Package). "Media institutions" as term, integrates more dimensions of firms and organisations to be included into the analysis as has been elaborated in Deliverable 1.1b.

Key findings

Why do we need to study media institutions?

Because institutions and their networks have been broadly recognized as drivers (on a location level) of:

1. Economic development;
2. Competitiveness and innovativeness in the globalized world;
3. Social, political and environmental development;
4. Political and governmental mechanisms.

Additionally, there is no common agreement on definitional approaches towards media institutions, as terminology differs widely and the approach is very complex and has changed in recent years due to globalization and ICT trends.

How can media institutions be defined?

In order to delineate media institutions for media cluster research, the concept of "institutional thickness" has been adapted. The definition of institutions within this concept allows the integration of entities that go well beyond media firms and that can be described through (a) institutional and (b) media dimensions:

(1a) the size of the institution, (2a) the market position of the institution, (3a) the legal form and (4a) the customer segment, (5b) the content domain of the institution, (6b) the diffusion model, (7b) the activities along the value network, (8b) the sector, and (9b) the mediated end product produced.

These **media dimensions** are the building blocks to identify and delineate media institutions.

Additionally, the activities of media institutions can be delineated through the **NACE-BEL classification system** that gives first indications. NACE codes have been selected and grouped into the four media sectors (Print, AV, New Media and Advertising) and the following categories:

1. Core entities: actors that directly contribute to the production and publishing of mediated content consumed/used by the final consumer.
    a. Publishing
    b. Production
    c. Publishing / Production (Publ./Prod.) (if not distinguishable)
2. Supporting entities: actors that either indirectly contribute to the production and publishing of the mediated content, or actors who play a supporting role in the process.
    a. Distribution
    b. Post-production (not only as post-production of AV content)
    c. Pre-production
    d. Retail

3. Facilitators and peripheral entities: supporting actors that are not directly involved in the process, in the narrow sense, but do actually play relevant roles, such as for valorisation, support, professionalization, etc.
    a. Membership organisations (Membership)
    b. Education
    c. Government
    d. Business
    e. Research
4. External entities from other sectors: actors that belong to another sector in a strict sense, but which have a direct or indirect effect on the process, and are included for the sake of completeness.
    a. Hardware (HW)
    b. Software (HW)
    c. Hardware / Software (HW/SW)
    d. Other creative and cultural activities (OTHERS)

How can the connection between media institutions be described?

The importance of institutions within media clusters resolves around the network and interrelations between them. One way to find these interrelations between media institutions and their positions within these structures is the **concept of "value networks"**.

The NACE classification and the sectors of the media industry, print, AV, new media and advertising have been used as basis to develop value networks of the sub-sectors.

The sub-sectors and their value networks visualize the close relationships between certain institutions while future research can use this approach to identify interrelations and connections between media institutions in the future.

How do we study media institutions?

The here-developed approaches of (1) media dimensions, (2) NACE classification and (3) value networks will be integrated in a heterogeneous and quantitative approach to analyse media institutions within media clusters in Brussels in the following steps:

1. The NACE classification will be used to establish a database of media institutions within Brussels and beyond.
2. The data quality will be improved by using the media dimensions to close data gaps.
3. The data will be used for an economical impact analysis (using also the value network approach) and the identification of media clusters in Brussels.

This will give first insights on the media industry and Brussels and delineate possible media clusters in Brussels for future research.

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Introduction

In international literature, it is broadly acknowledged that media is **frequently characterized by the agglomeration of firms concentrated in space**. Media institutions, within this project identified as first entity (see Deliverable 1.1b), depict the macro-level view of the media cluster and explain findings typically from an economical point of view. The media institutions or organizations within a media cluster as theme is the richest group of theoretical and empirical work in cluster literature and has made some of the most important contribution to public policy debates around cluster development (Yeung, 2000).

For instance, there is an extensive amount of literature that uses the idea of agglomeration and concentration of media firms within locations on different scales to identify clusters (cf. Boix, Hervás-Oliver, & Miguel-Molina, 2014; Chapain, Cooke, De Propris, MacNeill, & Mateos-Garcia, 2010; De-Miguel-Molina, Hervas-Oliver, Boix, & De-Miguel-Molina, 2012). Also a fast amount of literature focuses on the influence clustering can have on firms in terms of innovativeness (cf. Baptista & Swann, 1998; Beaudry & Breschi, 2003; Carbonara, 2004) and knowledge creation (cf. Eng, 2004; Malmberg & Power, 2005). Other examples of approaches adopted in literature are the analysis of the network of media firms within a location (Krätke, 2002), the global network of media firms (Krätke, 2003), production systems of agglomerated media firms (Scott, 2002), firms' strategies in clusters (Bathelt & Gräf, 2006) or cluster policy focussing on firms' support (Barkley & Henry, 2001). This **amount of research depicted on the firms** within a cluster shows the significance this entity has.

Still, the concept of clustering, which got popularized by Michael Porter in the 1990s, has been widely adapted in many studies, where he suggested that "clusters are geographic concentrations of **interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions** (e.g. universities, standards agencies, trade associations) in a particular field that compete but also cooperate" (2000, p.16). This shows that the view on media clusters have gone beyond the firm level of analysis. One of the key elements in this expansion, which Martin (2000) calls "institutional turn'', is the "recognition that the form and evolution of the economic landscape cannot be fully understood without giving due attention to the various social institutions on which economic activity depends and through which it is shaped".

We also take the **socio-economical**[2] **approach towards the first level entity**, media institutions, into consideration (vide infra). The economic process of a

[2] The socio-economical analysis of media institutions within a cluster is further underpinned with literature and a theoretical approach in future Deliverable 3.1.

cluster is also a socio-cultural process and institutions are central to the socio-cultural construction of the economy (Martin, 2000). Not only firms are involved in this process but also a fast variety of different organisations like for instance financial institutions, chambers of commerce and trade associations and higher educational institutions like universities, training organisations but also local authorities, and marketing and business support agencies. Additionally, there is a strong embeddedness of these institutions with the firms within a cluster. This definition of institutions within a cluster is often called "institutional thickness"[3] (Bassett, Griffiths, & Smith, 2002). This raises at least two issues.

(1) The first issue is the question of **what kind of institutions** are to be included in a cluster analysis. There are still definitional issues and the delineation of the characteristics of the media institutions is not clear.
(2) The second issue is the question of **the relationships between the institutions**. If there are relationships the embeddedness of institutions into the cluster dynamics can be depicted.

This leads us to the overarching research question of this Deliverable: **What are the media institutions to be considered as part of a media cluster and how are they connected?**

The **objectives of this mapping** are twofold: on the one hand, the characteristics of media institutions within so-called dimensions are investigated in order to map each sector of the media industry objectively, on the other, the value network is established to serve as a demarcation of the sector and identification of the components that are included in the economic impact analysis. Therefore, the findings of this Deliverable will determine the economic analysis and delineation of the media institutions as study object for the coming Deliverable 2.3 and Work Package 3.

The main goal is to identify relevant institutions and their clusters. In order to reach that goal **the delineation of media institutions was performed in two phases**: First, relevant literature on delineating media institutions in clusters has been investigated (Part 1). In a second step, the key dimensions to profile a media institution have been identified and described. Each media sector has been grouped to activity classifications that are necessary to extract valuable data from public resources. Further grouping of the media institutions' activities and dimensions was done in order to present them using a value network (Part 2). In a last step prospects of future research is given (Part 3) and the findings will be concluded.

[3] See future Deliverable 3.1 for further investigations on the concept of "industrial thickness". See also Racolf (1998) for more details on analysing "institutional thickness".

Part 1: Media institutions in a geographic context

The WHY of media institutions in places

The **role of institutions in local economic life** has broadly been recognized (Henry & Pinch, 2001). It was claimed in literature, that the development of the economic landscape within regions couldn't be fully understood without giving attention to the various institutions. Martin (2000) for instance claims that economic activities are shaped and depend on institutions. Also institutions have already been brought to the level of clusters. Developing strong local institutional relations, as described by Amin and Thrift (1995) as "institutional thickness", has been acknowledged to encourage and develop economic regeneration at the local level (Racolf, 1998). Amin and Thrift (1995, p.107) describe further that "local institutional thickness may be a necessary condition for local economic regeneration but less questioned has been whether this is a challenge which cities are in a position to meet". Also, even though institutions are unlikely to be the sole cause of geographically economic development, "they enable, constrain, and refract" economic development. To institutionalists therefore, institutions can create powerful nodes and economic growth while providing the basis for economic networks, where these strong local institutional relations may act as a prelude to regional economic success (Racolf, 1998).

The institutional focus is additionally, often embedded in considerations of the increasingly competitive global economy. Authors have argued that regions are more powerful **through strong institutional nodes in being competitive on a global scale** (Amin & Thrift, 1995). Institutional relations are seen as crucial in facilitating the (local) collectivisation of economic activity to prosper in the global economy (Racolf, 1998). Additionally, Amin and Thrift (1995, p.13) have translated these relations into "intelligent regions", which depict centres of interaction and innovation. These "poles of excellence" offer a "well-consolidated network of contacts and knowledge structures", which highlights the importance of institutions for innovativeness.

Still, institutions have also been recognized on a local level as central to the socio-cultural construction of the economy. This claim goes well beyond economical structures, as political scientists are increasingly emphasizing that **institutional organization influences not only economic but also political, social outcomes of regions** (Steinmo, Thelen, & Longstreth, 1992). Firms and other institutions have become increasingly established as part of the context of

wider social relations, political-economic processes and environmental change within a region (Yeung, 2000).

Additionally, new institutional models of regional economic regulation and governance show the **importance of approaching institutions as policy mechanism**. The formation of a dense integrated network of collaborative social, economic, political, and civic institutions by governments has been highlighted as important (Amin & Thrift, 1995). Boyer and Rogers Hollingsworth (1997) see the examples of applied policy mechanisms as marking a shift from a Fordist institutional structure to a much more complex structure of institutions where local institutions have an increasingly formative role in shaping economic activity. Also, Regini (2007) describes a shift from macroeconomic regulation to a more decentralized regime of micro-socio-institutional regulation, which he calls "local institutionalism".

The overview of approaches towards institutions in different disciplines shows the significance of institutions in many different fields. Not only are institutions understood to support economic development, but also social, political and environmental development. The here most often applied concept is "institutional thickness", which seems to deliver a suitable theoretical approach also for this project. Additionally, the institutional view on local structures shows the importance of localized institutional networks in a competitive globalized world while governments have already often adapted this view as a mechanism for regional development. Table 1 gives and overview of the benefits perceived in academia from institutions in a region. This shows the importance to study media institutions as part of the media cluster in Brussels.

Table 1 – Media institutions as drivers for development.

Institutions and their networks have been broadly recognized as drivers (on a location level) of:
1. Economic development 2. Competitiveness and innovativeness in the globalized world 3. Social, political and environmental development 4. Political and governmental mechanisms

Issues in approaching media institutions

"Institutions" have become a widespread approach in economic geography but also other disciplines investigate these entities within clusters. **The terminology and the approaches however are very diversified**, including concepts such as "associated institutions',' "institutional thickness", "networks", "associational

economy" or "production systems" (Martin, 2000). Nonetheless, most literature found consistently that the presence of institutions brings benefits for many different aspects. However, there is no common definitional approach to institutions in media clusters.

