

TAMPEREEN YLIOPISTO

Johtamistieteiden laitos

**ERASMUS MUNDUS MASTERS COURSES AS NETWORKS:
A STUDY OF TWO FINNISH COORDINATORS**

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TIIVISTELMÄ

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Tutkimuksessa tarkastellaan kahden Erasmus Mundus maisteriohjelman verkostoteorian avulla, keskittyen Suomalaisten ohjelmakoordinaattorien näkökulmaan. Ohjelmat ovat Joensuun yliopiston Master of Science in European Forestry ja Teknillisen korkeakoulun Master's Programme in Security and Mobile Computing. Tutkimus perustuu asiakirjojen ja koordinoivien yliopistojen avainhenkilöiden haastatteluaineiston analyysiin.

Päätutkimuskysymys keskittyy maisteriohjelmaverkoston päätöksentekoon ja toimintoihin. Muut tutkimuskysymykset käsittelevät verkostona toimimisen vahvuuksia ja heikkouksia sekä koordinaattorin tehtäviä.

Viitekehyksenä toimivat julkisten verkostojen yhdeksän päätöksenteko- ja toimintatapaa, jotka ovat: tiedonvaihto, toimintasuunnitelmat, raportointi, kehittämisfoorumit, tieto- ja viestintäteknologian kehittäminen, strateginen suunnittelu ja varainkeruu, suunnitelmien uudistaminen, toiminnan ja menettelytapojen yhteensovittaminen sekä yhteisten menettelytapojen luominen.

Verkostot voidaan luokitella neljään luokkaan, joista jokainen kykenee myös edellisten luokittelujen toimintoihin:

1. informaatioverkostot, jotka vaihtavat tietoa
2. kehitysverkostot, jotka kehittävät jäsentensä osaamista
3. organisaatioiden rajat ylittävät verkostot, jotka luovat yhteisiä strategioita
4. toimintaverkostot, jotka luovat uusia toimintatapoja ja muuttavat politiikkaa

Kolmannen ja neljännen tyyppien verkostojen keskeisenä erona on päätöksentekovalta suhteessa niiden kotiorganisaatioihin.

Euroopan komissio on Erasmus Mundus ohjelmajulistuksessaan asettanut tavoitteeksi, että maisteriohjelmaverkostot olisivat toimintaverkostoja, jotka pystyisivät ohjelman mukaiseen menettelytapojen kehittämiseen ja vaikuttamaan kansalliseen korkeakoulupolitiikkaan. Voidaankin kysyä onko Euroopan komissio asettanut liian suuria odotuksia verkostojen vaikutusmahdollisuuksiin suhteessa niiden toimintaympäristöön.

Tutkimus osoittaa, että Euroopan komission asettamat idealistiset odotukset verkostojen toiminnalle eivät toteudu verkostojen käytännön toiminnassa. Koordinaattoreiden haastatteluista käy ilmi, että sekä maisteriohjelmaverkostojen kotiorganisaatiot että kansallinen korkeakoulupolitiikka rajoittavat niiden päätöksenteko- ja toimintakykyä. Analyysin perusteella Erasmus Mundus verkostot jäävät organisaatioiden rajat ylittäviksi verkostoiksi, jotka voivat toimia vain kansallisen lainsäädännön ja omien organisaatioidensa asettamissa rajoissa.

Verkostojen toimintaympäristö tulee todennäköisesti tulevaisuudessa muuttumaan kansallisten korkeakoulupolitiikkojen yhdenmukaistuessa, mutta muutosta instituuttitason päätöksenteossa suhteessa ohjelmatasoon tuskin tapahtuu.

LIST OF ABBREVIATIONS

- ASEFOREP** Asia-Europe Exchange Project in Sustainable Forest Management
- BOKU** Universität für Bodenkultur [University of Natural Resources and Applied Life Sciences]
- CEC** Commission of the European Communities
- CIMO** Center for International Mobility
- DTU** Danmarks Tekniske Universitet [Technical University of Denmark]
- EAC (DG)** Education and Culture (Directorate General)
- EACEA** Education, Audiovisual and Culture Executive Agency
- EC** European Commission
- ECTS** European Credit Transfer System
- EF** European Forestry
- EM** Erasmus Mundus
- EHEA** European Higher Education Area
- EU** European Union
- HEI** Higher education institution
- ICA** Interuniversity Consortium for Agricultural and Related Sciences in Europe
- KTH** Kungliga Tekniska Högskolen [Royal Institute of Technology]
- MoEC** Ministry of Education and Culture
- MSc** Master of Science
- NGO** Non-governmental organisation
- NordSecMob** Master's Programme in Security and Mobile Computing
- NTNU** Norges Teknisk-naturvitenskapelige Universitet [Norwegian University of Science and Technology]
- PMN** Public management network
- SLU** Sveriges lantbruksuniversitet [Swedish University of Agricultural Sciences]
- UdL** Universitat de Lleida [University of Lleida]
- UT** University of Tartu
- TKK** Teknillinen korkeakoulu [Helsinki University of Technology/ Aalto University School of Science and Technology]

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1 INTRODUCTION

Research on higher education networks and joint educational programmes is an extremely topical issue due to the internationalisation of higher education, the introduction of new forms of degree education and cooperation between institutions. This research on higher education networks involved in organising Erasmus Mundus masters courses stems from this background. The results and findings of the study will benefit coordinators and partners organising Erasmus Mundus masters courses, national and European programme experts and other stakeholders, and it is even possible that the research will have policy implications. As the research aims at transferability rather than universality (Newman and Benz 1998, 55), the findings are to some extent relevant also to other joint educational programmes than Erasmus Mundus. The major restriction foreseen is that, as all networks may involve partners from different countries than those addressed in this study, the effects of national governance and legislation may cause the conditions of operation to be significantly different in other countries, and thus the findings cannot be generalised to other networks operating in other countries without adaptation. The research will provide more knowledge for the Erasmus Mundus masters courses on the European expectations and on the differences in the coordinators' view on cooperation and functioning of educational networks. Understanding how the practices applied in these masters courses have come about and what kind of future changes might be anticipated due to internal and external changes affecting the functioning of the network are also valuable insights.

1.1 Background

Internationalisation of higher education has become a strategic aim on institutional and system levels all over the world. Internationalisation is not only a national endeavour, but is promoted in cooperation with supranational organisations such as the European Union, OECD and UNESCO. (Strategy for the Internationalisation of Higher Education Institutions in Finland 2009–2015, 11). The European Union has set the creation of a European higher education area (EHEA) as its higher education policy target. The development of common and comparable standards, such as qualification frameworks, learning outcomes and ECTS credit points, are all part of this mission. The aim is that Europe would become a competitor with particularly the American, but also Australian and Asian higher education markets in terms of quality and attractiveness.

International joint educational programmes, which are carried out by networks of universities, are a part of a new idea of internationalisation of degrees and mobility, where studies completed in another university become an integral part of the degree, rather than irrelevant additions which may even prolong graduation. In a network, partners may offer completely novel and unprecedented education and degrees. Networking is seen as rendering added value by combining the expertise of separate universities, and it allows specialisation and profiling for the institutions as they may benefit from each other. Vice versa, institutions also “improve their positions as credible international cooperation partners in research and education” by profiling and through specialisation (Strategy for the Internationalisation of Higher Education Institutions in Finland 2009–2015, 23).

International joint educational programmes, such as those under the status of Erasmus Mundus, are flagships of international and global education. The Erasmus Mundus programme was launched by the European Commission in 2003 as a funding programme, but also as a quality label for masters courses carried out by networks of European higher education institutions. According to the European Commission, the Erasmus Mundus programme has a two-fold focus: in addition to the cooperation between Europe and the rest of the world, there should be a European level of cooperation. The Erasmus Mundus programme is a part of the European higher education policy as it is supposed to contribute to the attractiveness of European higher education globally; promote European knowledge society and answer the demands of globalisation (Call for Proposals EAC/22/04, 4). European higher education institutions should combine their “individual strengths,” “educational diversity” and “experience in networking” to form a high-quality consortia. On the masters course-level, the aims include offering teaching of high quality and international mobility. (Decision No 2317/2003/EC, 8: Article 1, 1; Call for Proposals EAC/22/04, 5).

On the national level, according to the Finnish Ministry of Education and Culture¹ there has been serious criticism on the scarcity of international elements, such as foreign students, researchers and teachers, in Finnish higher education. (Strategy for the Internationalisation of Higher Education Institutions in Finland 2009–2015, 5). The internationalisation of higher education in Finland is based on mobility, but also on international research and development projects and the development

¹ The new name Ministry of Education and Culture (also the Ministry of Education, Science and Culture) was introduced on May 1st 2010. Before that the name was the Ministry of Education. (Press Release 30.4.2010 <http://www.minedu.fi/OPM/Tiedotteet/2010/04/nimenmuutos.html?lang=fi>). I will consistently use the new name, but the old name still appears in the names of publications.

of joint and double degrees specifically (Koulutus ja Tutkimus 2007-2012, 43). The expectation is that internationalisation is taken into account on all levels of studies and that higher education institutions cooperate globally and particularly within the European Union and the Nordic countries. (Strategy for the Internationalisation of Higher Education Institutions in Finland 2009–2015, 28, 26). Internationalisation is also set as one of the funding criteria of universities.

Despite the parallel aims of national and European education policies, there are significant obstacles in relation to especially in the practices of planning, organising and running joint educational programmes in cooperation with partners in other countries and institutions. The task of the coordinator of a network organising a joint educational programme is thus particularly challenging. There is evident need for researching networks organising educational programmes.

There is need for this kind of investigation particularly as the first period of the Erasmus Mundus programme (2004-2009 + extension year 2010) is drawing to its end, and there is growing need for ex-post evaluation of the experiences gained during these years, and an increasing interest from the part of institutions that are prospective applicants, national organisations and governance bodies, as well as, the European Commission. The purpose of this study is to be explanatory, aiming to understand the network patterns of the masters courses and identifying the aspects that affect the coordination of these networks. This study is also exploratory in investigating a topic that has not been studied and generating possible themes for further study (Marshall and Rossman 2006, 33).

1.2 Objectives

This research can be placed in the general field of higher education administration research, or theoretically as a part of policy studies. On a wider scale, European dimensions have been studied in relation to educational policy and its coordination in terms of governance (Blomqvist 2007); European Union governance in higher education (Maassen and Olsen 2007; Olsen 2008); and multi-level governance (Kohler-Koh 2008). The paradigm change from national to supra-national approach and the shift from national to global and European frames of reference utilised in governance research are significant for this research, as well.

However, governance theory focuses on macro-level system analysis and is at its best when applied to policy documents or legislation (cf. Blomqvist 2007). As the focus of this study is on micro-level

and in the everyday practices of network operations and coordinating of an Erasmus Mundus masters course, governance theory is not the most fruitful approach. It can be claimed that joint masters courses are realised by networks of inter-organisational relationships. Thus the planning, decision-making and organising of an Erasmus Mundus masters course can be analysed with the help of organisational network models and particularly “*Public Management Networks (PMNs)*” (Agranoff 2007). The functions of a network are coordinated and controlled internally, by the members of the network are related to the network operation through hierarchies and steering mechanisms. Additionally, the agreements, regulations, processes, norms, values and trust within the network and in the surrounding national context shape the network operation. The external influence of the educational and labour markets should not be ignored either (Mitronen 2002). With public networks I would also consider the importance of national policies, legislation and related regulatory aspects.