Additionally, there is an **increasing complexity towards approaching institutions**, as concepts like "institutional spaces" and local "institutional nestedness" and "local policy heterodoxy" are emerging (Martin, 2000). Traditionally, academics have tended to define their firms and institutions in purely economic terms and exclude social and cultural factors from their analyses. But it is fast becoming recognized that the purely economic analysis of institutions is a contrived construct. Especially, multidisciplinarity opens new forms of approaching institutions and the embeddedness of institutions in other fields then the economy has already been broadly recognized.

Furthermore, there is a corpus of work aimed at understanding regional economics in the face of so-called transformations (Henry & Pinch, 2001). Forces of **globalization and impact of ICT developments for instance drive institutional change** (Martin, 2000). Globalization poses real challenges for institutions at all spatial scales. It is seen as a "de-localizing" force, disconnecting and dis-embedding economic activities from their local frameworks, whilst increasing uncertainties associated with global competition. And alongside the so-called "information age" signals the end of industrialism as known, and of the various institutions and traditions that historically have formed part of industrial society. Globalization may be shifting the importance of economic spaces with their industrial activities and accompanying institutions, but it is simultaneously creating opportunities for new institutional forms and structures (Martin, 2000). Globalization, technology and in particular the growing diffusion and importance of the Internet is especially the major driver of change in the media sectors.

The change in institutional models and the variety of terminologies and approaches existing shows the clear need to study media institutions as part of media clusters more in detail (see Table 2 for an overview). However, it is first necessary to find a new approach that delineates media institutions more clearly within this project. Delineation means to depict the many dimensions of characteristics within media clusters and have a first look at their relatedness within networks. However, to do that, we have developed requirements for the delineation. The delineation should…

- Consider existing approaches to streamline understanding;
- Cover all relevant institutions of a media cluster;
- Be appropriate for activities of media institutions within value networks;
- Consider the developed definition of media (see Deliverable 1.1a);
- Be flexible enough to overcome limitations in future research;
- Be straight forward to be applicable for data accessibility;

Table 2 – The problems in delineating media institutions.

There is no common agreement on definitional approaches towards media institutions. There are several reasons:

- Terminology differs widely;
- The institutional approach became more complex shifting from pure economical analysis models;
- Traditional institutional models change in the eye of globalization and the rise of ICT technologies;
- Especially, media institutions are impacted by these developments;

This shows that the delineation of media institutions need to fulfil several requirements.

Part 2: From dimensions towards activities within value networks

The dimensions of media institutions

Any institutional analysis must begin by identifying nodes of potential action and examining their characteristics. In order to delineate media institutions and actions, it is necessary to identify the different dimensions to look at. This can be achieved through reviewing existing approaches. It should still be noted that identifying institutional dimensions is a matter for professional judgement.[4] Also, the above-described issues and requirements need to be taken into account.

This research project focuses on analysing the media clusters of Brussels and has identified the future media city at Pôle Reyers in Brussels as study object. The Brussels Region wants to not only establish this media city to strengthen the media industry in Brussels but also wants to strengthen the whole media sector of Brussels economically but also socially. Therefore, we have decided to **adapt the concept of "institutional thickness"** to gather data on media institutions within Brussels and beyond to support this goal as this approach highlights the importance of the institutions within an area as economic but also social factor.

[4] Internal workshops were dedicated to discuss and decide upon the suitable dimensions of media institutions for this research project. The workshops were in the beginning of 2015 and all related project partners participated.

We have already developed a definitional approach to media in previous work [5] and depicted **media as "activities directly or indirectly supporting the process from production to consumption of mediated content as the core that can be differentiated into entities of four key sectors, (1) print, (2) audio-visual, (3) new media and (4) advertising"**. This delineation already depicts several dimensions of media institutions: First, it is built around a description of the core product "mediated content". Second, it describes different activities, as "directly or indirectly supporting the process from production to consumption". Third, it identified core sectors as "print", "AV, "new media" and "advertising".

Therefore, three dimensions have been already integrated in the definition of media and can be transferred to media institutions: product, activities and sectors. Wyszomirski (2004) for instance found four dimensions to define creative industries: (1) the product/service supplied, (2) the producing organization, (3) the central production process and (4) the occupational/ workforce groups. However, there are **many different other approaches to describe media institutions**, media clusters, and the media industry and the suiting ones need to be identified. Furthermore, it is not yet clear, what kind of activities account for media institutions, what kind of products are mediated products and what do the four sectors cover for media institutions. However, cluster approaches have already given indications of what to look at:

Media institutions are often **defined through their sector and by means of diffusion**. A medium itself is a 'channel of communication', where people send and receive information. Picard (2008) distinguishes sectors of media clusters and defines them as: audio-visual clusters, new media clusters, creative industry clusters and print media clusters. The DCMS (2001) classifies, as creative industries sectors, namely Advertising, Film and Video, Music, Performing Arts, Publishing, Software and Computer Services, Research and Development (Architecture, Graphic Design, Fashion), and Telecommunications. Other authors rather stress the economic benefits of the de-integration of the value-added chains within media clusters providing flexible and specialized activities (cf. Sabel & Piore, 1984). These scholars focus on the production linkages between firms in a cluster.

Another approach towards media is **the media products produced**. For instance, the European Commission describes media and content industries by their end product including "books, broadcasting, cinema, music, newspaper, and video games" (Simon & Bogdanowicz, 2012). In literature, Picard (2008) defines media clusters through a list of products by saying media clusters are a

[5] See Deliverable 1.1a for more details on how to define media and Deliverable 1.1b for more details on defining media clusters. The findings of Deliverable 1.1a and 1.1b have been used here and additional content and literature was added.

"specialized form of agglomeration designed to produce mediated content, such as motion pictures, television programs/videos, broadcasts, audio recordings, books, newspapers, magazines, games, photography and designs, websites, and mobile content."

Another approach is the **focus on the activities of media institutions or the content domain for end users**. In France for instance, the "cultural industries" have been defined as a set of economic activities that combine the functions of "conception, creation and production of culture…" (Département des études de la prospective et des statistiques, 2006). Also the OECD (2011) depicts the dimension of activities and says "these industries are engaged in the production, publishing and/or the distribution of content". Additionally, the OECD (2011) focuses on the content domain and end user and describes media industries as follows: "The production (goods and services) of a candidate industry must primarily be intended to inform, educate and/or entertain humans through mass communication media".

Another important approach to institutions within media clusters is the **characteristics of the institutions themselves**. Wyszomirski (2004, p.27) asserts that most initiatives for developing creative industry focus on ''a list of which organizations in what fields and industries are to be included and then gather information that maps key dimensions such as size, distribution, revenues, export activities, employment, and production figures''. Many authors stressed the importance of clusters that are built around large media institutions like public broadcasters and major commercial channels, where small media firms exist around to provide services towards these major players (Picard, 2009).

We see that there are many different important dimensions to look at within media institutions of a cluster. The institutions of a media cluster can be presented as various actors involved in a sector, and make deliberate abstractions from the diversity of products, services and experiences that are created and/or produced. We have summarized these different dimensions of media institution into two overarching dimensions: the institutional and media dimensions. Within the institutional dimensions there are dimensions of (1) the size of the institution, (2) the market position of the institution, (3) the legal form and (4) the customer segment. Within the media dimensions, we have found the dimension of (5) the content domain of the institution, (6) the diffusion model, (7) the activities along the value network, (8) the sector, and (9) the mediated end product produced (see Table 3).

Table 3 – The many dimensions of media institutions.

INSTITUTIONAL DIMENSIONS				**MEDIA DIMENSIONS**				
INSTITUTION SIZE, Based on	**POSITION**	**LEGAL BODY**	**CUSTOMER**	**CONTENT DOMAIN**	**DIFFUSION**	**ACTIVITIES,** along the value network	**SECTOR**	**MEDIATED END-PRODUCT**
		SA / NV		News			PRINT	Book
Definition	**Scale of operation**	ASBL / VZW (NPO)	**Target group**	Entertainment	**Media channel**	**CORE**		Newspaper
One-person (self-employed)	Local	NGO	Professional group	Education	Broadcasted	Publishing		Magazine (Journals / Periodicals)
Micro	Regional	SPRL / BVBA	Youth	Cultural	Printed	Creating		Directories (e.g. telephone directories)
Small	National	SPRLU / EBVBA	Elderly	Promotional	Online	Production		Mailing lists
Medium	International	SPRL-S / S-BVBA	Etc.	Information	Screened			Other printed content (e.g. classifieds)
Large		IVZB / AISBL		Etc.	Billboards		AV	Movie
		De Facto Association			Etc.	**SUPPORT**		TV content
Other scales	**Language**	SCS / GCV	**Customer group**		**Diffusion model**	Distribution		Recorded music
Assets	French	SNC / VOF	End-user		Analogue cable	Retail		Radio content
Employees	Dutch		B2B		Digital cable	Pre-production		Podcast
Reach	German				Analogue terrestrial	Post-production		Other AV content (e.g. spot, clips)
Turnover	English				Digital terrestrial		NEW MEDIA	Video game
Etc.	Other				Telephone cable			Mobile app
					Satellite	**FACILITATOR**		Website- / Portal- / Blog content
	Market Position				Mobile	Business / Consulting		Social media content
	Competitors				Internet	Education		Search engine
	Market Position				Printed Press	Governmental		Other online content (exclusive software)
					Etc.	Research / Monitoring	ADVERTISING	Outdoor graphic ad
								Direct mail ad
								Electronic display ad
						EXTERNAL SUPPORT		Direct email ad
						Hardware		Other advertising content
						Software		
						Etc.		
						ASSOCIATED		
						Creative industries		
						Etc.		

There are **several functionalities of the media institution dimensions**. First, the dimensions of media institutions are a tool to determine the basic components a media institution should have in order to be integrated within the cluster analysis of this project. The list of dimensions and their integrated parameters makes clear what institutions could play a role within a media cluster as has been determined in Deliverable 1.1a. A media cluster was defined as "*an agglomeration that is involved in the process of production to consumption of mediated content, that co-locates for mutual advantages.*" Second, the dimensions should be used as a checklist in case it is not sure if a certain institution is to be included or not. Through the convergence of the media sector and the emergence of new institutions and activities within the media sector it is often not clear what is a media institution and what not. And third, the dimensions can be used to group and categorize media institutions within a cluster. This is not only important to identify clusters but also to find its dynamics.

Some of the **dimensions are inclusive others are exclusive**. Especially the institutional dimensions are very inclusive. The list of parameters makes clear that institutions of all kinds of size, position, and legal body can be part of a cluster. However, based on the definition of media having mediated content at its core, only mediated content has been integrated and distributed along the predefined four core sectors. The activities have been based on the circling model developed in Deliverable 1.1a.

However, the **dimensions are to be seen flexible**. First, media institutions are not perfectly fitting to single parameters of the dimensions. Several media institutions could be involved in the production of several end products (for example broadcasters producing radio and television programs), or media institutions have several target groups or have acquired vertical integration covering several activities along the value network. Second, the dimensions are not claiming to be exhaustive. The attempt was to cover all possible parameters to make it usable as a tool or checklist (vide supra). Still, within the analysis of a media cluster additional dimensions could evolve or additional parameters within the dimensions. And third, the dimensions are to be seen as preliminary. The dimensions only cover economical dimensions suiting for an economical analysis of a cluster. As we have adapted the approach of "institutional thickness" additional dimensions should be added to cover the whole network and their socio-economical influence on a cluster.[6]

[6] Work Package 3 will further elaborate and analyse the socio-economical dimensions of media institutions.

The dimensions additionally are the building blocks to further identify media institutions that should be included within this research project through supplementary delineating activities for official statistical use.

Table 4 – The dimensions of media institutions.

In order to delineate media institutions for media cluster research, the concept of "institutional thickness" has been adapted. The definition of institutions within this concept allows the integration of entities that go well beyond media firms and that can be described through (a) institutional and (b) media dimensions: (1a) the size of the institution, (2a) the market position of the institution, (3a) the legal form and (4a) the customer segment, (5b) the content domain of the institution, (6b) the diffusion model, (7b) the activities along the value network, (8b) the sector, and (9b) the mediated end product produced. These dimensions are the building blocks to identify and delineate media institutions.

The activities of media institutions

Traditionally, **industrial sectors are defined using statistical nomenclatures**. These divide activities of the economy into sectors and then differentiate these into more specific activities. The Statistical classification of economic activities in the European Community, abbreviated as NACE, is the classification used in the European Union.[7] Belgium uses the NACE-BEL nomenclature, which has been in its second revision since 2008 and derives from the NACE codes. In order to extract data on media institutions and economically analyse media clusters, we therefore used this nomenclature to further delineate the media institutions to be integrated. To work precisely, we used the NACE-BEL codes at the four-digit level, which gives a great level of detail for economic activities.

The process of defining the NACE-BEL codes of media institutions relevant for media clusters has been two fold. First, existing delineations of public organisations and scholars have been investigated and strengths and weaknesses analysed. In order to make a comparison possible all approaches have been adapted to four-digit NACE-BEL level and the newest NACE-BEL

[7] Various versions have been developed since 1970. NACE is a classification providing the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics developed within the European statistical system (ESS). Other classification systems exists, that are similar to the NACE and are applied in other countries, like the SIC in the UK and the NAICS in the US.

classification from 2008. On the second step, the delineation of the media dimensions, as developed above, has been used to include or exclude codes used by other institutions and additional codes to include have been screened.

In case, the **delineation of codes** was not possible beyond doubt, official definitions were looked up and samples of institutions that are identified by the NACE code in question investigated to enable a definite inclusion or exclusion. However, in order to make the delineation as inclusive as possible different levels of NACE codes and groupings have been made:

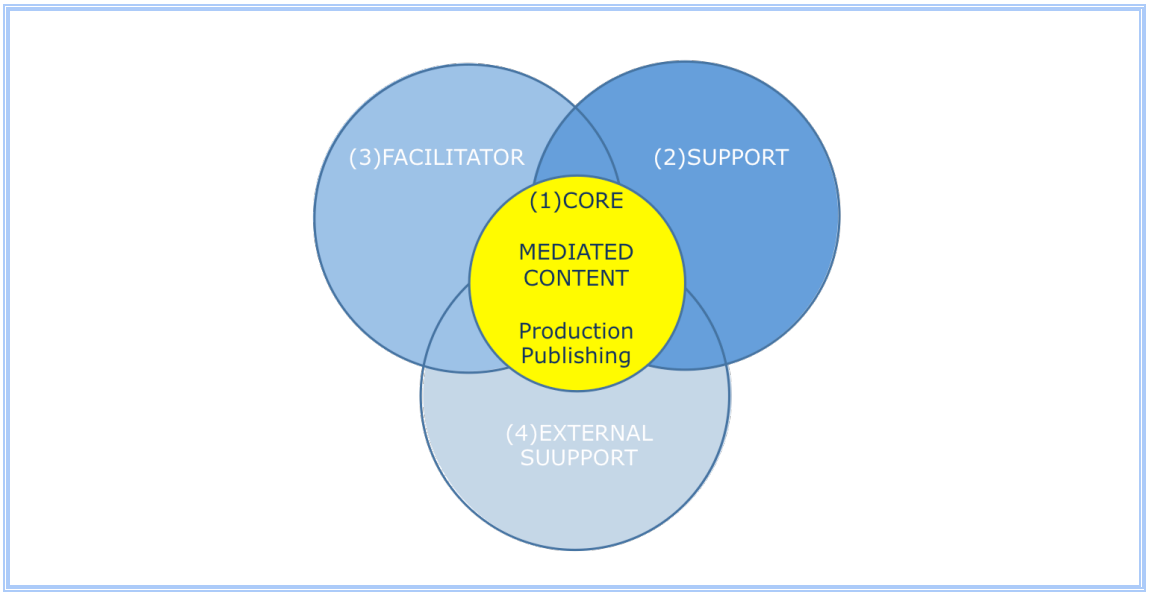
First, the NACE codes have been **grouped into the circles or categories of activities** in media that have been identified in Deliverable 1.1. These categories have been complemented with additional sub-categories that were identified through screening of included codes. The sub-categories are not claiming to show the whole value network as they only show possible groupings through the NACE code. However, it is necessary to understand all activities in more detail (this will be elaborated in more detail in the following section).

Second, the chosen NACE codes have been **grouped into the four core sectors** of media identified in Deliverable 1.1a. These core sectors are (1) PRINT, (2) AV (audio-visual), (3) NEW MEDIA and (4) ADVERTISING. The convergence of the media sector makes this distinction really hard. Additionally, the possibilities of the NACE system are still very limited (see below for more information). However, in case of doubt, NACE codes were mostly classified as "comprehensive" (in Tables as COMP) because of the convergence trends taking place in the sector. If possible, NACE codes were also classified within a sector, in case traditionally, these activities would take place only within this sector (for example are the broadcasters distributing content online but are considered as part of the AV sector). The identified categories and sub-categories that were depicted from the circle model (Figure 1) are as follows:

1. Core entities: actors that directly contribute to the production and publishing of mediated content consumed/used by the final consumer.
    a. Publishing
    b. Production
    c. Publishing / Production (Publ./Prod.) (if not distinguishable)
2. Supporting entities: actors that either indirectly contribute to the production and publishing of the mediated content, or actors who play a supporting role in the process.
    a. Distribution
    b. Post-production (not only as post-production of AV content)
    c. Pre-production
    d. Retail
3. Facilitators and peripheral entities: supporting actors that are not directly involved in the process, in the narrow sense, but do actually play relevant roles, such as for valorisation, support, professionalization, etc.
    a. Membership organisations (Membership)
    b. Education
    c. Government
    d. Business

   e. Research
4. External entities from other sectors: actors that belong to another sector in a strict sense, but which have a direct or indirect effect on the process, and are included for the sake of completeness.
   a. Hardware (HW)
   b. Software (HW)
   c. Hardware / Software (HW/SW)
   d. Other creative and cultural activities (OTHERS)

Figure 1 - The circle model to define media (see Deliverable 1.1a).



Besides the groupings into the activity categories, sub-categories and four media sectors, it was possible to delineate NACE codes through a comprehensive review of **codes adopted by other organisations and scholars**. At an international level, the approach of the OECD towards the information economy and media and content industries (OECD, 2011), at an European level Boix et al. (2014) and the approach towards creative and cultural industries (CCI) of the European Cluster Observatory (Power & Nielsén, 2011) and the delineation of the cultural economy of the KEA (KEA European Affairs, 2006), as well as on a national level, UK's creative industries classification by the DCSM (DCMS, 2001) and Brussels' IdeaConsult report on media clusters (Idea Consult, Verheyen, & Pierre-Alain, 2012) were investigated.[8] The chosen NACE codes are based on the following findings:

First, the review showed that several **NACE codes could be unerringly identified as core and supporting activities** (see Table 5 for included core and supporting codes). These codes can be acknowledged through different

[8] The results within an exhaustive table can be found in Appendix 2.

means: (a) They have been included by all or most organisations investigated (cf. J58, J59, J60); (b) they have in their description a "mediated content" product included, that have been identified within the dimensions (vide infra), like book, newspaper or television programme (cf. C18.1.1, G47.6.1); (c) they have in their description the identified activity categories or sub-categories included (vide infra), like publishing, production or distribution (cf. J58.1.9, J59.2.0); and (d) can be clearly differentiated into the four sectors, print, AV, new media and advertising. The core and support NACE codes are the primary focus of analysis and can be categorized as purely media related, which means that all institutions identified through the code are media institutions.

Table 5 – Core and supporting activities within NACE identified.

NACE Number	NACE-Classification	ACTIVITY CATEGORY	SUB-CATEGORY	SECTOR	OECD	EU Cluster Observatory	DCSM	Boix et al., 2013	IdeaConsult	KEA
C18.1.1	Printing of newspapers	SUPPORT	Postproduction	PRINT		X		X	X	X
C18.1.3	Pre-press /-media services	SUPPORT	Preproduction	PRINT		X		X	X	X
C18.1.4	Binding and related services	SUPPORT	Postproduction	PRINT		X		X	X	X
C18.2.0	Reproduction of recorded media	SUPPORT	Postproduction	AV		X		X	X	X
G47.6.1	Retail sale of books in specialised stores	SUPPORT	Retail	PRINT		X				
G47.6.2	Retail sale of newspapers in specialised stores	SUPPORT	Retail	PRINT		X				X
G47.6.3	Retail sale of music and video recordings in stores	SUPPORT	Retail	AV		X				X
J58.1.1	Book publishing	CORE	Publishing	PRINT		X	X	X	X	X
J58.1.2	Publishing of directories and mailing lists	CORE	Publishing	PRINT	X	(x)	X	X	X	X
J58.1.3	Publishing of newspapers	CORE	Publishing	PRINT	X	X	X	X	X	X
J58.1.4	Publishing of journals	CORE	Publishing	PRINT	X	X	X	X	X	X
J58.1.9	Other publishing activities	CORE	Publishing	PRINT	X	X	X	X	X	X
J58.2.1	Publishing of computer games	CORE	Publishing	NEW	X	X	X	X	X	X
J59.1.1	Motion picture, video, TV programme production	CORE	Production	AV	X	X	X		X	X
J59.1.2	Motion pic, video, TV programme post-production	SUPPORT	Postproduction	AV	X	X	X		X	X
J59.1.3	Motion pic, video and TV programme distribution	SUPPORT	Distribution	AV	X	X	X		X	X
J59.1.4	Motion picture projection activities	SUPPORT	Distribution	AV	X	X	X			X
J59.2.0	Sound recording and music publishing activities	CORE	Publishing	AV	X	X	X		X	X
J60.1.0	Radio broadcasting	CORE	Publ./Prod.	AV	X	X	X	X	X	X
J60.2.0	Television programming and broadcasting	CORE	Publ./Prod.	AV	X	X	X	X	X	X
J63.1.1	Data processing, hosting and related activities	SUPPORT	Distribution	NEW	X	X			X	
J63.1.2	Web portals	SUPPORT	Distribution	NEW	X	X			X	
J63.9.1	News agency activities	CORE	Production	PRINT	X	X			X	X
M73.1.1	Advertising agencies	CORE	Production	ADVER		X	X	X	X	X
M73.1.2	Media representation	CORE	Production	ADVER		X	X	X	X	X
N77.2.2	Renting of video tapes/disks	SUPPORT	Retail	AV		X				X