Network theories have been presented in organisation research textbooks since Gareth Morgan’s (1986) metaphorical interpretation of the organisation as a brain. They have indisputably gained their foothold in most introductory presentations on different organisational theories since the 1990s. Recent works in this line include those of Gareth Jones (2004), Richard H. Hall and Pamela S. Tolbert (2005) and W. Richard Scott and Gerald F. Davis (2007). The view on organisations as networks is also related to the more general open system perspective on organisations.

Particularly public organisations and their internal and external relationships have been analysed through network theory, for example, by Robert Agranoff (2007). Network theories have been popular also in social scientific research on social relations (Granovetter 1973) research on industrial networks in economics and business administration (Axelsson and Easton 1992; Mitronen 2002) or studies on electronic and virtual networks such as the World Wide Web. Since network may be perceived as a model or a metaphor, its application in research may be flexible. Many of these theoretical concepts from different strands of network research may be applicable, and thus productive for studying the focus of this thesis, inter-institutional public educational networks. Educational programmes have also been analysed from the point of view of network theory by Ottewill, Riddy and Fill (2005) and Bienzle et al. (2007).

In addition to organisational network theories, this study contributes to European educational programme coordination research. Educational programme research includes different kinds of approaches, but the more practical-oriented programme studies and surveys, such as Rauhvargers

and Tauch (2002), Maiworm (2006), have most concrete significance.

1.3 Research Questions

The main research interest of the thesis is related to the networks of higher education institutions involved in organising Erasmus Mundus masters courses, and the coordination and functioning of these networks. This research topic is approached by posing three related questions as follows:

1. What are the actions and decisions of programme adjustment and policy-making of the network in organising an Erasmus Mundus masters course?

2. What are the strengths and weaknesses of operating as a network?

3. What are the tasks of the coordinator in the network?

There are academic, pragmatic and policy reasons for posing these research questions. The first, main question is important as more and more educational programmes are carried out in networks and there is need to explore these networks from a theoretical point of view. The theory on public management networks is utilised as a more theoretical approach will help us understand both the structure and functioning of educational networks. There are particular aspects in educational networks, thus this thesis will also look at the application of research on public management networks on this particular topic. This approach may also shed light on why networks were chosen as the cooperation structure in the Erasmus Mundus programme.

When defining the different levels of the topic of this research, it can be said that the interest level focus is on networks of joint educational programmes and particularly on Erasmus Mundus masters courses, whereas, the thematic level focuses on different types of networks (models) and network actions in Erasmus Mundus masters courses with Finnish coordinators. As the unit of analysis is primarily on the masters course-level, but also national system level, this in turn affects the determining of variables in order to delineate the scope of the study (Jreisat 2005, 237).

The second research question will render practical information for those operating in educational networks. In order to understand what are the benefits and challenges of carrying out education in networks, the strengths and weaknesses of network functions are discussed. Based on the findings that that operating in networks renders added value to public organisations (Agranoff 2007), it may be assumed that there may be benefits in networking also in education. With this knowledge it is

also possible to evaluate when networks are a viable way of organising educational programmes. This question will thus give evaluative information on educational networks. There are several policy implications in organising educational programmes in global and international networks, which may require changes in national legislation regulating higher education, as well as, in institutional rules and practices.

The third research question is introduced, since the position of the coordinator of a network is pivotal to the functioning of the whole and thus there is particular need to explore the point of view of the coordinator. Thus focusing on the coordination of Erasmus Mundus masters course networks will give new insight on the coordination of the network actions and decisions.

To investigate these three research questions, there is need to open them up in to themes, topics and more detailed questions, as will be done specifically in the thematically structured interview framework (see Appendix 1). The research is theory-driven, but the specific focus will emerge and develop through a responsive process with the data (cf. Rubin and Rubin 2005, 15). The questions will be explored through analysing documents by the European Commission and with the help of masters course-level documents and interview data. As a result of this two-fold analysis it will be possible to analyse the Erasmus Mundus consortia through different network theories and typologies the networks actions and decision-making.

1.4 Structure

After the introduction, chapter two will set the context of the research and present the theoretical approach chosen. I will move from the general context to the specific background information. First, the background is set by discussing the European and national contexts of higher education programmes. Then, the concept of joint programme and different types of jointness in educational programmes are presented, and lastly, on the specific level, the Erasmus Mundus programme, and its first phase in particular, is depicted.

The latter part of chapter two focuses on the theoretical framework of network theory. This part of the chapter is structured similarly from the general to the more specific, from the theoretical approaches to coordinating networks and to networks operating in the field of in higher education.

The third chapter presents the methodological part of the thesis. The approach chosen in this qualitative research is based on two cases and thus the method of case studies is discussed. The methods applied in gathering the research data include document analysis and thematic interviewing, which are the topics of the second and third subchapters. All the gathered data has been analysed with the tools provided by content analysis, which is presented in the fourth subchapter. The methodological chapter ends with considerations on reliability and validity. The limitations and challenges of the methodological approach are considered in this last subchapter.

The fourth chapter is the actual analysis part of the thesis, presenting the findings from the document and interview analyses. The chapter opens with the analysis of the European Commission's Erasmus Mundus documents. After this I move on to the first case, the Erasmus Mundus masters course, Master of Science in European Forestry organised by the network coordinated by the University of Joensuu. The second case is the Master's Programme in Security and Mobile Computing with the Helsinki University of Technology as the coordinator of the network. The analysis of both cases is based on a similar structure where the description of the course is the first part, after which the jointness of the course is evaluated compared to criteria set by the Ministry of Education and Culture and the European Commission. In the actual application of the theoretical approach, the masters course consortia are placed in a network categorisation matrix. Particular attention is paid to the decision-making and coordination aspects in the network operation. The nine actions and decisions of the network (Agranoff 2007) are chosen as main tool of analysis. Although the analysis is theory-driven and both cases are basically similarly structured, the subchapters are named in a content-specific manner.

The fourth chapter answers to the research questions. The functioning of the networks is first presented in descriptive manner and then based on network theoretical categorisations. The way these network actions and decision-making are manifested in the Erasmus Mundus consortia also gives indications on the strengths and weaknesses of operating as a network in organising an educational programme.

It is also worth noting that the approach in the analysis is limited only to the Finnish national perspective in the sense that the view-point of the other European degree awarding partners in the Erasmus Mundus consortia of the chosen masters courses is not considered. Similarly the national governing bodies of other countries are not included in the research. The effect other consortia partners, their home universities or their national governing bodies have on the realisation of the

EM programme will only be addressed from the point of view of the Finnish coordinator and in the context of the Finnish national governing structure. This focus sets the framework for the third research question on the tasks of the coordinator in the network. The results of the analysis are presented in chapter four, but the main findings are summarised in the conclusion.

2 BACKGROUND AND THEORETICAL FRAMEWORK

This chapter begins with three descriptive subchapters, which define the European and Finnish national context affecting the higher education system and educational programmes. In addition, the different kinds of educational programmes and particularly the Erasmus Mundus masters course will be presented. The latter part of this chapter aims to describe the theoretical approaches relevant for the research theme and to define network theory, which was chosen as the frame of reference, as well as, to give reasons for its selection.

The theoretical framework of the research will be based on organisational network theories. However, the meaning of ‘networks’ utilised in this research requires still greater definition. The main questions to be answered in the theoretical part of the thesis are: what is the nature of a network? How can networks be categorised? What functions do different kinds of networks have? After defining the approach used in this research, alternative, rivalry or complimentary theories that might be applied should be considered in order to determine the viewpoint inherent in this theoretical framework, reflectively and relationally arguing with regard to the research questions.

Practitioners, policymakers and research participants have their own concerns and interests in relation to the topic and thus their perceptions will affect the formulation of the theoretical and methodological approaches. In the transition from the conceptual to the observational level there will be need for theoretically opening the concept of network. On the research level, conceptual components that form a part of network theory and defining these conceptual components and the questions through which it is possible to find answers relevant to the concepts will be defined (Marshall and Rossman 2006, 26-29).

After establishing the framework, in order to map out the field and the research done on similar themes, it is viable to ask the following questions: What previous research exists on networks in Erasmus Mundus or other educational programmes? Previous research relevant for the topic of this thesis will be presented in the end of this chapter.

2.1 European and National Context of Higher Education Programmes

In order to understand the context in which higher education programmes such as Erasmus Mundus operate, the national and European (global) influences on the structure, governance and policies of the programme need to be considered. Olsen (2008) advocates abandoning “‘the state’ as a major frame of reference.” In many ways it seems that the European context is the most significant factor for the Erasmus Mundus programme. Despite this tendency, it is still evident that the national characteristics, such as the fact that the Finnish higher education system is centrally governed, with the government (or the Ministry of Education and Culture) steering the crucial variables and the educational policy goals have great significance. The different national governance tools include legislation, instructions, agreements, negotiations and informal guidance and cooperation. Although, there is active and direct regulatory steering, this does not exclude possibilities for institutionally autonomous implementation and mutual adjustment stemming from these practices. It is worth noting that different steering and governance strategies have varying theoretical premises.

According to Blomqvist (2007) governance can be defined as a phenomenon that includes reflection on issues, learning by doing and the evaluation of results. Nowadays governance takes place, not only in hierarchical structures of organisations but also within new processes, functions and networks. According to policy network theories (Dassen 2010) governments utilise policy networks as instruments to steer society with three possible generic policy goals:

- 1) to create a platform for stakeholders to represent their interests and to facilitate the production of a policy outcome that is supported by and experienced as a legitimate by those concerned
- 2) to address increasing levels of functional differentiation in societies, as governments no longer have sufficient expertise to deal with the complex issues of certain policy fields. Policy networks provide the information to guarantee effective and efficient policy formulation and implementation
- 3) to produce outcomes that are more innovative than those of other modes of societal coordination (i.e. markets and hierarchies) as 1) they include a variety of stakeholders and experts, who would otherwise not participate and 2) they provide opportunities for these stakeholders to interact (73-74).

A policy-network view may be assumed to some extent on supra-national networks such as those involved in novel flag-ship programmes like Erasmus Mundus. Thus it is not only the national (such as ministries) or supranational (such as the European Commission) organs that have the

(legislative) power to govern, but the arena for action is wider and more diverse. This allows more room for negotiation and adaptation between the different governing bodies. Voluntary cooperation and governance may be implemented in networks not through legislation but through recommendations (Blomqvist 2007, 47). Generally there has been a tendency to move away from centralised governance (steering by the Ministry of Education and Culture) to emphasise self-regulation and autonomy or towards a combination of these referred to as ‘hybrid-steering’ (Maassen and van Vught 1994; Gornitzka and Maassen 2000).

2.2 Joint Programmes, Joint Curricula and Joint Degrees

There are different terms depicting different kinds of educational cooperation and thus it is important to define what is meant with these terms. From the point of view of this research the terms “*joint programme*,” “*joint curricula*” and “*joint degree*” are most relevant. Despite the fact that these terms are not always clearly defined and sometimes may be used interchangeably with others, the following distinctions will be set as the starting point of this study. These definitions will also be reflected with the self-definitions of the studied masters courses in later analysis.

Joint programme, sometimes also referred to as an integrated study programme, includes all kinds of programmes with periods of study in another university in another country. These kinds of programmes have been about since the 1970s, but most of the joint programmes have emerged after the Bologna Declaration (2003). Joint programmes are aimed at strengthening collaboration between universities in different countries and their main form is the exchange of students and teachers. The studies attained in the partner university may be fully or partially compensated (through credit transfer) and may be included in the degree awarded by the student’s home university. (Recommendation on the Recognition of Joint Degrees 2004, 4; Maiworm 2006; Finocchietti, Finocchietti, Lantero, Damiani and Testuzza 2006; Development of international Joint Degrees and double degrees: Recommendation of the Ministry of Education 2004).

Programmes originally focused on mobility and exchange-based cooperation may also develop joint teaching and even a *joint curriculum*. In joint curriculum programmes the partner universities require students to take part of their studies in the other partner university/universities as a part of their curriculum. With a joint curriculum the partners should have set joint “educational goals, learning outcomes, i.e. competence profiles of graduates” (Maiworm, 2006, 9) and teaching is

planned and carried out in cooperation (Recommendation on the Recognition of Joint Degrees 2004, 4). Three models of joint curriculum programmes may be distinguished. Firstly there may be an *identical curriculum* in all participating universities with shared learning and teaching methods. Secondly, there may be *comparable courses with different specialisations* in each partner university or lastly, the courses offered at the partner universities may be *complementary but mandatory parts in the joint curriculum* (Maiworm 2006, 9).

Programmes that have a *joint curriculum* may lead to the awarding of a *double, multiple or joint degree*. Andrew Finch (2003) states that a *joint degree* “can be defined as one programme, which results in one award, authorised by two or more institutions.” The awarding of a *joint degree* always entails a *joint curriculum* and full recognition of all studies (including thesis work) completed in partner universities. In addition to the above mentioned, it is stated in the European level recommendations on joint degrees that all of the following should be considered as *joint degrees*: a joint diploma issued by the institutions offering the study programme, a joint diploma in addition to one or more national diplomas and one or more national diplomas issued officially as the only attestation of the joint qualification in question. (Recommendation on the Recognition of Joint Degrees 2004, 4). When considering these definitions, they seem to be surprisingly lax, allowing for many different variations. I would not consider the last kind of programme with only national degree diplomas as a *joint degree*. When examining *joint degrees* in more detail the following characteristics should be present in order for the degree to be considered as *truly joint*:

- the programmes are developed and/or approved jointly by several institutions
- students from each participating institution physically take part in the study programme at other institutions (but they do not necessarily study at all cooperating institutions)
- students’ stay at the participating institutions should constitute a substantial part of the programme
- periods of study and examinations passed at the partner institutions are recognized fully and automatically
- the partner institutions work out the curriculum jointly and cooperate on admission and examinations.

In addition, staff of participating institutions should be encouraged to teach at other institutions contributing to the *joint degree* (Rauhvargers and Tauch 2002, 29). Finch (2003) sees *joint degrees* having a potential to become an element of “a truly European Higher Education Area.” Thus it may be claimed that *joint degrees* and the Bologna Process are closely connected.

Some of these criteria are subjective; for example, there may be differing views on how long a stay should be considered substantial. In the Bologna seminar in Berlin 2006, the abovementioned criteria were further elaborated stating that *joint degrees* should “be settled on by cooperation, confirmed in a written agreement between institutions.” With these definitions in mind, it is worth mentioning that the Erasmus Mundus programme definitions are based on a “narrower and closer to a ‘true’ joint degree of the one certificate or - diploma type” (Official Bologna Seminar Berlin 2006, 1, 2). The Erasmus Mundus calls for proposals, however, do recognise the national limitations with awarding *joint degrees* in several European countries, and thus allow interpretation.

In Finland, the Ministry of Education and Culture has given recommendations on the planning and implementation of *joint degrees* in 2004 (Development of international Joint Degrees and double degrees: Recommendation of the Ministry of Education). These instructions were updated in 2007. According to these instructions, in order for a *joint degree* programme to be joint, the student selection criteria and process should be joint. Similarly the curriculum should be planned and carried out together. In addition, the instructions encourage higher education institutions to evaluate the need for a joint programme and its additional value in relation to already existing programmes and degrees.

Generally the instructions do not make a distinction between *joint degree programmes* where only one degree diploma is issued and *double (or multiple) degree programmes*. As stated in the recommendation: “...the term *joint degree* refers to a joint programme, developed and organised by two or more HEIs, that leads to one or several degree certificates. Thus, the definition does not make a distinction between a joint degree and a double degree” (2004, 1). The fact that this distinction has not been made clearly in the Ministry’s recommendations, has caused some confusion. Issuing only *one joint degree diploma* has not been possible under the Universities Act, as the legislation requires that a national degree diploma is issued at least in addition to the joint diploma: “every participating Finnish HEI grants a degree to the students it has admitted as degree students” (Development of international Joint Degrees and double degrees: Recommendation of the Ministry of Education 2004, 2). According to the recommendation “[t]he status of joint degrees which do not belong to any country's official education system is still ambiguous and not established. This problem is only partly solved through the amendment of international legal instruments,” such as the Lisbon Strategy (2004, 2). This was not changed in the Finnish national context, in the higher education legislation reform in 2009.

2.3 The Erasmus Mundus Programme

The European Commission has set the enhancing of the visibility and desirability of European higher education as its targets, and the Erasmus Mundus programme can be seen as a means for these aims. The Commission tries to entice higher education institutions to increase cooperation between each other and thus become more effective and efficient as a whole. This implies the integration of the Lisbon Strategy and the Bologna Process in the concrete delivery of higher education on an institutional level, in close cooperation with other (European) higher education institutions.

It is clear that Erasmus Mundus is connected to the Bologna Process and the Lisbon Strategy in its aims of enhancing the attractiveness of European higher education and making Europe the most competitive knowledge-based economy. The Erasmus Mundus programme is presented as a flagship of high quality European masters courses. Within the context of the creation of a European Higher Education area (EHEA), it can also be seen as an attempt to govern and to influence other levels of governance. There is growing interest in setting common European standards and developing higher education into a more uniform direction. It is openly stated on the European Commission's web pages that it aims to "stimulate the process of the convergence of degree structures" in Europe. This also refers to reform needs on national level in the member states (European Commission, Education & Training, External Programmes, Erasmus Mundus web page²). It may be claimed that by encouraging cooperation between European higher education institutions, the European Commission strives to enhance the effectiveness and efficiency of European higher education and to integrate the aims of the Lisbon Strategy and Bologna Process into the implementation of higher education programmes (cf. Tirronen 2006, 11).

The Erasmus Mundus programme was established by the European Commission at the end of 2003 to promote mobility and cooperation in European higher education. The first call for applications was in 2004 and it was open to master level courses. The first Erasmus Mundus programme consisted of four separate but interconnected actions, which may be summed up in the four following points:

² http://ec.europa.eu/education/external-relation-programmes/doc72_en.htm

1. Masters courses: high quality master level courses organised jointly by a consortia of at least three institutions in different European countries. The masters courses should have integrated, joint curricula and award a recognised joint, double or multiple degree
2. Scholarships: scholarships for third country students and scholars aimed at attracting non-European participants
3. Partnerships: partnerships with non-European higher education institutions enabling mobility for European students and scholars in third countries.
4. Enhancing attractiveness: projects aimed at enhancing the profile, visibility, attractiveness and desirability of European higher education

Among the 103 Erasmus Mundus masters courses that were accepted during the period of the first programme (calls in 2004-2008) there are 11 masters courses with Finnish institutions involved. Of the Finnish higher education institutions participating in the first phase of Erasmus Mundus, only two institutions act as coordinators in their consortia. The Erasmus Mundus masters courses are usually carried out by a consortium of 3-7 universities. Although three is set as the minimum number for the size of the consortium, there is no official maximum number.

When examining the Erasmus Mundus consortia, it is relevant to define the concept of *consortium*. Consortium may be perceived as an institutional form of cooperation between universities, which is based on voluntarism and trust. Consortia have often been associated with economic cooperation, but it may also refer to agreement-based cooperation serving other common goals. Masters course consortia are not the most typical forms of consortia however, they may be placed into the framework of consortia as informal, voluntary, specialised and international, not having permanent staff or structure. Such loose organisations are not directly under public governance and they are often temporary (Tirronen 2006, 15, 13).

From an administrative point of view Erasmus Mundus consortia may be seen as primarily a functional network created for a particular purpose such as carrying out an educational programme. The consortia have defined their cooperation as they have found fit, in connection to their own preferences and the traditions of their field. On the masters course-level the agreements on the responsibilities of each partner, their status and position, as well as, their tasks are primarily based on mutual trust and collegiality (cf. Neal 1988; Tirronen 2006). The national legislation of different countries set the framework within which these agreements may be made.

The current situation of the Erasmus Mundus programme is that the second phase of the Erasmus Mundus programme was initiated after the Decision of the Parliament on 16th December 2008. The first call for applications was launched in February 2009 and the call closed on April 30, 2009. Masters courses, but also doctoral courses could apply for the Erasmus Mundus status. In addition larger exchange networks, previously under the Erasmus Mundus External Cooperation Window have also been incorporated into the new Erasmus Mundus programme. The masters and doctoral courses for the second Erasmus Mundus round were selected in August 2009 and begun operating in 2010.

2.4 Networks and Network Theory

Networks may be linked in to the more general discussions on the information society and knowledge society, where the defining characteristic is said to be the exchange of information within networks. Networks of experts produce innovations, brands and non-tangible products that may be considered a form of capital together with physical and financial capital. This new form of capital is not tied to a particular spatial or temporal dimension, but may be produced whenever and where-ever. This also allows networks to function globally and according to global rather than local factors. This global setting entails, not only more possibilities and connections, but also more competition (See Castells, 2000).

As was stated earlier, the network functions as a model or a metaphor also in the analysis of organisations. The structure of a network may be defined according to the relationships (*bonds* or *ties*) between different members (*actors*) in the network. An actor and its individual attributes is referred to as *node* (Axelsson and Easton 1992; Scott and Davis 2007, 278-280; Dassen 2010, 52-53). The *bonds* connect the members and may be physical or personal relationships between the *actors*. (Scott and Davis 2007, 278) They may also be “directional or reciprocal, and vary in content, medium and frequency” (Dassen 2010, 52-53). Networks are visualised with the help of *sociograms* where actors, such as individuals or organisations “are depicted as points, and the relations these entities maintain with one another are represented by lines, linking the corresponding points.” (Dassen 2010, 51). *Sociograms* are *ego-networks*, which depict the bonds the focal actor has with other actors, *alters* and the bond between the *alters*. The depicted ties may be strong or weak and weak ties “can be either bridging or non-bridging”. Bridging ties are ties to alters the ego weak bridging weak ties connect actors otherwise not connected (Granovetter, 1973; Dassen 2010,

96). In this analysis the coordinators of the Erasmus Mundus networks are the *egos* and the partners are the *alters*. From a social network perspective the actors, or “social entities’ actions are not only determined by their individual characteristics,” but by their social connections, which may offer opportunities, also restrict their actions. (Dassen 2010, 52).