Second, the review revealed that the investigated **delineations do not account for additional institutions** that have a facilitating character. However, we have decided to depict media institutions through the approach of "institutional

thickness" (see Table 6 for included facilitating codes). Amin and Thrift (1995) describe that a strong institutional presence is depicted of a plethora of diverse institutions, which is one of the key elements[9] for "institutional thickness"[10]. These institutions are for instance employment organizations (cf. N78), chambers of commerce, trade associations and other business associations (cf. S94), local authorities (cf. O84), financial and legal institutions (cf. M69) and research and innovation centres (cf. M72, P85). These institutions are integrated as facilitators and have been identified through several NACE codes. However, the codes cannot be purely identified as media related. Therefore, not all institutions that are categorized by these codes are to be included as media institutions. Within the analysis it means, that indications through institutions added through these codes need to consider that while further investigations should bring more clarity to what institutions are relevant for media clusters and which ones are not.

Table 6 - Facilitating activities within NACE identified.

NACE Number	NACE-Classification	SUB-CATEGORY	OECD	EU Cluster Observator	DCSM	Boix et al., 2013	IdeaConsult	KEA
M69.1.0	Legal activities	Business		(x)				
M69.2.0	Accounting, bookkeeping and auditing activities	Business						
M70.2.2	Business and other management consultancy	Business		(x)				
M71.1.2	Engineering activities and related technical	Research		(x)				
M72.1.9	Other R&D on natural sciences / engineering	Research						
M72.2.0	R&D on social sciences and humanities	Research						
M73.2.0	Market research and public opinion polling	Research						
M74.9.0	Other professional, scientific, technical activities	Research					X	
N77.4.0	Leasing of intellectual property, except copyright	Business						
N78.1.0	Activities of employment placement agencies	Business		(x)				
N78.2.0	Temporary employment agency activities	Business						
N78.3.0	Other human resources provision	Business						
N82.3.0	Organisation of conventions and trade shows	Business		(x)			X	
N82.9.9	Other business support service activities n.e.c.	Business		(x)				X
O84.1.1	General public administration activities	Government						
O84.1.2	Regulation of activities in cultural services, etc.	Government						
O84.1.3	Regulation of operation of businesses, etc.	Government						
P85.4.1	Post-secondary non-tertiary education	Education						
P85.4.2	Tertiary education	Education						
P85.5.2	Cultural education	Education		X	X			
P85.5.9	Other education n.e.c.	Education		(x)				
P85.6.0	Educational support activities	Education						
S94.1.1	Activities of business / employer membership org.	Membership						
S94.1.2	Activities of professional membership org.	Membership						
S94.2.0	Activities of trade unions	Membership						
S94.9.9	Activities of other membership organisations	Membership						

Third, the review displayed that the investigated organisations have **different approaches to whether to include ICT and cultural relevant NACE codes**.

[9] Amin and Thrift (1995) define "institutional thickness" through four key constitutive elements: (1) a strong institutional presence; (2) a high level of interaction amongst these institutions; (3) well-defined structures of domination; and (4) inclusiveness and collective mobilization (a common sense of purpose around a widely-held agenda).

[10] See future Deliverable 3.1 for elaborations on the concept of "institutional thickness".

As mediated content is the core, we have indicated that the codes in question do not belong to media institutions. However, these activities could play a supportive role and have therefore been integrated as external activities (see Table 7).[11] The codes included are related to manufacturing of ICT products (cf. C26), telecom and other ICT related activities (cf. J62). No organization chose retail (cf. G46). Cultural activities rank from design (cf. M74) to performing arts (cf. R90). These codes can hardly be related to media. However, especially the ICT and telecom sector are important for media. Within the analysis it means, that indications added through these codes need to consider this separation while investigations should bring more clarity to whether external sectors are relevant or not.

Table 7 - External activities within NACE identified.

NACE Number	NACE-Classification	SUB-CATEGORY	OECD	EU Cluster Observatory	DCSM	Boix et al., 2013	IdeaConsult	KEA
C18.1.2	Other printing	OTHERS		X		X	X	X
C26.1.1	Manufacture of electronic components	HW	X					
C26.1.2	Manufacture of loaded electronic boards	HW	X					
C26.2.0	Manufacture of computers/peripheral equipment	HW	X					
C26.3.0	Manufacture of communication equipment	HW	X	(x)			X	
C26.4.0	Manufacture of consumer electronics	HW	X	(x)				
C26.7.0	Manufacture of optical and photo equipment	HW		(x)			X	
C26.8.0	Manufacture of magnetic and optical media	HW	X	X			X	
C27.3.2	Manufacture of other electronic and electric wires	HW		(x)				
C28.2.9	Manufacture of other general-purpose machinery	HW		(x)				
C28.9.9	Manufacture of other special-purpose machinery	HW		(x)				
C32.2.0	Manufacture of musical instruments	HW		X				
G46.4.3	Wholesale of electrical household appliances	HW					X	
G46.5.1	Wholesale of computers, equipment and software	HW/SW	X					
G46.5.2	Wholesale of electronic and telecom equipment	HW	X					
G47.4.1	Retail sale of computers and software in stores	HW/SW						
G47.4.2	Retail sale of telecom equipment in stores	HW						
G47.4.3	Retail sale of AV equipment in specialised stores	HW						
G47.5.4	Retail sale of electrical household appliances	HW						
J58.2.9	Other software publishing	SW	X	X	X	X	X	X
J61.1.0	Wired telecommunications activities	HW	X	(x)			X	
J61.2.0	Wireless telecommunications activities	HW	X	(x)			X	
J61.3.0	Satellite telecommunications activities	HW	X				X	
J61.9.0	Other telecommunications activities	HW	X	(x)			X	
J62.0.1	Computer programming activities	SW	X	X	X		X	
J62.0.2	Computer consultancy activities	SW	X	X	X		X	
J62.0.3	Computer facilities management activities	SW		X			X	
J62.0.9	Other IT and computer service activities	SW	X	X			X	
J63.9.9	Other information service activities n.e.c.	SW	X				X	
M70.2.1	Public relations and communication activities	OTHERS		(x)	X			
M74.1.0	Specialised design activities	OTHERS		X	X	X		
M74.2.0	Photographic activities	OTHERS		X	X	X	X	X
M74.3.0	Translation and interpretation activities	OTHERS		X	X		X	
R90.0.1	Performing arts	OTHERS		X	X	X	X	X
R90.0.2	Support activities to performing arts	OTHERS		X	X	X	X	X
R90.0.3	Artistic creation	OTHERS		X	X	X	X	X
R90.0.4	Operation of arts facilities	OTHERS		X	X	X	X	X
R91.0.1	Library and archives activities	OTHERS		X		X		X
R91.0.2	Museums activities	OTHERS		X		X		X
S95.1.1	Repair of computers and peripheral equipment	HW	X					
S95.1.2	Repair of communication equipment	HW	X					

[11] The codes can be compared to the "associated" sectors identified in Deliverable 1.1a.

Fourth, the review of the delineations of other organisations and scholars showed that the scope of the analysis influences the chosen NACE codes. This led to the **exclusion of several NACE codes** that have been integrated in other studies (see Table 8 for excluded NACE codes). For instance, is the fashion industry (cf. C13, C14, G46, G47) seen as part of the cultural economy by the investigations of the KEA (2006). Additionally, the KEA (2006) and Boix et al. (2014) have chosen to include other cultural activities that relate to life entertainment (cf. N77, R91, R93). Both are not identifiable as mediated content. The European Cluster Observatory (Power & Nielsén, 2011) has chosen a very broad approach[12] to CCI and included codes like "manufacture of dyes and pigments". These kind of too broad codes have been excluded as well (cf. C20, C22). Especially, typical cultural and creative products and activities are often not part of the media industry when identified as "mediated content" industry. This led to the exclusion of activities related to fashion, architecture and life entertainment. This decision is also supported by the investigated organisations, as mostly only one organisation included these codes. Additionally, many codes were excluded in the first place, as there is no relation to media at all (e.g. A-Agriculture, forestry and fishing).

Table 8 – Excluded NACE codes.

NACE Number	NACE-Classification	OECD	EU Cluster Observatory	DCSM	Boix et al., 2013	IdeaConsult	KEA
C13.1.0	Preparation and spinning of textile fibres						X
C13.2.0	Weaving of textiles						X
C13.3.0	Finishing of textiles						X
C13.9.1	Manufacture of knitted and crocheted fabrics						X
C13.9.4	Manufacture of cordage, rope, twine and netting						X
C13.9.5	Manufacture of non-wovens						X
C14.1.1	Manufacture of leather clothes						X
C14.1.2	Manufacture of workwear						X
C14.1.3	Manufacture of other outerwear						X
C14.1.4	Manufacture of underwear						X
C14.1.9	Manufacture of other wearing apparel						X
C14.2.0	Manufacture of articles of fur						X
C14.3.1	Manufacture of knitted and crocheted hosiery						X
C14.3.9	Manufacture of other knitted /crocheted apparel						X
C20.1.2	Manufacture of dyes and pigments		(x)				
C22.2.9	Manufacture of other plastic products		(x)				
G46.4.1	Wholesale of textiles						X
G46.4.2	Wholesale of clothing and footwear						X
G46.4.9	Wholesale of other household goods					X	
G47.7.1	Retail sale of clothing in specialised stores						X
G47.7.2	Retail sale of footwear and leather in stores						X
G47.9.1	Retail sale via mail order houses or via Internet		(x)				X
G47.9.9	Other retail sale not in stores, stalls or markets						X
M71.1.1	Architectural activities		X	X			
N77.2.1	Renting / leasing of recreational and sports goods						X
N77.2.9	Renting / leasing of personal / household goods						X
R91.0.4	Botanical, zoological and nature reserves activities				X		X
R93.2.1	Activities of amusement parks and theme parks				X		
R93.2.9	Other amusement and recreation activities				X		

[12] The European Cluster Observatory indicated several codes through "cursive" differentiating between core and related activities. These codes are here shown as "(x)".