As networks are about members and their relationships, in essence, they are all organisations in themselves. All networks share common characteristics typical for other kinds of organisations, as well. The membership of a network should be based on some criteria; the members should have shared interests, goals and aims, and an agreed upon way of communicating, a degree of specialisation among the different partners and a way of coordinating and managing the activities of the network and its members. Networks are formed in different ways: some are initiated by the members themselves whereas others are responses to policies on national or global level (Ottewill et al. 2005).

In addition to shared characteristics there are also important differences between networks. In this research, I will follow a commonly accepted rough definition of networks based on their characteristics. Social network analysis is primarily interested in the structures and ties of networks and networks may be categorised according to the patterning of the ties (Dassen 2010, 53; Scott and Davis 2007, 280). According to a common tri-fold typology, networks may be defined based on their *structural*, *relational* or *functional* (also referred to as processual) qualities. This division has been further elaborated with four categories as follows:

1. Networks as *structures*: qualities, structures, boundaries, uniformity, hierarchy, rules
2. Networks as *relationships*: economic, social, technical, logistic, administrative, informational, legal, and temporal bonds, shared aims, learning, mutual adjustment and adaptation
3. Networks as *positions*: the roles of actors, position in relation to others, identity, actor-oriented
4. Networks as *processes*: functioning of processes, structuring of functions, stability and change and external powers on networks. Internal power, resource allocation, exchange, competition and cooperation, action-oriented

(Axelsson and Easton 1992; Möller and Wilson 1995, 587-613; Mitronen 2002, 28; Dassen 2010, 54).

For this study, the *structural* aspect of network theory is useful in the descriptive function, thus it may be profitable to present the structural form of the analysed networks as background information. Only parts of the *relational* aspect seems relevant for answering the questions put forth in this research, as the shared aims and mutual adjustment are crucial to the Erasmus Mundus networks. Instead of defining *positions* as a separate network category, it might be included in the view on networks as *relationships*. I will present a short description of all the above network categories, but focus more on the most relevant approach of the *processes*, functionality and actions in the networks.

Networks as Structures

Networks may be categorised through their organisational structure. The *size* of the network defines how many members are included in the network. *Duration* is used to define the time the network operates. In practice networks may be permanent structures, but most networks are temporary, especially if they are organised inter-organisationally to perform a specific task. Similarly informal networks may be temporary, but their establishment and disintegration is not defined, but may happen according to the network members' actions. Networks are considered inherently democratic, but *hierarchy* is one of the structural aspects applied when defining networks. In a hierarchical network "a single actor is either directly or indirectly related to all other actors" (Dassen 2010, 60). Thus the most likely hierarchy in a Erasmus Mundus network is to be found between the coordinator and other members, however, it is possible that there are other hierarchical differences inside the network. The *formalisation* of the network may range from formal to informal, from highly regulated network organisations to informal groups of friends. The *range* of the networks defines its operating environment, whether it is a local network of members that are geographically close to each other, or a global network spanning over national boundaries. The network members usually have some kind of *division of labour*, at least a division between the tasks of the coordinator and the other members. The *exclusiveness* of the network indicates whether it is a closed network, which may not be joined after its establishment of an open network where there are no or very few criteria for new members to join in or something in between these two extremities. The *subject-specificity* of the network is related to the functioning of the network, whether the network has a specific subject area, such as sustainable forestry or if it may address a wide variety of interests. The *moderation* of the network actions may be constant or variable and it may be internal (e.g. done by the coordinator) but also external. *Voluntariness* of the network members is usually assumed in network theories, although there may be networks that are formed as part of national governance regulated by legislation (Biezle et al. 2005, 15).

In addition to these, networks may be measured and compared based on characteristics such as *distance*, which refers to the shortest path between two actors; *centrality*, which describes the importance of individual actors in a network based on the number of direct contacts or the closeness to other actors. This also reflects whether the actors have direct connections to each other or whether they are mediated by a third actor. *Betweenness* refers to the mediating capacity of an actor. For example, to what extent “the focal actor lies on a path connecting two alters” (Dassen 2010, 60). Clustering and structural holes, which are related to the level of *interconnectedness* between all the network actors. In clustered networks all the members have connections to each other, whereas networks, where members are not connected to all the others, have structural holes. *Equivalence* defines how many members occupy similar positions in the network and have “similar sets of behaviour” (Dassen 2010, 55). *Density* refers to ratio of the possible number of all ties in a network and the number of ties actually present, thus it refers to the connections of all members to all the other members in the network. (Dassen, 2010, 58). *Centralisation* is the term used to depict whether all the actors are similarly central or if someone is more dominant. This is manifested through the extent of relations the focal actor has with the other network members (Dassen 2010, 60). (see also Scott and Davis 2007, 282-285; Smith-Doerr and Powell, 2005).

Networks as Relationships

Social network theory is based on the principle of reciprocity in behaviour and the exchange of resources, ideas, information, knowledge, and social support. Thus it may be used in analysing the relationship between people or stakeholders in a network-based mode of operation. Rather than treating individuals (persons, organisations, states) as discrete units of analysis, it focuses on how the structure of ties affects individuals and their relationships. At a basic level, networks may be seen as a group of people that stay in touch, for whatever reason, and the social function of the network may simply be a sense of belongingness for its members (Ottewill et al. 2005).

Networks may also be used as a method for analysis, when the research is conducted from the point of view of one member in a network. Then the presupposition is that the member can define with relative accuracy the relations between the different actors in the network. The focus is on the relations, but this also renders information on the actors themselves. The position of an actor within a network is both encouraged and restricted by the very existence of the network. The question of hierarchy and power looms over any analysis of relations and may not, for that matter, be

obliterated from social network analysis. A network involved in the Erasmus Mundus masters course may be a hierarchical and horizontal one also in the sense that some members may have informational or other type of power over others.

From an organisation management point of view, networks may be seen as a mode of governance based on relationships, differentiated from the other traditional forms of governing such as hierarchy and markets, and the more recent concept of hybrid governing (Mitronen 2002, 20-21; Håkansson and Johansson 1993; Ouchi 1980; Williamson 1996). Despite this differentiation and the claims that networks are non-hierarchical by nature, networks are not replacing or substituting the other forms of governance, and the organisations forming a network may themselves still be hierarchical.

Networks as Processes

When not focusing on social networks, most networks have processes and functions and their main aim is to work for a purpose. Different network organisations strive for different purposes. Agranoff's (2007, 43) research question on the processes networks engage in order to reach agreement and make decisions, has led him to classify networks into four categories. Firstly, *information networks* which exchange policy and programme information, which may lead to action. Secondly, *developmental networks* which engage in the same as above, but also build members' capabilities. Thirdly, *outreach networks* which also blueprinting inter-agent strategies, and fourthly, *action networks* that have all the characteristics of the previous networks, but in addition make policy or programme adjustments.³

In Agranoff's view, the main difference between the three first and the fourth network type is based on actual decision making capabilities of the network vis á vis the home organisations. Here decisions should be differentiated from non-decisional agreements and understandings (2007, 44-48). Based on the four-fold network type definition Agranoff (2007, 45) has specified the actions and decisions of networks into nine types:

1. Information exchange
2. Agendas / network work plans

³ Similarly Bienzle et al. (2007, 15) categorise networks into the following functionally derived five categories: *exchange network*, *support network*, *interest representation or advocacy network*, *result-oriented network* and *process oriented network*. These categories are based on the nature of the relationship of members in the networks and on the primary thing exchanged between the members.

3. Reports / studies
4. Forums / enhancement and assistance
5. Web link information systems development
6. Strategic blueprint /fund leveraging
7. Plan review
8. Mutual policy / programme adjustment
9. Network policy-making

Some examples of these network actions and decisions may be useful in understanding the categorisation. Information exchange may include official and unofficial meetings. Network plans could include such documents as a joint (mutually defined) education agenda (curriculum) or research plan. Reports include reports made to third parties on the network's performance and also other reports and studies for external and internal use. Forums, enhancement and assistance are more difficult to define as distinguished from formal information exchange meetings. However, the idea of forums of enhancement is related to the network members' learning and capacity-building. Adrie Dassen (2010) links the proliferation of policy networks as policy instruments to the shift from government to governance. Policy networks can be seen as “platforms where actors from various sectors and sub-sectors interact” in public policy-making (12). As policy networks may be policy instruments for the government. In this frame of reference the Erasmus Mundus networks could be seen as actors in larger higher education networks, whether national, European or international.

2.5 Coordinating Networks

When analysing the actual actions and decision-making in networks, or what may be also referred to as the management and coordination of networks, it should be noted that it is not necessarily possible to find one mode of management. As suggested by Mitronen (2002, 27) network operation combines the managing of the network, but also of those organisations participating in the network. With a hybrid approach that combines different modes of management it is possible to combine the management of the centralised and decentralised functions. It could be stated that networks combine different levels of management, that of the network itself and those of the organisations involved, and this requires coordination. The management power and control in the network may be constituted differently: there are usually selection criteria for participants; there are rules and regulations specific for the network; there may be a division of tasks where all partners are assigned responsibilities and also resources; and the network operations require evaluation (Bienzle et al.

2005, 15-16). It is mostly the coordinator of the network who coordinates the network operations and manages the functioning of the network.

In the Anglo-Saxon tradition of network analysis, networks are seen to convey interests in certain fields of policy-making, whereas in the German tradition, networks are seen as an alternative for hierarchical or market-oriented management (Blomqvist 2007, 59). I will to some extent follow the latter strand of thought of a democratically organised and consensus-seeking network.

Despite the focus of many network theories on the democracy of the network structure, there still remains a certain level of hierarchy, as one actor in the network functions as the coordinator. In the case of Erasmus Mundus networks the way the coordinator has been selected remains to be defined according to the data gained from the particular networks. It is possible that the coordinator initiates the cooperation and selects or recruits the partners. Similarly there may be a looser cooperation from which the network emerges and the coordination responsibility may be assigned due to practical reasons. The way in which the roles and positions of the actors in the network are defined will most likely affect their power and influence in the network. Thus in order to discuss the coordination of networks it is fundamentally important to shortly define coordination. Although coordination may be traced all the way back to Henri Fayol's classic management theory based on six primary functions of *forecasting, planning, organising, commanding, coordinating* and *controlling*; and to Henry Mintzberg's well-known set of coordination mechanisms, coordination has more recently been associated also with networking (Lorenzen 2002).

Generally, coordination may be seen as the activity of organising actions of different actors so that they fit together in a complex organisation. The actions are mutually dependent and needed to reach the goal set by the organisation(s) or network. The main purpose of coordination is to control the different actions and to thus reduce undesired variation. (March and Simon 1964; Thompson 1967; Mintzberg 1983; Melin and Axelson 2005). In Mintzberg's (1983) classic definition there are six coordination mechanisms: *mutual adjustment, direct supervision, standardisation of skills, standardisation of work processes, and standardisation of results* and *standardisation of norms* (see also March and Simon 1964).

In network cooperation, *mutual adjustment* is mainly seen as informal coordination where individuals (or sometimes even organisations) adapt their interdependent actions to each other's needs. The control and responsibility of the coordination rests on the operative level, on the actors

themselves. (Mintzberg 1983, 2-4; Melin and Axelson 2006, 4). This first coordination mechanism would be the most likely one allowing a democratic and informal mode of coordination, which depends mostly on personal relationships. In this kind of approach the possibility that the coordinator would have a hierarchically superior position is not assumed.

Mintzberg's *second* mechanism, *direct supervision* is usually defined as some-one in the organisation having responsibility to manage, instruct and monitor the action of others. In a network, it is possible that the coordinator assumes the responsibility of supervising the action of partners, however, this would imply a hierarchical structure not generally associated with the qualities of networks. It would also be reasonable to question whether the coordinator has power, through incentives or sanctions, to ascertain that the partners' actions comply with the supervision.

In the *third* coordination mechanism, *standardisation of work processes*, actions are standardised so that there are specific instructions on how to perform certain tasks. This kind of standardisation may take place to some extent when the often occurring processes of the network become routines and the practices may even be documented for the use of the particular network or as more generalised instructions applied to similar networks and the coordination of their processes.

The *fourth* coordination mechanism, the *standardisation of work outputs*, is based on defining the expected results, whereas the actions to reach the goal are not defined. In network cooperation, this kind of standardisation is quite unlikely.

The *fifth* mechanism of coordination is the *standardisation of skills*. If the required skills and training of the actors are specified, the mechanism of coordination focuses on the persons qualified and capable of carrying out the tasks.

The *sixth* coordination mechanism, added later than the others, is based on the *standardisation of norms* that establish common values for the actors. This coordination mechanism is a culturally-based, social and indirect way of influencing the actors, thus it is also very difficult to examine in case examples. (Mintzberg 1983, 2-4; 1998; Melin and Axelson 2005, 4).

When utilising these coordination mechanisms as a starting point for analysing network action and decision-making, there is need to focus on the process of coordination and to specify in each case "who is coordinating, being coordinated, and what actions are performed when taking part in

coordination situations.” (Melin and Axelson 2005, 7, 9). Similarly there is a need to take into account the context of the coordination, in this case the network and thus the organisations forming the network. It has been criticised that Mintzberg’s coordination mechanisms are not always compatible with modern organisational structures, such as networks, but “tend to focus on a formal division of labour, stable organisational structures and roles, and planned coordination” (Melin and Axelson 2005, 8).

This scepticism on the compatibility of coordination mechanisms and managing networks is supported by Mark Lorenzen. According to him, coordination in networks does not require extensive coordination mechanisms, as networks are based on trust (2002, 14). This refers to both trust between persons, “*interpersonal trust*” and trust between organisations more generally, “*interorganisational trust*.” Networks are based on “reciprocal” and “mutual trust” so that all members trust the other members of the same network (direction of trust). In this kind of ideal case, if the trustee is trustworthy, the trust is warranted. (Lorenzen 2002, 17-18). However, from the point of view of examining coordination, it is useful to define some coordination mechanisms and problems related to them.

Organisations which share similar interests, but are specialised in a complimentary way, may benefit from “network capabilities” such as scale benefits, interorganisational communication and learning, which make them competitive compared to other organisations (Lorenzen 2002, 18). Uncertainty is one of the main problems in networking and causes coordination problems, thus the main act of coordination is related to “*lowering uncertainty*, though aligning agents’ incentives and/or expectations.” In the context of a network, uncertainty may be lowered with “institutional arrangements” and the strengthening of ties by formal or informal ways (Lorenzen 2002, 19; Granovetter 1973). Informal incentive alignment can be done by creating “mutual dependencies” and “shared interests in cooperating” (Lorenzen 2002, 20; Granovetter 1973). The coordination mechanisms applied in informal network strengthening are relatively difficult to study, whereas formal network coordination is easier to examine. A formal type of institutional agreement, which lessens uncertainty, may be an agreement (written contract), where the duties and responsibilities of each partner in the network are defined as in the network typologies where networks are perceived as structures and positions (Axelsson and Easton 1992; Möller and Wilson 1995, 587-613; Mitronen 2002, 28).

When considering the connections of coordination and networks, there is one more term to be considered: “*cooperation*.” According to Bienzle et al. “cooperation represents the working ties between individual actors” whereas “coordination can be understood as the fine-tuning or the targeted alignment of actors.” Here the difference is in that coordination is more target-aimed, whereas cooperation simply defines the relation between actors. From the point of view of networks, autonomous and thus separate actors are linked to one another through ties and form a horizontal, heterarchical structure without a centre. Networking thus refers to a large number of cooperating and coordinated partners. Whereas, “cooperation refers to the working ties of individual organisations.” (Bienzle et al. 2007, 14). Despite these definitions, these distinctions are not clear-cut, and it could be said that both cooperation and coordination occur in networks, but cooperation may also exist outside network structures.

All networks need to be organised, despite their (seeming) democracy, voluntariness and mutual trust. There is need to define the network structure, the members of the network, how they may become members and if there is a leader/coordinator, which initiates network action and regulates the network in terms of its structure and functioning. According to Bienzle et al. networks are not replacing hierarchical structures with heterarchical ones, but are often coordinated with hybrid control patterns (2007, 14-15). If there is a coordinator in the network structure this entails a certain amount of hierarchy. The coordinator has power over the other members and thus also an endogenous difference in the position and power compared to the other members.

Written contracts may not cover all possible network functions and future changes, whether initiated in the network or caused by external environment. “Specifying the terms of future cooperation too narrowly may also hamper the development and learning potential of a network relation” (Lorenzen 2002, 20). It is important to keep the network and its members flexible enough to be able to adjust to changes and to adapt their behaviour if needed. National legislation may be a form of coordination that effects the institutional environments of the network partners, but it is not an efficient way of coordination in aligning incentives, but often quite the contrary (Lorenzen 2002, 21). In addition to written contracts as a part of safeguarding cooperation, “specified monitoring mechanisms” may be utilised (Lorenzen 2002, 20). They should be specified by the network or the coordinator themselves.

There are also other coordination issues related to network members having differing incentives, differing expectations about each other or asymmetrical information. All these may be categorised

as *cognitive coordination problems* (Lorenzen 2002, 19; Lorenzen and Foss 2002). Cognitive coordination is best realised in the state of mutual trust, which may be accomplished by means of “communication” and “sharing information” (Lorenzen 2002, 21-22). It is noteworthy that communication and sharing information is the main function of one of the network categories, the “*information network*,” also known as the “*exchange network*” However, communication and information sharing are essential to all types of networks. (Bienzle et. al. 2007, 15; Agranoff 2007, 43). Despite its mostly beneficial effects, mutual trust as a coordination mechanism may become so dominant, that it closes the network from entry or change (Lorenzen 2002, 23).

To sum it up, in networks there may be two types of *interorganisational coordination mechanisms*: *incentive coordination* mechanisms, based on contracts, monitoring and mutual dependencies, and *cognitive coordination* mechanisms based on networked trust. The mechanisms may also be typologised as *formal* and *informal coordination* respectively. (Lorenzen 2002, 24).

2.6 Networks in Higher Education

Generally there are relatively few examples of network theories being applied in higher education research and programme research. This is somewhat surprising, as international cooperation and networks are not a completely novel phenomenon in higher education, and they have recently proliferated due to the general shift towards a globalised network society and globalisation of higher education (Castells, 2000; Ottewill et al. 2005). In the post-Bologna era internationalisation has become an essential part of higher education and structurally integrated into the system. Cooperation across national boundaries has become more organised and target-oriented. Networks have become a preferred form of cooperation, because they are structured but relatively loose and flexible.

It is noteworthy that within higher education research, academic disciplines also have a network-like structure. Notwithstanding, the structure of academia is often portrayed through the matrix where the dimensions of institutions and disciplines intersect and specific departments may be found at the junction (Clark 1983). However, the connections within academic disciplines may not be as straightforward as this model leads us to think. Often the connections, identifications and cooperation patterns are formed between people within the same discipline based on personal and research motivated reasons, whereas there may be divisions and animosity within disciplines

because of conflicting or rivalling theoretical views. Thus although there might be a strong identification to the discipline, the bonds and networks may be founded on different premises. They may be categorised according to the degree of subject or disciplinary specificity, geographical coverage or origins (Ottewill et al. 2005).

Although similar characteristics are also reflected in the structural definitions of all networks (cf. Chapter 3), the abovementioned theory may be seen as specific for higher education networks. From the disciplinary perspective, networks may be generic or subject specific. Their geographical coverage may vary from local to global and the origins of the network depend on the reasons and conditions under which the network was established. (Ottewill et al. 2005). Most higher education networks are established voluntarily and based on the initiative of academics, who want to communicate and collaborate together on the basis of common interests often related to a disciplinary perspective. It is possible that focusing on the disciplinary dimension “can lead to an erosion of parochialism and introversion coupled with a shift towards the sharing of ideas and joint activities” (Ottewill et al. 2005). Most (disciplinary based) higher education networks are concerned with academic practice, including “curriculum design; learning, teaching and assessment; and quality assurance” (Ottewill et al. 2005). Based on these definitions it may be inferred that Erasmus Mundus masters courses and consortia have several characteristics typical for educational networks, as will be manifested in the following.

Erasmus Mundus Masters Consortia as Networks

Erasmus Mundus masters courses are implemented within a consortia or a network of various institutions. In this research, network theories are applied to define the inter-organisational network that is involved in the Erasmus Mundus masters course. The Erasmus Mundus programme framework enables and restricts the ways in which it is possible to act within network.

In many ways the network is a self-regulating system. According to Gareth Jones “a network structure is a cluster of different organisations whose actions are coordinated by contracts and agreements rather than a formal hierarchy of authority” (Jones 2004, 187; Lorenzen 2002). Thus the kinds of contracts the Erasmus Mundus masters courses have should be analysed to understand the ways in which the networks are coordinated. The presupposition is that networks do not have an (formal) authority or hierarchy, however, networks still need to be planned, organised and to function. In addition, the reasons for creating networks vary from increasing effectiveness, partners having specialised skills, allowing more flexibility through organic activity (Jones 2004, 187; 188).

These aspects derived from network and coordination theories are relevant when analysing Erasmus Mundus masters courses.

From the practical perspective, managing relationships within the network is nowadays often based on modern information technology (Jones 2004, 188). This kind of technological networking contributes particularly to information exchange and dissemination common in networks. This may be supported with cooperation, such as conference organisation or publication (Ottewill et al. 2005). The exchange of information may also lead to the second and related action of knowledge creation (Ottewill et al. 2005 quote Duke 2002, 32-33). According to Ottewill et al. (2005), both of these functions are present in all of the networks funded by the European Union, but in addition to this, he claims that EU funded networks are involved in the process of policy-making and implementation. From this point of view it may be claimed that all the nine decision making typologies and the characteristics of the fourth network type are already inscribed into the Erasmus Mundus programme. Erasmus Mundus masters courses could thus be defined as *process-oriented action networks*, which engage in all the nine actions including policy-making (Bienzle et al. 2007, 15; Agranoff 2007, 43, 45). This presupposition will be evaluated when analysing the European Parliament and Council's establishment decision of the Erasmus Mundus programme and the first call for masters courses. In the actual analysis of the interviews both the restrictiveness and flexibility of the framework offered by the programme call will be evaluated base on the information provided by the actors themselves.