The delineation of NACE codes to include in order to find media institutions that are relevant for media clusters has shown many obstacles (vide infra). However, the NACE codes will enable the data collection from an economical point of view to analyse media clusters in Brussels and further delineates what media institutions are. This macro approach is exogenous. However, the here chosen NACE codes are not to be seen as fixed activities. Here excluded NACE codes could still in later research be found as relevant. Nevertheless, as has been shown it is not yet sure, which media institutions to include or exclude and therefore endogenous research will in the future overcome this problem. Additionally, the delineation of media institutions through NACE codes allows further considerations that go beyond the description of activities towards a network of interactions between institutions.

Table 9 – The activities of media institutions.

The activities of media institutions can be delineated through the NACE-BEL classification system that gives first indications. NACE codes have been selected and grouped (see Appendix for a list) into the four media sectors (Print, AV, New Media and Advertising) and the following categories:

5. Core entities: actors that directly contribute to the production and publishing of mediated content consumed/used by the final consumer.
    a. Publishing
    b. Production
    c. Publishing / Production (Publ./Prod.) (if not distinguishable)
6. Supporting entities: actors that either indirectly contribute to the production and publishing of the mediated content, or actors who play a supporting role in the process.
    a. Distribution
    b. Post-production (not only as post-production of AV content)
    c. Pre-production
    d. Retail
7. Facilitators and peripheral entities: supporting actors that are not directly involved in the process, in the narrow sense, but do actually play relevant roles, such as for valorisation, support, professionalization, etc.
    a. Membership organisations (Membership)
    b. Education
    c. Government
    d. Business
    e. Research
8. External entities from other sectors: actors that belong to another sector in a strict sense, but which have a direct or indirect effect on the process, and are included for the sake of completeness.
    a. Hardware (HW)
    b. Software (HW)
    c. Hardware / Software (HW/SW)
    d. Other creative and cultural activities (OTHERS)

The value networks of media institutions

The **importance of institutions within media clusters resolves around the network and interrelations between them**. These involve the form of contacts, the flows of information between institutions and the significance of social, informal but especially business networks between institutions (Racolf, 1998). Networks incorporate notions of flows and contacts between present institutions (Racolf, 1998). A network can lead to trust, relations, and mutual cooperation and thus to institutional thickness[13]. These concepts are essential for the dynamics between media institutions that are related through media clusters. Institutions have different activities and positions in these structures and therefore influence also the media cluster (Racolf, 1998).

One way to find these interrelations between media institutions and their positions within these structures is the concept of "value networks". This section of the Deliverable therefore investigates the various value networks within the media industry. Value networks are able to show that there exists co-presence within a network of different institutions. The nature of the co-presence within a value network however, needs further analysis. The co-presence of institutions within a value network might not indicate any real connections but it enables to see possibilities of closer contact, collaboration, information flows, etc., which are essential for institutional thickness and therefore cluster dynamics (Martin, 2000).

Additionally, **value networks enable to identify not only co-presence in a network but also to identify potentials of high level of interaction**. This indicates the facilitation of mutual and reflexive networking, cooperation, and exchange, thereby the production of a significant degree of mutual advantages amongst the ensemble within a media cluster (Martin, 2000) can be presumed. Furthermore, being part of one value network for institutions can indicate the notion of inclusiveness and collective mobilization, that is, the emergence of a common sense of purpose around a widely held agenda, or project, of regional or local socioeconomic development (Martin, 2000).

However, it is necessary to keep in mind that the findings built on value networks is a preliminary step to explain and visualize meaningful connections while actual connections need to be investigated through further research methods.[14] Still, the analysis of value networks based on literature study as here established outlines the most important institutions and their role in the creation of mediated content

[13] See future Deliverable 3.1 for more insights to institutional thickness in the context of institutions within media clusters.

[14] Work Package 3 will look into these analysis methods and investigate the notions of connectedness between the media institutions in clusters more deeply.

in the context to other institutions. In order to depict the various value networks of the media industry the following methodological steps[15] have been taken and considerations integrated:

First, **the goal of each value network is to depict various institutions involved in the process of media production**. These institutions are objectively described concerning their role in the value network and in the production of mediated content. This concerns an objective and somewhat static view of each sector, a so-called sector image. The value networks are supposed to give an overview of the most important tasks of each institution in the sector and their connection, with the size of the blocks of each component having no significance (cf. Guitte, Schramme, Vandenbempt, & Jacobs, 2011).

Second, **each value network is based on literature study.** Within the literature study, several value networks as examples were chosen for delineating our own depiction of the value network. The entities to include and exclude have been based on professional judgement that was built within the context of the projects scope (cf. Deliverable 1.1a) and the project's goals to create knowledge about media clusters within the Brussels context.

Third, for reasons of clarity, the **value networks are presented as a semi-linear process** that in reality must be interpreted as ecologies. Within them, interactions, which are normally not linear, take place between the various actors. Therefore it was decided not to utilize arrows for the visualization, which is normally done in network visualisations. Several reasons led to this decision: since interactions determine various flows (like money), the meaning of an arrow can be interpreted confusingly. Moreover, the various value network institutions are increasingly linked together making the use of arrows to complex. Finally, value networks are working on a high level of abstraction, so that it is not feasible to make statements about flows if not further research can support that (cf. Guitte et al., 2011).

Fourth, it is necessary to **emphasise that all developed value networks are strongly intertwined with other sectors**. Each sub-sector presented can converge with other sub-sectors within the media industry and also outside. This convergence could not be displayed as the value networks are supposed to visualize meaningful connections in a simplified way. The inclusion of relations outside of the sub-sector would make the networks to complex. Additionally, interdependence between all value networks and also between the value networks and the broader socio-economical context can be presumed and should be kept in mind, when using them (cf. Guitte et al., 2011). This also applies for

[15] The methodological approach was adapted for this Deliverable from the delineations made in the Research Report of Flanders DC (2011) „Creative Industries in Flanders" (Guitte, Schramme, Vandenbempt, & Jacobs, 2011).

the different actors integrated. With horizontal and vertical integration taking place in the media industry, here displayed separated actors might be one or several.

Fifth, the **NACE-BEL codes have been chosen as basis for the here-developed value networks.** For each value network, the corresponding four-digit codes, as delineated above, were looked up in the NACE-BEL nomenclature and were assigned to each component in the value network. One reason is that this will enable the analysis of data in future research. Additionally, the dimensions and the statistical nomenclature of media institutions as depicted above already indicates the various activities within the media industry and allows the grouping of media institutions into sectors. The value networks further differentiate the grouping by showing in more detail the various connections and relations besides the grouping into sectors of audio-visual, print, new media and advertising activities.

Sixth, the use of **NACE-BEL codes also incorporates limitations** for the value network analysis. For a large number of activities or institutions encountered of the value networks, there is no corresponding code available or the code is not distinctive enough. This is indicated in the value networks' visualisations. However, this issue can be ignored for preliminary investigations but should be kept in mind when interpreting analysis based on the here-developed value networks.

Seventh and last, **the value networks are developed taking the 4 media sectors (print, AV, new media and advertising) as basis and further differentiating them into product-based sectors, sub-sectors**. These sub-sectors have been found based on the above-developed media dimensions of media institutions. Table 10 gives on overview of the sub-sectors as depicted from the dimensions and the sources used for inspiration of value networks. Figures 2-6 display the various value networks. Only the most often-analysed value networks could be developed here as not enough input from literature on all sub-sectors could be gathered to visualize informative value networks. However, the developed value networks sample all sub-sectors of the four sectors, print, audio-visual, new media and advertising, which can be used exemplary also for the other sub-sectors.

Table 10 – The sub-sectors (value networks marked in blue) and their sources (cf. Table 3).

Sector	(Product-based) Sub-sector	Value network	Sources
PRINT	Book	Figure 2	Bibnet, 2011; Guitte et al., 2011; Simon & De Prato, 2012
	Newspaper	Similar to Book	
	Magazine (Journals / Periodicals)	Similar to Book	
	Directories (e.g. telephone directories)	n.a.	
	Mailing lists	n.a.	
	Other printed content (e.g. classifieds)	n.a.	
AV	Movie	Figure 3	De Vinck & Lindmark, 2012; Guitte et al., 2011; Kumar, Zwirbulis, Narko, & Ersöz, 2012; Leurdijk & Nieuwenhuis, 2012
	TV content	Similar to Movie	
	Recorded music	Figure 4	
	Radio content	Similar to TV	
	Podcast	n.a.	
	Other AV content (e.g. spot, clips)	n.a.	
NEW MEDIA	Video game	Figure 5	Alves & Roque, Guitte et al., 2011; 2005; Johns, 2006
	Mobile app	n.a.	
	Website- / Portal- / Blog content	n.a.	
	Social media content	n.a.	
	Search engine	n.a.	
	Other online content (exclusive software)	n.a.	
ADVERTISING	"Combined"	Figure 6	Guitte et al., 2011; Salo, 2004
	Outdoor graphic ad	n.a.	
	Direct mail ad	n.a.	
	Electronic display ad	n.a.	
	Direct email ad	n.a.	
	Other advertising content	n.a.	

Figure 2 – The value network of the book sub-sector.

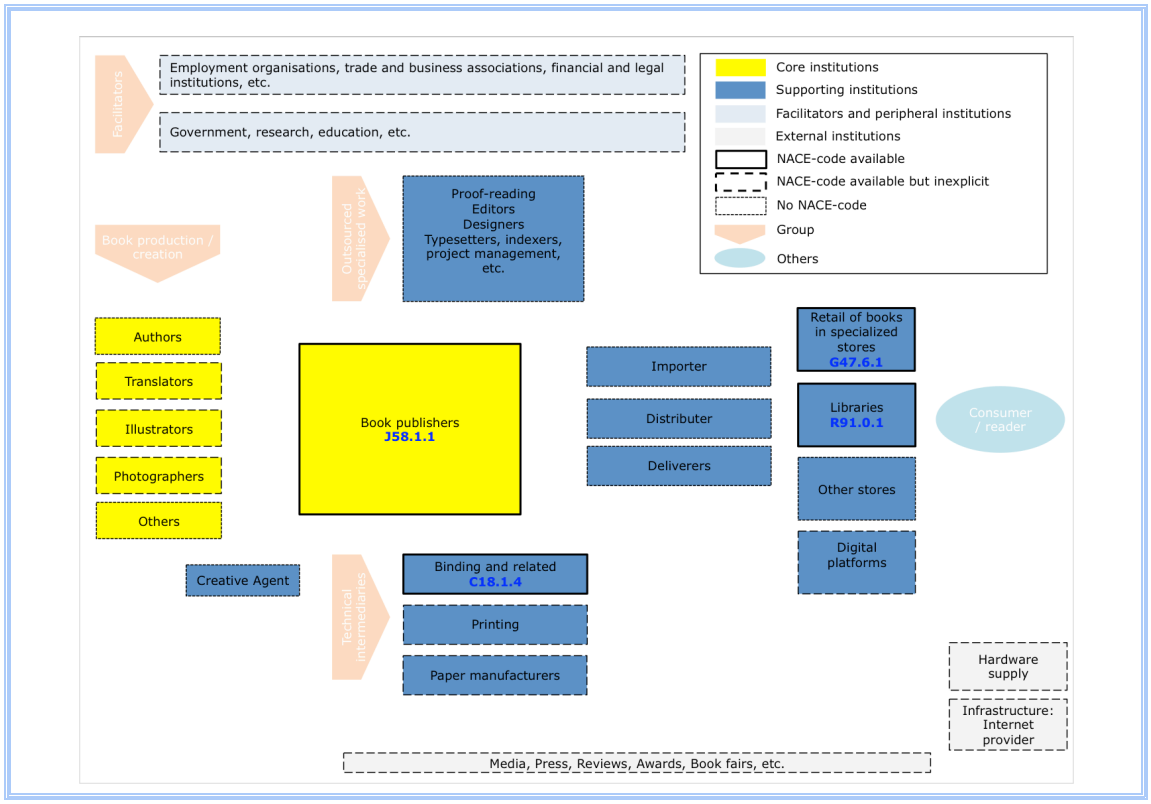


Figure 3 – The value network of the movie sub-sector.