3 METHODOLOGICAL APPROACH

This chapter constitutes the empirical part, where the topic of research, collection of data, methods, analysis, the reliability and validity of the research, are discussed. The research will employ the method of case study encompassing a qualitative approach consisting of document analysis and thematic interviews. The method applied in analysing the data is content analysis. These are discussed in detail in the following subchapters.

3.1 Case Study

Case studies are perceived as one of the research genres in qualitative research methods, although it is possible to use quantitative data in case studies (Marshall and Rossman 2006, 3; cf. Yin 2003, 14). This study is placed within the tradition of qualitative research and no quantitative data is utilised. Case study may be defined in more detail as “an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin 2003, 13). Case study is one of the best suitable methods in research posing “how and why questions” on contemporary phenomena with “real-life context” (Yin 2003, 1, 5). Case study as a methodology covers all aspects of the research from formulating the research questions to data collection and analysis. Thus the important questions include: “How to define the case being studied, how to determine the relevant data to be collected, or what should be done with the data, once collected” (Yin 2003, 2).

Choosing the units of analysis for a descriptive and explanatory analysis of Finnish Erasmus Mundus masters course coordinators is relative easy as there are a limited number of such masters courses. Similarly selecting the individual people to be interviewed may also be reasonably justified. However selecting the supporting documentation for the background analysis requires limiting and sampling of the analysed data. It should be borne in mind that the unit of analysis (and thus preferably of observation) remains as the coordinators of the masters course and individual interviewees representing the academic and administrative coordinators. The selection of the sample (at least of the interview data) is thus already stratified and systematic (cf. Babbie 2004, 315, 318).

Studies focusing on a theme, such as a programme or organisation typically are based on a case study. Such studies usually rely on data collected through direct observation and/or interviews of the persons involved, but may also include written data such as documents (Yin 2003, 8). The size of the interview sample size may vary, but in case studies it is commonly smaller than other methodological approaches utilising interview data (Marshall and Rossman 2006, 55, 63). The data collected from different sources converges in a triangulating way and there often is a theoretical framework guiding both the collection and analysis of the data (Yin 2003, 14). Similarly in this research, network theory is chosen as the framework for a theory-driven analysis of coordination in Finnish Erasmus Mundus masters courses.

Case studies can be based on single or multiple cases. Multiple-case studies may be of a comparative nature (Yin 2003, 14, 39). In addition, it is possible to define between a holistic and an embedded approach both in single- and multiple-case studies. This difference is mainly based on that holistic studies analyse only one or several different units, but in embedded studies there are sub-units in the case or cases studied. (Yin 2003, 39-40) For example, in this research it might be possible to consider the Erasmus Mundus programme as the case under investigation, and then the two masters courses would form the subunits of analysis. Similarly the interviewees as individuals are subunits of the masters courses.

Yin foresees a problem in such a single-case embedded approach, if the study focuses on the subunit level and fails to return to the unit level. “For instance, an evaluation of a program consisting of multiple projects may include project characteristics as a subunit of analysis... However, the original evaluation becomes a project study (i.e. a multiple-case study of different projects)” (2003, 45). In this light, I believe it is more accurate to describe this research as a multiple-case study where the two Erasmus Mundus masters courses and their coordinators constitute the cases. The study is an embedded multiple-case study, as the different individuals interviewed constitute the subunits of the cases. When defining the units of analysis, the cases were limited to only the Finnish coordinators, and specifically the masters course-level coordinators, although for both cases an expert from the central administration level, named by the masters course coordinators themselves was included in the interviewees. This definition of the units and subunits of analysis was also based on the research questions that were set (cf. Yin 2003, 23).

With a multiple- or even two-case approach there are two logics of research “replication,” which aims either to predict similar results for the cases, or contrasting results between the cases. Usually with two to three cases the aim is to predict similarity i.e. “literal replication.” This kind of replication requires a rich theoretical framework, which states the conditions under which a particular phenomenon is likely to be found. (Yin 2003, 47). In my study the Finnish context that has an effect on the coordinators of the Erasmus Mundus masters courses already sets the stage for similar results, however, it might be anticipated that the two different universities affect the masters course coordinators differently and thus cause contrasting results. Despite some differences, I would anticipate that the cases are more similar than different and that literal replication is to some extent possible.

3.2 Document Analysis

The research will be based on general background information gathered through document analysis, where documents provide the context of the research (Marshall and Rossman 2006, 107). The documents will include, for example, primarily calls and instructions from the European Commission on joint degrees, but also the Bologna Declaration, Lisbon Strategy, and other relevant documents, national instructions and recommendations (by the Ministry of Education and Culture and the Finnish National Board of Education) are utilised when needed. The masters course-level agreements, consortia agreement and agreements on degrees (such as Joint Degree Agreement, Memorandum of Understanding) and institutional regulations and practises related to organising joint programmes. Document review is often already associated with the analytic approach of content analysis (Marshall and Rossman 2006, 108).

In addition to the documents related to the European Commission, general European-level documents and national documents, I have analysed masters course specific documents, such as consortia agreements and contracts, study plans, masters course web-sites and institutional level instructions and recommendations for the Erasmus Mundus programme. When I contacted the masters courses to agree on the interviews, I asked them to provide primarily masters course-level documents regulating the functioning of the consortia and network. I left it to the discretion of the interviewees to provide the written material (documents, internet links) they deemed suitable. Thus I did not require the same documents for both masters courses studied. It is also worth noting that the masters courses would not necessarily even have the same documents, as there are no formal

instructions on a national or European-level defining what internal documents should be prepared in an Erasmus Mundus consortia.

The documents will be analysed with the help of content analysis, although my aim is not to analyse this material thoroughly, but to review it, in order to gain sufficient background information for the masters course-level interview data gathering, through this unobtrusive method (Marshall and Rossman 2006, 107). Together with the understanding of the joint educational programme, Erasmus Mundus and the theoretical networks models, I have defined a theoretical framework from which the main research questions are derived.

3.3 Thematic Interviewing

With the theoretically based framework in mind, it is possible to define the structure and the questions of the thematic interviews for acquiring the actual empirical data. All data analysed in this research is qualitative and empirical. In addition to analysing documents, I conducted semi-structured interviews with relatively broad thematic questions. The interviews were carried out with self-identified key persons of the Erasmus Mundus masters courses. In interviews it is possible to gain different insights of the masters course as a network. From an interpretive constructivist approach it may be expected that people see things differently and therefore multiple and even conflicting versions of the functioning of the network within the masters course may be true at the same time (Rubin and Rubin 2005, 27). As the aim is to describe and uncover the coordinators' perspective, it is the subjective view what matters (Marshall and Rossman 2006, 102).

There are three general categories of interviews (Marshall and Rossman 2006, 101). Firstly, informal and conversational interviews; secondly, the general interviewer guide approach; and thirdly, standardised, but open-ended interviews. My aim was to structure the interviews with thematic questions, but to leave the themes open-ended and to keep the interview situation informal and conversational to allow the interviewees perspective (the emic) to emerge, rather than superimposing my own perspective (the etic) and thus influence the outcome of the interview (Marshall and Rossman 2006, 101). The interviews were semi-structured and the thematic questions relatively broad in order to leave the situation as open-ended as possible (Rubin and Rubin 2005, 4). Despite this, there might be need to develop *probes and follow-ups* in addition to the *main*

questions, although most of the follow ups and probes will arise in the interview situation in a responsive manner (Rubin and Rubin 2005, 13, 15).

The process of qualitative interviewing includes preparing, conducting, interpreting and reporting in-depth. Qualitative interviewing is a particularly suitable approach when the questions explored in the research cannot be answered in a simple way. Qualitative methods can best be applied in describing social and political processes and change. (Rubin and Rubin 2005, 2, 3). For the above-mentioned reasons information collected through interviewing seems appropriate in examining a multifaceted phenomenon such as a joint programme.

The interviews focused on the masters course-level and the interviewees were academic and administrative personnel at Finnish universities involved in the coordination of an Erasmus Mundus masters course. The coordinators of masters courses that have been running during the first EM phase (masters courses selected 2004-2008) were selected as masters courses selected for the second phase (2000-2013) would not have actual experience of coordination. Taking into account these limitations, two Erasmus Mundus masters courses coordinated by Finnish universities during the first EM phase were selected.⁴ In addition to the coordinating personnel of the masters courses, I have interviewed central administration level administrators involved in the selected courses, to reflect the institutional level views.

The interviews were mostly carried out as one-to-one personal interviews. As the researcher I carried out all the interviews personally by going to meet the interviewees at their work place. When this was not possible a phone interview was chosen as the second most preferred option. The thematic structure of the interview was sent to the interviewees beforehand although the actual discussion on the themes should be situational and unfold naturally during the discussion. (Rubin and Rubin 2005, 13). In order to test the interview questions I conducted a pilot interview with the administrative coordinator of the European Master in Higher Education (HEEM) masters course at the University of Oslo. Based on the pilot with planning officer Sanja Mursu I made some

⁴ During the first phase of Erasmus Mundus there were 11 masters courses with Finnish participants selected between 2004-2008 and organising masters courses between 2004-2010. Of these courses two had Finnish coordinators. Selected after the first call for proposals in 2009 for the second phase of Erasmus Mundus (calls for proposals 2009-2013 and organising of courses during 2009-2015). In total there were 15 masters courses with Finnish participants running in 2010. Of these courses three have Finnish coordinators. These include Master of Science in European Forestry; NordSecMob - Masters Programme in Security and Mobile Computing and European Masters in Sport and Exercise Psychology, University of Jyväskylä.

adaptations and improvements to the interview questions before conducting the actual research interviews.

The raw data (recorded files of the interviews) was processed in the transcription (a written text). The interviews were transcribed avoiding a purely technical approach, but bearing in mind that it already entails some level of judgement and interpretation. (Marshall and Rossman 2006, 110). In addition, to the transcription, there was need for translation as the interviews were conducted in Finnish, but the analysis will be presented in English. The most relevant parts of the interviews, referred to in the analysis were translated. I have chosen not to use direct citations excessively as translated quotes cannot be considered strictly direct. It is noteworthy, that the process of transcription and translation in particular entail certain problems for the interpretation and also to the way the data will be made available for others to evaluate. The aim is to create “accurate and meaningful data through translation.” It should be clearly indicated in the analysis that all the interview data are translated whereas the programme and masters course-level documents are originally written in English. I also feel that, because of the complexity of interpretation, it is best that I as the researcher carry out the interviews, transcription and translation myself (Marshall and Rossman 2006, 111).

This study aims to provide empirical evidence of the networking of an Erasmus Mundus masters course and the data used has been collected primarily for this research project. Thus the data has not been collected beforehand and utilised in an ex-post manner (Rihoux 2006, 681). The logic and economy of research are taken into account in the ways that the data has been chosen for analysis.

The actual interviews were carried out in June 2009, by visiting the University of Joensuu⁵ and interviewing two administrative planning officers, one academic coordinator and the Head of international affairs and by visiting the Helsinki University of Technology,⁶ in Espoo and interviewing two administrators (coordinator and project secretary) and the Head of international student affairs. Due to the schedule of the research, the interview of the professor at the Helsinki University of Technology was not conducted in person, but as a phone interview in September 2009. The interviews were recorded in mp3 format and additional written notes were made during

⁵ The University of Joensuu was merged with the University of Kuopio on January 1st 2010 to form the University of Eastern Finland.

the interview discussion. The information on the interview schedule and the themes for the interview discussion are presented in Appendix 2.