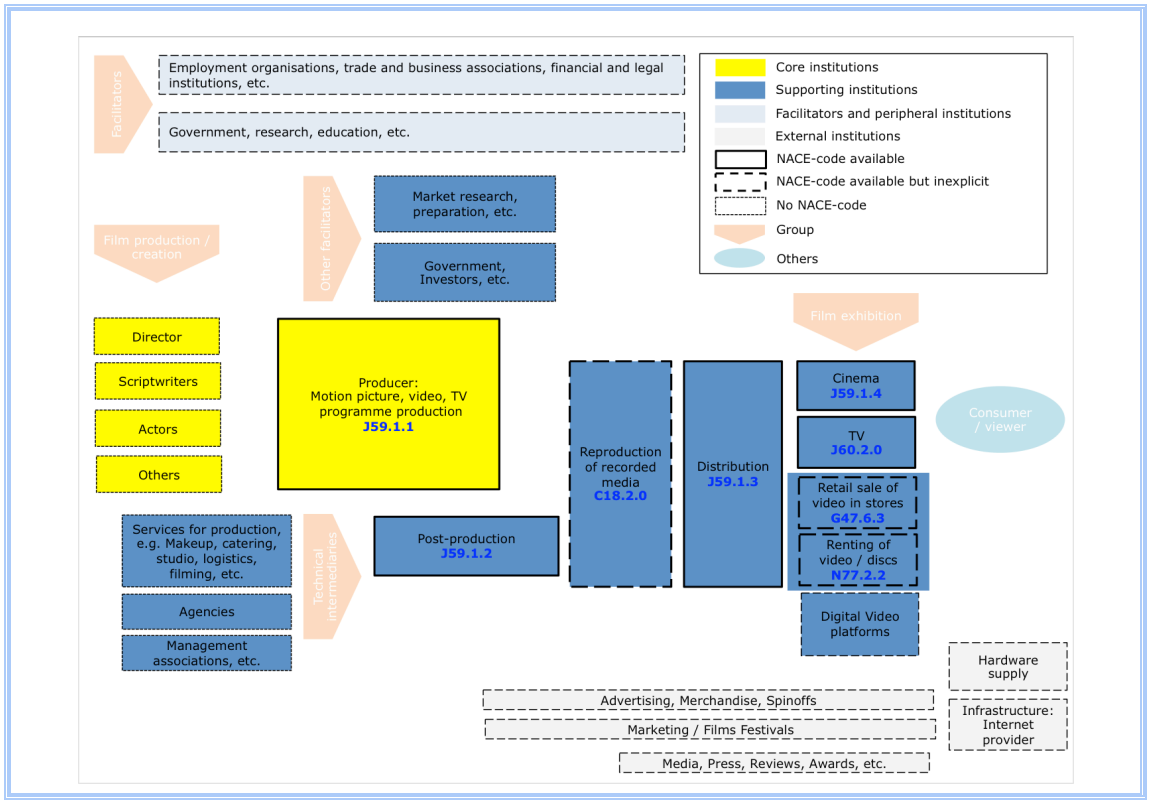


Figure 4 – The value network of the recorded music sub-sector.

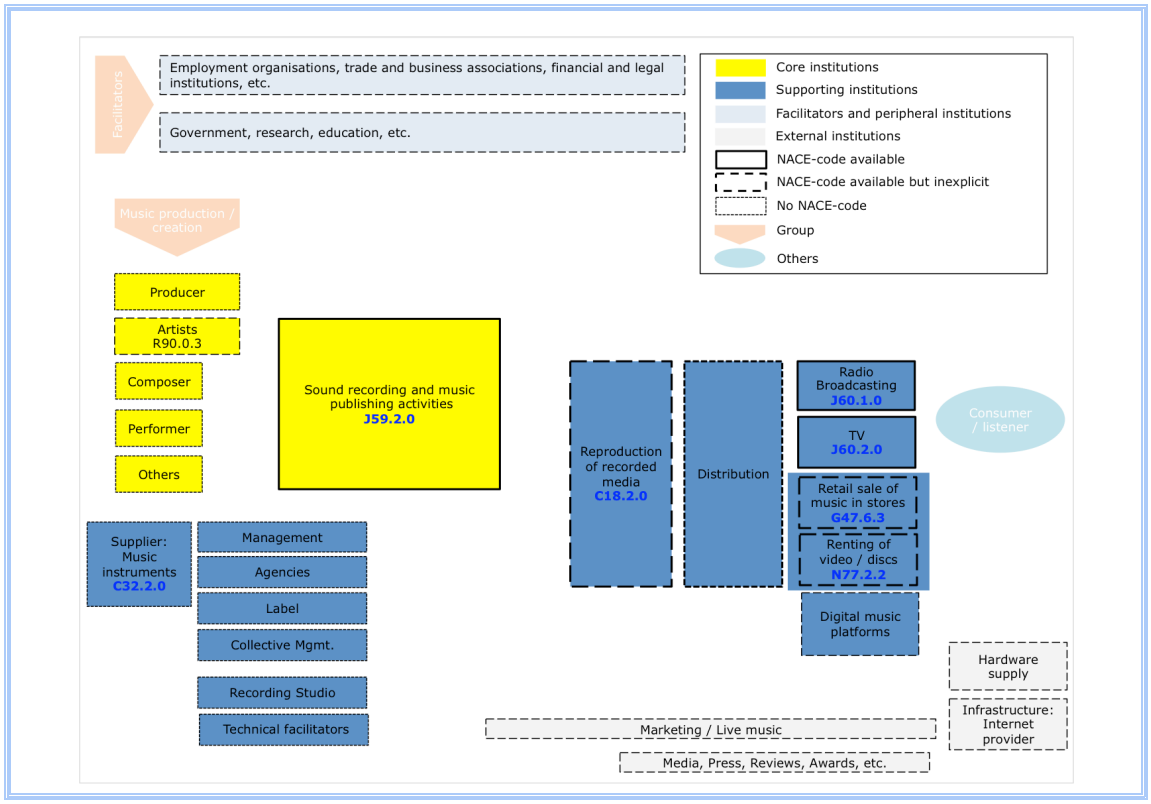


Figure 5 – The value network of the video game sub-sector.

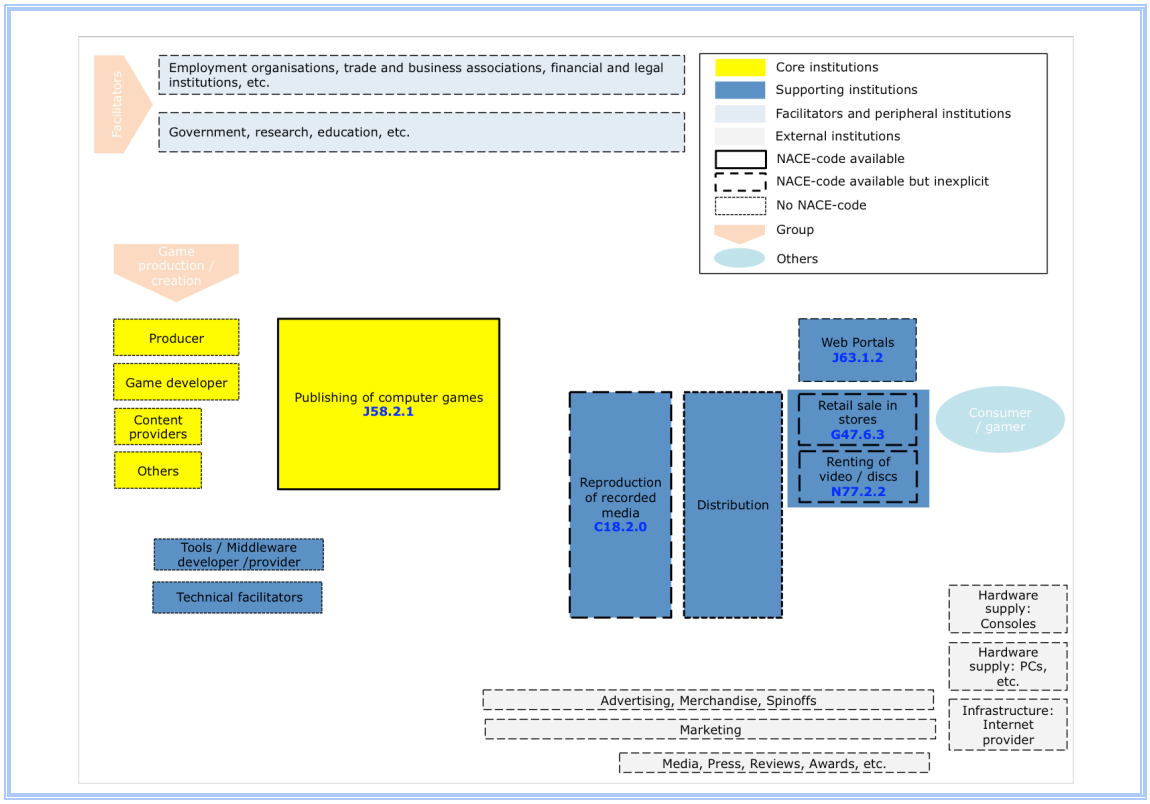
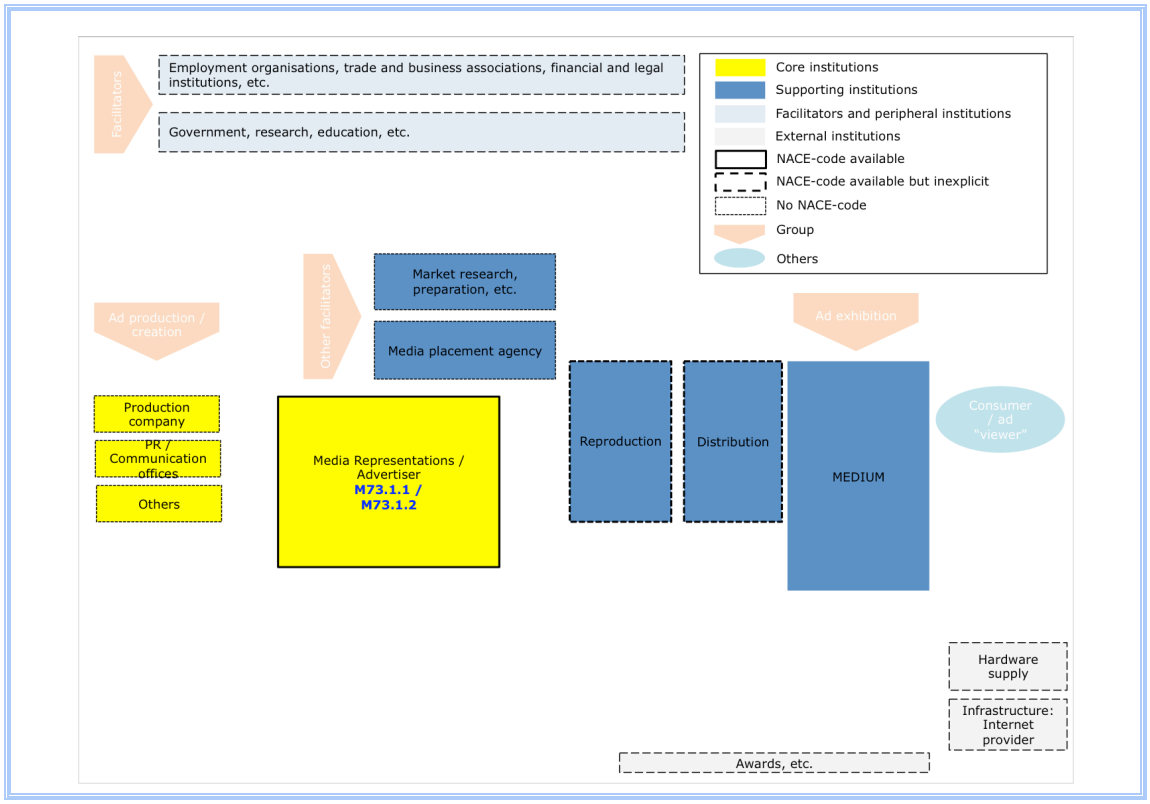


Figure 6 – The value network of the advertising sector.



The above-displayed value networks can give several insights into media institutions' relations on the one hand and on the other have implications for future research. First, **the value networks developed show possible relationships between media institutions.** As explained above, the value networks display a co-presence between institutions within certain sub-sectors that indicate stronger relationships as sectors while also the potential of high interactions can be indicated. For instance, within the book sub-sector, the activities of book publishers and shops that sell the books can be identified (vide supra).

Second, **the value networks developed have implications for the NACE classification use and its limitations**. The value networks show, that for most sub-sectors clear core institutions can be identified, like the advertiser (M73.1.1) for the advertising sub-sector, the publisher of computer games (J.58.2.1) for the video game sub-sector and the music publisher (J59.2.0) for the music sub-sector. However, many institutions active in a sub-sector have no clear distinguishable NACE code. For instance, the reproducers of recorded media (C18.2.0), whose NACE code indicates an activity for the movie sub-sector and the music sub-sector, can therefore not clearly be distinguished. Additionally,

many institutions' activities have no NACE code at all.[16] Therefore, when using the value networks developed here the grouping of NACE codes will not be able to give insights into the full sub-sectors.

In conclusion, the development of value networks help to understand the connections between media institutions more clearly. Media institutions can be grouped in more detail than the sectors of print, audio-visual, new media and advertising. The sub-sectors show clear connections and indicate possible interactions between media institutions and this enables the research of media clusters and the connections of institutions within them to give more insights. However, there are many limitations when using this approach, which need to be taken into account when interpreting data based on this approach. Additional research is needed to on the one hand develop the value networks in more detail and support them with evidence-based research that exceeds the here chosen literature-based approach. And on the other hand, research is needed to overcome the mentioned limitations and get a better understanding of the relations of media institutions within clusters.

Table 11 – The use of value networks in media cluster research.

The importance of institutions within media clusters resolves around the network and interrelations between them. One way to find these interrelations between media institutions and their positions within these structures is the concept of "value networks". The NACE classification and the sectors of the media industry, print, AV, new media and advertising have been used as basis to develop value networks of the sub-sectors. The sub-sectors and their value networks visualize the close relationships between certain institutions while future research can use this approach to identify interrelations and connections between media institutions in the future.

[16] More insights into the use of NACE codes and their limitations are given in the future Deliverables 1.1c and 2.3.

Part 3: Conclusion and Future Research

There are more than 500.000 active enterprises in Belgium out of which more than 100.000 enterprises are located in Brussels (cf. Deliverable 2.2). Additionally, Brussels is host of a wide range of public and private institutions because of the politically and strategically important location. Out of this vast amount of institutions a significant part is built out of media institutions and these media institutions are relevant interconnected actors in Brussels' media clusters. Still, these institutions first need to be delineated in order to research them and their function and relation within media clusters in Brussels.

Therefore, the overarching research of this Deliverable was: **What are the media institutions to be considered as part of a media cluster and how are they connected?** As has been shown above, there is no consensus in literature to delineate media institutions. Therefore, a new approach needed to be developed. In order to answer the research question, two steps were taken: First, characteristics of media institutions within so-called dimensions were investigated in order to map each sector and identify the NACE classification of the media industry objectively. And second, the value networks of the media industry were established to serve as a demarcation of connections and sub-sectors. Therefore, the three approaches developed are (1) the media dimensions, (2) the NACE classification and (3) the value networks.

Consequently, the first step in future research will be to use the (1) classification system of NACE codes to extract data on media companies within Brussels and beyond. The source will be the Bel-first database (Deliverable 2.2). The second step will be the analysis of this data through an economical impact analysis (that incorporates the (2) value networks) and media cluster identification measures (Deliverable 2.3). However, there are limitations to the use of these statistics and we will therefore evaluate the data and close gaps and strengthen the data quality (by means of the (3) media dimensions) through additional data gathering in the future. The analysis will enable us still to give first insights into the dynamics of Brussels' media clusters. In future research the limitations given through the quantitative approach chosen above will be limited by integrating further qualitative approaches (interviews, surveys) to the analysis of media institutions within media clusters (Work Package 3). This research step will have an endogenous starting point (while the quantitative data uses heterogeneous approaches) to delimit and describe the dynamics of Brussels' media clusters.

Table 12 – The study on media institutions.

The here-developed approach will be integrated in a heterogeneous and quantitative approach to analyse media institutions within media clusters in Brussels in the following steps:

4. The NACE classification will be used to establish a database of media institutions within Brussels and beyond.
5. The data quality will be improved by using the media dimensions to close data gaps.
6. The data will be used for an economical impact analysis (using the value network approach) and the identification of media clusters in Brussels.

This will give first insights on the media industry and Brussels and delineate possible media clusters in Brussels.

From the literature review towards the 7ps

Media institutions have been identified in Work Package 1 as one of the three integral entities within media clusters (cf. Deliverable 1.1a). Institutions and their networks have been broadly recognized as main drivers within media cluster dynamics. Therefore, the media institutions have been scoped in Work Package 1 into the conceptual framework to analyse the dynamics of media clusters. This framework is made up of 7 parameters: place, proximity, pertinence, profile, path-dependency, policy, and performance. These 7 parameters are linked to 7 questions, respectively: Where, how close, how many, who, what evolution, which policies, and what outputs. Answers are to be given also on the level of media institutions and in the future research of Work Package 2. Table 13 displays to connection of the future research with the overarching research framework.

Table 13 – The Ps that will be answered within the future research of WP 2.

Parameter	**Understood as**	**Questions and Deliverables that answer them:**	
Proximity	…the **topographical** and **topological** nearness influencing the media cluster's dynamics.	How closely linked are media institutions to one another within media clusters? **(Topographical and topological)**	D2.3 (Topo)
Pertinence	…the scale of the cluster in **quantity** of entities and **concentration** for the place linked to the development phase of the cluster.	How many media institutions are located in Brussels' media clusters? **(Density and relative significance)**	D2.3
Profile	…the **type** of entities and their **functions** within a cluster.	What kind of media institutions are part of the clusters? **(Activities, sectors, position, etc.)**	D2.3
Path-dependency	…the **historic ligation**, the origins and historically developed **patterns** influencing the dynamics of the cluster.	What is the evolution of media institutions in Brussels' clusters? **(Trajectories)**	D2.3

Where do we go from here?

The first phase of Work Package 2 is finalized with Deliverable 2.1. Four more tasks need to be fulfilled within the course of 18 months (see below).

WP2		
2.1	Report on theoretical framework on mapping.	Desk research on frameworks for mapping of media organisations and already existing Brussels relevant mappings.
2.2	Map (list) of relevant media organisations.	Desk research on the population of relevant media firms based in Reyers and beyond and on data about characteristics and relationships.
2.3	Report of analysis of data.	Analysis of the data through concept mapping of the findings. By concept mapping, the complex relationships between the identified organisations will be elaborated.
2.4	Innovative mapping framework.	Organized interpretation of the data gathered and development of a working framework for media organisation typologies and the assessment of the linkages.
2.5	Workshop.	Preparation and organization of internal dissemination of findings (relevant stakeholders and researchers).

WP2		M2	M4	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
T2.1	Report on theoretical framework		D2.1										
T2.2	Organisation Map				D2.2								
T2.3	REPORT OF ANALYSIS						D2.3						
T2.4	Innovative mapping framework								D2.4				
T2.5	Workshop (internal)										D2.5		

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Appendix 2: Chosen NACE codes