It was pivotal for the success of this research that both the academic and administrative staff was willing to cooperate and participate in the research. Before the interview discussions I had familiarised myself with the general publicly available masters course information and the official documents provided to me by the masters course coordinators. The interviews were conducted in a manner of discussion, but giving space and time for the interviewees to present their views on the broad themes. In relation to some of the themes, I had some preconceptions based on the written document material provided to me beforehand. Occasionally I referred to those document materials and asked comments on basis of the documents on certain topics. However, the document material seemed to provide a slightly different perspective to the themes than the interviews. This will be discussed in the analysis.

From the perspective of ethical considerations, it would be virtually impossible to conduct the interviews anonymously as there are so few Erasmus Mundus masters courses internationally and particularly in Finland. As anonymity could not be guaranteed, the masters courses selected for the analysis needed to allow the utilisation of their information in the research and thus commit to openness. The interviews are identified with information on name and position in the organisation. There is need to have the consent and confidence of the interviewees at an early stage of the research. In this case the masters courses themselves will evaluate the benefit of participating in the research. The masters courses may also benefit from participation as the results may be used as a part of the self-evaluation of the masters course.

Due to my own experiences with Erasmus Mundus, it was possible to relate to the key persons interviewed. In order to make the interview data and the interpretation understandable and transparent, it is of great importance to make visible my own positionality both as a researcher and an insider (Marshall and Rossman 2006, 30). Despite the presumption of the network models explaining the Erasmus Mundus masters course and its cooperation, decision-making and management, I tried not to let these hypotheses guide the interview themes and questions. According to the varying views on the positionality of the researcher, presented by post-modern and

⁶ On 1 January 2010, Helsinki University of Technology became a part of Aalto University and was renamed 'the Aalto University School of Science and Technology'. The Aalto University was formed by merging TKK, the Helsinki School

feminist theorists among others, my position as an university administrator involved in the planning of an Erasmus Mundus masters course can be seen both as a benefit and hinder. Thus I needed to bear in mind my positional relationship during the interview, analysis and writing processes. Sandra Harding perceives “strong objectivity” as a goal in research, through which the researcher is able to position herself and make the limitations and restriction of the research visible. The position of the researcher as a knowing subject can be defined in relation to the social position of the researcher, and the research community in the discussion of which the researcher participates in. In addition, the identity, corporeality and emotions of the researcher affect the situatedness and the research (Harding 1998, 18, 124; Rubin and Rubin 2005, 25; Marshall and Rossman 2006, 30, 5-8).

In the ideal case, because of my explorative knowledge on Erasmus Mundus, the interviews may result in the sharing of meanings between equals and personal involvement may become a great strength (Rubin and Rubin 2005, 31). The interviewees should be viewed as partners, and the inter-subjective relationship between the interviewer and interviewees is important (Rubin and Rubin 2005, 12). The aim is to conduct a thematic and topical scheme for interviews with room for interaction, learning on-site and dialogical inter-subjectivity (see Rubin and Rubin 2005; Marshall and Rossman 2006).

According to the two dimensions of qualitative interviewing, breadth of focus and subject of focus, I anticipated that the interviews could be placed in the matrix according to the axes of focusing mainly on events and processes and having a rather broad focus. Thus my interviews could be categorised as elaborated case studies, however, in order to move beyond the descriptive level, I hope to examine also the meanings and frameworks on the subject level. Choosing two Erasmus Mundus programmes as cases may reveal themes on a more general level about joint educational programme networks (Rubin and Rubin 2005, 5, 6, 7). On a certain level this research also approaches evaluation or action research in evaluating whether the different network models may indeed be utilised to understand the structure and functioning of the Erasmus Mundus programme and even aiming to suggest possible ameliorations to current practices (Rubin and Rubin 2005, 9).

3.4 Content Analysis

According to the practices of content analysis, the interviews are systematically analysed immediately after they are conducted, and the information gained from the analysis is utilised in the preparation for the next interview, thus alternating interviews and analysis during the research process (Rubin and Rubin 2005, 16). In addition, the pilot interview helped in formulating the questions and topics in more detail.

The analysis will begin from theory-driven content analysis based on the analytical framework of networks and different models of networking. Content analysis, which may be utilised for the study of any recorded human communication, is a suitable approach for both documents and interview data. Analysing the documents and interviews on Erasmus Mundus masters courses requires the operational definitions of the key variables of study, the network typologies and the coordinators functions (such as planning, decision-making and so on). (Babbie 2004, 314). Typologies of networks and network functions based on organisational network theory suggest empirical indicators of concepts that may be identified in the data (Babbie 2004, 320).

Babbie (2004) sees the questions of what is communicated, why and to with what effect as the most crucial aspects of content analysis (314). Another categorisation should be done based on substance, defining key words, ideas and themes (Rubin and Rubin 2005, 13). Content analysis is perceived as classifying the sentences and typologising them so that the evidence disseminated from the gathered data represents the corresponding typological categorisation. This should be done with respect to the richness of the data and not by categorising it into too rigid categories. Resulting from the interviews the collected data should consist of *thick description*, deep, detailed and rich in content and in which in the analysis phase is gathered and synthesised (Rubin and Rubin 2005, 13). The sampling of the data should be done on the conceptual level appropriate for the analysis (Babbie 2004, 318). The interview data is primarily coded and classified according to the conceptual framework of theoretical network models (Babbie 2004, 318). Coding may be done based on manifest, visible content or the latent, underlying content. It is advisable to employ both codings, but also to state the premises behind the latent codings (Babbie 2004, 319).

I believe that content analysis is suitable primarily for the categorisations of the different forms of networking and coordination. A deeper level of analysis may be found through applying theoretical

models of network processes and functions to the data. Although, content analysis may be used in “obtaining a qualitative description” of qualitative data by, for example, “counting the mention of specific items” (Marshall and Rossman 2006, 108). I will not do this, but rather focus on particular key words (such as coordinator, coordination, consortia, cooperation, partnership, decision-making). The selecting of the relevant and interesting parts in the interviews, also known as “coding” is a crucial part in defining the supposedly most relevant parts of the data (Potter and Weatherell 1987, 169; Gough and McFadden 2001, 52).

Admittedly there is no standard method for analysing the selected parts, but I will utilise an approach, which is grounded on “textual evidence” acknowledging simultaneously the possibility of alternative interpretations (Gough and McFadden 2001, 52). The analysis should be meticulously depicted and the interpretations written out in order to show how the interpretation was reached, to avoid the impression of over-imposing one’s own interpretations. Significant passages can be teased out also by looking at variability and consistency in what is said, but also by considering what is silenced. The researcher can rely on a “broad theoretical framework, which focuses attention on the constructive and functional dimensions,” but in addition, skill is needed in “identifying patterns of consistency and variation” (Potter and Weatherell 1987, 169). However, it should be borne in mind that the logic of interpretation used in inferring meaning needs to be provided, so that readers can evaluate the soundness of the analysis (Marshall and Rossman 2006, 108).

Through the analysis, it will be possible to extract findings answering to the research questions that are developed into results through interpretation. The findings and results of the analysis will be presented to the interviewees. In addition, it might be possible to utilise a focus group, such as the persons involved in Erasmus Mundus masters courses in Finland in a regular meeting for Erasmus Mundus masters courses arranged by the national structure, the Centre for International Mobility (CIMO) to discuss the findings in a more general group of experts. Face validation will allow the interviewees to evaluate the data collected and lets them confirm or disclaim the results. The testing and triangulating of the (tentative) findings will make it possible to check that the interpretations made through the analysis are not biased. This takes us further into the questions of reliability and validity of this research.

3.5 Considerations of Reliability and Validity

When considering the limitations of the choice of a particular method, its trustworthiness or reliability and theoretical validity, it should be noted that all methods entail their own limitations. It could be said that reliability refers to the methodological trustworthiness of the research and validity to the applicability of the utilised theories. The questions of reliability and validity in qualitative research need to be approached differently than when dealing with quantitative research. In quantitative research reliability and validity are based on positivist or scientific paradigm, where the results are replicable, stable, empirically objective and factual (Golafshani 2003, 597-599). Whereas, in qualitative research, the main concerns are related to precision, credibility, transferability and trustworthiness (Golafshani 2003, 600).

Good qualitative research should demonstrate good quality (Golafshani 2003, 601). In relation to the quality of case-studies in particular, Yin specifies four conditions: construct validity, internal validity, external validity and reliability (2003, 19). Internal validity is important only if the study has an explanatory or causal nature, and it aims to show the causal relationship between conditions of the case studied. (Yin 2003, 34). This is not a relevant consideration for my study, thus I will not consider it in more detail. Construct validity refers to the “correct operational measures for the concept being studied” such as using multiple sources of information and having the key informants (interviewees) read and comment on the analysis. External validity is related to the use of theory and the research design, but also to the extent to which the findings may be generalised. Reliability may be secured by following “case study protocol” in data collection. This protocol includes the reporting of the data collection process so that, in practice, it may be repeated on the same selected cases with the same results. Thus it is worth noting that the aim for reliability does not imply that the researcher should aim to find “representative” cases to study (Yin 2003, 34-39 see also Golafshani 2003, 603, sites Patton 2001, 247).

Triangulation may be used to test the validity and reliability of the analysis. This may be done by using multiple sources of data or by allowing the participants to participate in the data collection and analysis, for example by commenting on the analysis of the data and interviews. My research follows these lines, and employs both written data collected from different sources and interview material. In addition, the analysis and findings are sent to the interviewees for face validation. (Golafshani 2003, 603, 604).

Although the aim is to take all these aspects into consideration, Babbie warns that the choice between depth and specificity of understanding often represents a choice between validity and reliability (2004, 319). Analysis based on qualitative data gathered through interviews aims to give a deeper understanding of the particular case. Whereas, specificity might more easily be gained through a larger survey sample. It is obvious that findings of a case study might not be reliable in a broader context and thus should not be generalised or transferred to other contexts without caution. External validity is not aimed at.

The chosen two cases are separate and should be treated as individual cases, although they allow for some possibilities of comparison. Generally it is believed that multiple-cases, and even two-case studies, are more valid than single-study cases (Yin 2003, 19, 53). It is difficult to determine whether these cases are unique or typical representatives of Erasmus Mundus coordinators' views on the masters course. To some extent they might be considered unique in the sense that they are the only ones set in the Finnish national context, thus far. According to Yin, case studies "are generalisable to theoretical propositions" so that they expand theories through analytical generalisations (2003, 10). The set of results reached in this study may be generalised into certain aspects of network and coordination theories (cf. Yin 2003, 31-37).

4 ERASMUS MUNDUS MASTERS COURSES AS NETWORKS

This chapter presents the main findings of the analysis based on the framework of network theories and coordination in joint educational programmes. Firstly, I will look at general European Parliament and Commission documents. Secondly, I will move on to the masters course-level and analyse documents of the two chosen Erasmus Mundus masters courses and the interviews of the coordinating personnel. I will try to reflect the European Commission's expectations of the form of network the Erasmus Mundus consortia should form. The network functions and decision making is analysed on the masters course-level, based on the actual consortia documentation and in the information gained by interviewing the personnel in the coordinating institutions. There will be a structural description of the EC level network ideal and the masters course-level networks according to which they are placed in typological categories. The nine different network functions and decisions (Agranoff 2007) form the structure of the analysis, rendering information on the network typologisation.