NACE Number	NACE-Classification[17]	ACTIVITY CATEGORY	SUB-CATEGORY	SECTOR	OECD[18]	EU Cluster Observatory	DCSM[20]	Boix et al., 2013[21]	IdeaConsult[22]	KEA[23]
C13.1.0	Preparation and spinning of textile fibres	Excluded	/	/						X
C13.2.0	Weaving of textiles	Excluded	/	/						X
C13.3.0	Finishing of textiles	Excluded	/	/						X
C13.9.1	Manufacture of knitted and crocheted fabrics	Excluded	/	/						X
C13.9.4	Manufacture of cordage, rope, twine and netting	Excluded	/	/						X
C13.9.5	Manufacture of non-wovens	Excluded	/	/						X
C14.1.1	Manufacture of leather clothes	Excluded	/	/						X
C14.1.2	Manufacture of workwear	Excluded	/	/						X
C14.1.3	Manufacture of other outerwear	Excluded	/	/						X
C14.1.4	Manufacture of underwear	Excluded	/	/						X
C14.1.9	Manufacture of other wearing apparel	Excluded	/	/						X
C14.2.0	Manufacture of articles of fur	Excluded	/	/						X
C14.3.1	Manufacture of knitted and crocheted hosiery	Excluded	/	/						X
C14.3.9	Manufacture of other knitted /crocheted apparel	Excluded	/	/						X
C18.1.1	Printing of newspapers	SUPPORT	Post-production	PRINT		X		X	X	X
C18.1.2	Other printing	EXTERNAL	OTHERS	PRINT		X		X	X	X
C18.1.3	Pre-press and pre-media services	SUPPORT	Pre-production	PRINT		X		X	X	X
C18.1.4	Binding and related services	SUPPORT	Post-production	PRINT		X		X	X	X
C18.2.0	Reproduction of recorded media	SUPPORT	Post-production	AV		X		X	X	X
C20.1.2	Manufacture of dyes and pigments	Excluded	/	/		(x)				
C22.2.9	Manufacture of other plastic products	Excluded	/	/		(x)				
C26.1.1	Manufacture of electronic components	EXTERNAL	HW	COMP	X					
C26.1.2	Manufacture of loaded electronic boards	EXTERNAL	HW	COMP	X					
C26.2.0	Manufacture of computers/peripheral equipment	EXTERNAL	HW	COMP	X					
C26.3.0	Manufacture of communication equipment	EXTERNAL	HW	COMP	X	(x)			X	
C26.4.0	Manufacture of consumer electronics	EXTERNAL	HW	COMP	X	(x)				
C26.7.0	Manufacture of optical and photo equipment	EXTERNAL	HW	COMP		(x)			X	
C26.8.0	Manufacture of magnetic and optical media	EXTERNAL	HW	COMP	X	X			X	
C27.3.2	Manufacture of other electronic and electric wires	EXTERNAL	HW	COMP		(x)				
C28.2.9	Manufacture of other general-purpose machinery	EXTERNAL	HW	COMP		(x)				
C28.9.9	Manufacture of other special-purpose machinery	EXTERNAL	HW	COMP		(x)				
C32.2.0	Manufacture of musical instruments	EXTERNAL	HW	COMP		X				
G46.1.6	Agents involved in the sale of textiles and clothing	Excluded	/	/						X
G46.1.8	Agents specialised in the sale of other products	Excluded	/	/		(x)				
G46.4.1	Wholesale of textiles	Excluded	/	/						X
G46.4.2	Wholesale of clothing and footwear	Excluded	/	/						X
G46.4.3	Wholesale of electrical household appliances	EXTERNAL	HW	COMP					X	
G46.4.9	Wholesale of other household goods	Excluded	/	/					X	
G46.5.1	Wholesale of computers, equipment and software	EXTERNAL	HW/SW	COMP	X					
G46.5.2	Wholesale of electronic and telecom equipment	EXTERNAL	HW	COMP	X					
G46.6.6	Wholesale of other office machinery / equipment	EXTERNAL	HW	COMP		(x)				
G46.6.9	Wholesale of other machinery and equipment	EXTERNAL	HW	COMP						
G47.4.1	Retail sale of computers and software in stores	EXTERNAL	HW/SW	COMP						
G47.4.2	Retail sale of telecom equipment in stores	EXTERNAL	HW	COMP						
G47.4.3	Retail sale of AV equipment in specialised stores	EXTERNAL	HW	COMP						
G47.5.4	Retail sale of electrical household appliances	EXTERNAL	HW	COMP						
G47.6.1	Retail sale of books in specialised stores	SUPPORT	Retail	PRINT		X				
G47.6.2	Retail sale of newspapers in specialised stores	SUPPORT	Retail	PRINT		X				X
G47.6.3	Retail sale of music and video recordings in stores	SUPPORT	Retail	AV		X				X
G47.7.1	Retail sale of clothing in specialised stores	Excluded	/	/						X
G47.7.2	Retail sale of footwear and leather in stores	Excluded	/	/						X
G47.9.1	Retail sale via mail order houses or via Internet	Excluded	/	/		(x)				X
G47.9.9	Other retail sale not in stores, stalls or markets	Excluded	/	/						X

[17] Titles of NACE codes have been partly shortened.

[18] Source (OECD, 2011)

[19] Source (Power & Nielsén, 2011)

[20] Source (DCMS, 2001)

[21] Source (Boix, Hervás-Oliver, & Miguel-Molina, 2014)

[22] Source (Idea Consult, Verheyen, & Pierre-Alain, 2012)

[23] Source (KEA European Affairs, 2006)

J58.1.1	Book publishing	CORE	Publishing	PRINT		X	X	X	X	X
J58.1.2	Publishing of directories and mailing lists	CORE	Publishing	PRINT	X	(x)	X	X	X	X
J58.1.3	Publishing of newspapers	CORE	Publishing	PRINT	X	X	X	X	X	X
J58.1.4	Publishing of journals and periodicals	CORE	Publishing	PRINT	X	X	X	X	X	X
J58.1.9	Other publishing activities	CORE	Publishing	PRINT	X	X	X	X	X	X
J58.2.1	Publishing of computer games	CORE	Publishing	NEW	X	X	X	X	X	X
J58.2.9	Other software publishing	EXTERNAL	SW	COMP	X	X	X	X	X	X
J59.1.1	Motion picture, video, TV programme production	CORE	Production	AV	X	X	X		X	X
J59.1.2	Motion pic, video, TV programme post-production	SUPPORT	Post-production	AV	X	X	X		X	X
J59.1.3	Motion pic, video and TV programme distribution	SUPPORT	Distribution	AV	X	X	X		X	X
J59.1.4	Motion picture projection activities	SUPPORT	Distribution	AV	X	X	X			X
J59.2.0	Sound recording and music publishing activities	CORE	Publishing	AV	X	X	X		X	X
J60.1.0	Radio broadcasting	CORE	Publ./Prod.	AV	X	X	X	X	X	X
J60.2.0	Television programming and broadcasting	CORE	Publ./Prod.	AV	X	X	X	X	X	X
J61.1.0	Wired telecommunications activities	EXTERNAL	HW	COMP	X	(x)			X	
J61.2.0	Wireless telecommunications activities	EXTERNAL	HW	COMP	X	(x)			X	
J61.3.0	Satellite telecommunications activities	EXTERNAL	HW	COMP	X				X	
J61.9.0	Other telecommunications activities	EXTERNAL	HW	COMP	X	(x)			X	
J62.0.1	Computer programming activities	EXTERNAL	SW	COMP	X	X	X		X	
J62.0.2	Computer consultancy activities	EXTERNAL	SW	COMP	X	X	X		X	
J62.0.3	Computer facilities management activities	EXTERNAL	SW	COMP		X			X	
J62.0.9	Other IT and computer service activities	EXTERNAL	SW	COMP	X	X			X	
J63.1.1	Data processing, hosting and related activities	SUPPORT	Distribution	NEW	X	X			X	
J63.1.2	Web portals	SUPPORT	Distribution	NEW	X	X			X	
J63.9.1	News agency activities	CORE	Production	PRINT	X	X			X	X
J63.9.9	Other information service activities n.e.c.	EXTERNAL	SW	COMP	X				X	
M69.1.0	Legal activities	FACILITATOR	Business	COMP		(x)				
M69.2.0	Accounting, bookkeeping and auditing activities	FACILITATOR	Business	COMP						
M70.2.1	Public relations and communication activities	EXTERNAL	OTHERS	COMP		(x)	x			
M70.2.2	Business and other management consultancy	FACILITATOR	Business	COMP		(x)				
M71.1.1	Architectural activities	Excluded	/	/		X	X			
M71.1.2	Engineering activities and related technical	FACILITATOR	Research	COMP		(x)				
M72.1.9	Other R&D on natural sciences / engineering	FACILITATOR	Research	COMP						
M72.2.0	R&D on social sciences and humanities	FACILITATOR	Research	COMP						
M73.1.1	Advertising agencies	CORE	Production	ADVERT.		X	X	X	X	X
M73.1.2	Media representation	CORE	Production	ADVERT.		X	X	X	X	X
M73.2.0	Market research and public opinion polling	FACILITATOR	Research	COMP						
M74.1.0	Specialised design activities	EXTERNAL	OTHERS	COMP		X	X	X		
M74.2.0	Photographic activities	EXTERNAL	OTHERS	COMP		X	X	X	X	X
M74.3.0	Translation and interpretation activities	EXTERNAL	OTHERS	COMP		X	X		X	
M74.9.0	Other professional, scientific, technical activities	FACILITATOR	Research	COMP					X	
N77.2.1	Renting / leasing of recreational and sports goods	Excluded	/	/						X
N77.2.2	Renting of video tapes and disks	SUPPORT	Retail	AV		X				X
N77.2.9	Renting / leasing of personal / household goods	Excluded	/	/						X
N77.4.0	Leasing of intellectual property, except copyright	FACILITATOR	Business	COMP						
N78.1.0	Activities of employment placement agencies	FACILITATOR	Business	COMP		(x)				
N78.2.0	Temporary employment agency activities	FACILITATOR	Business	COMP						
N78.3.0	Other human resources provision	FACILITATOR	Business	COMP						
N82.3.0	Organisation of conventions and trade shows	FACILITATOR	Business	COMP		(x)			X	
N82.9.9	Other business support service activities n.e.c.	FACILITATOR	Business	COMP		(x)				X
O84.1.1	General public administration activities	FACILITATOR	Government	COMP						
O84.1.2	Regulation of activities in cultural services, etc.	FACILITATOR	Government	COMP						
O84.1.3	Regulation of operation of businesses, etc.	FACILITATOR	Government	COMP						
P85.4.1	Post-secondary non-tertiary education	FACILITATOR	Education	COMP						
P85.4.2	Tertiary education	FACILITATOR	Education	COMP						
P85.5.2	Cultural education	FACILITATOR	Education	COMP		X	X			
P85.5.9	Other education n.e.c.	FACILITATOR	Education	COMP		(x)				
P85.6.0	Educational support activities	FACILITATOR	Education	COMP						
R90.0.1	Performing arts	EXTERNAL	OTHERS	COMP		X	X	X	X	X
R90.0.2	Support activities to performing arts	EXTERNAL	OTHERS	COMP		X	X	X	X	X
R90.0.3	Artistic creation	EXTERNAL	OTHERS	COMP		X	X	X	X	X
R90.0.4	Operation of arts facilities	EXTERNAL	OTHERS	COMP		X	X	X	X	X
R91.0.1	Library and archives activities	EXTERNAL	OTHERS	COMP		X		X		X
R91.0.2	Museums activities	EXTERNAL	OTHERS	COMP		X		X		X
R91.0.3	Operation of historical sites and similar attractions	Excluded	/	/		X		X		X
R91.0.4	Botanical, zoological and nature reserves	Excluded	/	/				X		X
R93.2.1	Activities of amusement parks and theme parks	Excluded	/	/				X		
R93.2.9	Other amusement and recreation activities	Excluded	/	/				X		
S94.1.1	Activities of business / employer membership org.	FACILITATOR	Membership	COMP						
S94.1.2	Activities of professional membership org.	FACILITATOR	Membership	COMP						
S94.2.0	Activities of trade unions	FACILITATOR	Membership	COMP						
S94.9.9	Activities of other membership organisations	FACILITATOR	Membership	COMP						
S95.1.1	Repair of computers and peripheral equipment	EXTERNAL	HW	COMP	X					
S95.1.2	Repair of communication equipment	EXTERNAL	HW	COMP	X					