4.1 Expectations of the European Commission on Erasmus Mundus Networks

The Erasmus Mundus networks may be categorised following the most common categorisation criteria used when describing and analysing networks. With these criteria it is possible to define the general structure of the network and the positions of the network members and the bonds connecting them. Firstly I have analysed the criteria set by the European Commission for the Erasmus Mundus consortia networks⁷, as it is depicted in the EC documentation. These criteria set the framework in which the networks may structure and organise themselves.

The establishment documents of the Erasmus Mundus programme (Decision No 2317/2003/EC) and the annual calls for masters course proposals (2004-2008) give indications on how the European Commission defines networks, what kind of expectations it places on networks, the

⁷ When examining the documents, it should be noted that The European Commission refers to the group of higher education institutions offering the masters course as the “consortium” in its documentation, whereas the term “partnership” is used for the cooperation structure between the Erasmus Mundus consortium and its non-European partners (Call for Proposals EAC/22/04, 5). “Network” is used to refer to previous, wider and less-structured cooperation between higher education institutions: “Higher education institutions forming an Erasmus Mundus Masters Course consortium may already participate in wider networks involving third-country higher education institutions” (Call for Proposals EAC/22/04, 11).

coordinator (and implicitly on the partners), their functioning, coordination and leadership. The annual calls during the first Erasmus Mundus programme period are almost identical, but I have chosen to analyse the first calls as both of the Erasmus Mundus masters courses analysed have been selected in the first years of the programme implementation. I will begin by examining how networks are understood in the European Commission documentation. The different theoretical definitions of networks derived from Axelsson and Easton (1992), Möller and Wilson (1995) and Mitronen (2002) will be utilised as the basis of the four-fold categorisation of networks as *structures, relationships, processes* and *positions*.

4.1.1 Network Structure

The network structures refer to the defined qualities of the network. Related to these structures are the qualities of *size, duration, hierarchy, formalisation, range, division of labour, exclusiveness, subject-specificity, moderation, voluntariness, distance, centrality, betweenness, interconnectedness, equivalence* and *density* (see p.19 for detailed definitions of these terms).

When considering the structural aspects, the *size* of the Erasmus Mundus networks are not strongly regulated by the European Commission, except through minimum requirements of the network: a minimum of three higher educational institutions from three different eligible countries (Decision No 2317/2003/EC, Action 1, 2a; Call for Proposals EAC/22/04, 6). No maximum number of members is defined. Similarly like the masters course consortia, the structural requirement of the *size* of the partnership networks between Erasmus Mundus masters courses and third-country institutions are only defined through the minimum requirement of involving at least one higher education institution from a third-country.

From the point of view of the EC, the *duration* of the network is limited to the five-year Erasmus Mundus contract period, but the consortia is expected to be established prior to application for Erasmus Mundus status, and similarly “self-sustainability” of the network and the masters course is assumed after the programme period. The Erasmus Mundus status is thus occasional, but the network may be occasional or a more permanent structure.

The coordinator carries the responsibility for the application for Erasmus Mundus status, and thus may have the power to include or exclude partners. This sets coordinator in a higher hierarchical position in relation to the other partners. The relationship of the consortium and the EC is also

based on a *hierarchy* where the coordinator represents and speaks for whole consortium and partnership. The network appears to be relatively hierarchic from the agreement point of view, whereas there is more democratic cooperation expected in the implementation of the masters course.

The level of *formalisation* is high in the formal agreement between the European Commission and the coordinator, as the representative of the whole network. The EC does not regulate the formality of the agreements within the consortia and between its members.

In relation to *range*, the general boundaries of the EM programme are defined by the list of “eligible countries” limiting the organising of masters courses to European networks of higher education institutions. The Europeanness of the Erasmus Mundus consortia is also emphasised by referring to the “European added value.” There are no set geographical boundaries for the partnerships, but their *range* is expected to be global with partners outside Europe in contrast to the EM masters course consortia. (Decision No 2317/2003/EC, Action 3, 2; Call for Proposals EAC/22/04, 7). The recruiting of best students and visiting professors, should be global in range. The majority of scholarships⁸ are targeted to non-European students and researchers, thus defining the range of participants to non-Europeans. The more detailed boundaries are to be defined by the consortium itself in its application for Erasmus Mundus status.

Although the actual content of the *division of labour* should be defined by the consortia itself, the European Commission expects a clear division of responsibilities and tasks between partners and coordinator.

The coordinator and possibly the partners formulate their internal agreements with each other to form an Erasmus Mundus consortium and partnership. The European Commission expects a certain level of *exclusiveness* in the networks. The networks should be formed by institutions that are of high quality and are specialised in the subject area of the consortia. Although, the overall high quality of the consortia and the masters course are emphasised, the meaning of high quality is not defined in detail.

⁸ There are only small scholarships for European student and researcher mobility outside Europe, intended to be utilised in the partnership cooperation.

Initially the *subject-specificity* of the Erasmus Mundus networks was not defined by the European Commission in terms of academic discipline. In the first calls for proposals there were no preferences on academic field, but the call was open to “Masters Courses operating in all fields of study.” Multidisciplinary consortia and partnerships were also accepted (Call for Proposals EAC/22/04, 7). Later during the first programme period, there were annual priority themes, due to the unequal balance of applications from different fields.

There is external *moderation* of the Erasmus Mundus consortia as the coordinators are expected to report on the performance of the consortia and the carrying out of the masters courses to the European Commission annually. Internal *moderation* is left to the scrutiny of the consortia itself.

The *voluntariness* of network members is assumed as the networks are spontaneously formed. The expectation of a minimum of three members from different eligible European countries may unintentionally guide the formulation of the network. For example, it is most likely that several institutions from the same country will not be included in the consortium.

When considering the expectations of the European Commission, the bonds between the members of the Erasmus Mundus network can be defined based on several different aspects. The *distance* between all members should be short, with direct connections between all network members, so that the coordinator does not have to mediate the connections between partners. Similarly the mediating capacity of any actor in the network should be high, the level of *betweenness* being high. Although the *centrality* of the coordinator is clear from the EC documentation, there should be bonds between all the other actors making them similarly central in their position and connections. The level of *density* defines the number of all possible relationships in a network, thus it refers to the connections of all members to all the other members in the network. The Erasmus Mundus network is expected to be dense. All the partners should hold a similar position compared to each other, with the level of *equivalence* being high. In reality there may arise differences between network members, for example, between degree awarding partners, versus other partners. These findings may be summarised in the following table.

Table 1 Categorisation of Erasmus Mundus networks based on the European Commission documentation

Categorisation criteria (Bieze et. al. 2005; Scott and Davis 2007; Smith-Doerr and Powell 2005).	European Commission
Size	Small to large: Minimum 3, but no official maximum defined.
Duration	Occasional: 5-year Erasmus Mundus contract period. Consortia are expected to be established prior to application for Erasmus Mundus status. “Self-sustainability” after the programme period is expected.
Hierarchy	Relatively hierarchic from the agreement point of view. More democratic in the implementation.
Formalisation	Formal agreement between EC and coordinator. EC does not regulate the formality of the agreements in the consortia.
Range	European for partner universities organising the masters course. Global for students and researchers. Global for the partnerships with non-European universities.
Division of labour	Expects clear division of responsibilities and tasks between partners and coordinator.
Exclusiveness	Agreement between EC and consortia made for 5-years, during which changes in consortia are not allowed without particular procedure.
Subject-specificity	Relatively low: Not specified. May be any field. Also cross-disciplinary.
Moderation	External moderation through annual reporting to the EC. Internal moderation not defined.
Voluntariness	No explicit expectation. Voluntariness assumed.
Distance	Not defined.
Centrality	Not defined. Centrality of coordinator.
Betweenness	Not defined.
Interconnectedness of actors in network	Not defined.
Equivalence	All degree-awarding partners are (implicitly) expected to hold similar and equal position. Coordinator as the head of the masters course. Action 3 partnership partners hold a different position than actual consortia members (masters course partners).

Density	Not defined, but expectation is that all possible relationships (between all partners) exist.
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4.1.2 Network Relationships

Relationships refer both to the bonds between the partners within the consortium and the relation towards the European Commission. Relationships may be further categorised into *economic, legal, administrative, informational, social, and temporal bonds, shared aims, learning, mutual adjustment and adaptation*.

It is clearly stated that the coordinator as the head of the consortium, partnership and larger network has the *economic, legal, administrative and informational* responsibility towards the European Commission. The coordinator should be in charge of all internal *economic* issues and thus have an economic bond to all the partners. However, the other internal bonds between the coordinator and the European and non-European partners are not clearly specified by the European Commission, but are left to be defined or to be formed within the cooperation of the network. Even the *legal* responsibility is only with the coordinator towards the European Commission, whereas, the *legal* bonds of the partners are not defined by the European Commission.

The European Commission defines both the general aims of the Erasmus Mundus programme and its relation to European higher education policy, as well as, some more concrete aims for the Erasmus Mundus consortia and partnerships. The main aim of the Erasmus Mundus programme is stated to be “the development of quality of European higher education, *inter alia*, through cooperation with third countries” (Decision No 2317/2003/EC, 1). There is an implicit assumption that international cooperation with other higher education institutions is a sign of good quality. In addition to bringing about better quality, cooperation has a wider cultural significance. It is stated in the establishment documents of the Erasmus Mundus programme, that “[t]here is a need to step up Community efforts to promote dialogue and understanding between cultures” (Decision No 2317/2003/EC, 14). The high quality of cooperation is defined on the basis of sound cooperation mechanisms, institutionalisation of the consortia, regular meetings, “clearly defined and active role of all partners.” (Call for Proposals EAC/22/04, 17).

All members of the consortia, and to some extent the larger partnership, are expected to have shared aims. The European Commission expects that all partners make adjustment and adaptation of

practices and regulations in order to comply with the framework of the Erasmus Mundus programme.

In addition to high quality, another implied attribute of the Erasmus Mundus programme is its “distinct European added value” (Decision No 2317/2003/EC, Article 3, 2 a). The European added value remains a very abstract requirement, but it might be connected with global competition in higher education, particularly with the American and Australian higher education areas. The expectation of high-quality masters courses creates competition between the different consortia applying for the Erasmus Mundus status for their masters course. This sets European Erasmus Mundus courses in an economic and social context in relation with the rest of the world. The global level of the Erasmus Mundus programme, and its worldwide aims are most clearly manifested in the two actions, which are not directly related to the masters courses, namely actions 3 and 4.⁹

As the call and the actions are primarily directed to the European higher education institutions (coordinators and consortia), the selection of the non-European partner is referred to from the European point of view. The call refers to choosing the right partners: “encourages cooperation with third-country institutions that have achieved a level of development comparable to that of higher education institutions in the Community” (Decision No 2317/2003/EC, 9).

The European Commission primarily gives a *functional* framework for the Erasmus Mundus networks. It does not emphasise the relationships of the members, except the informational relationship and particularly the sharing of best practices. This information sharing is mentioned in two different instances: in relation to joint educational programmes and multilateral cooperation. As it is stated in the decision, “the development of joint educational programmes and cooperation networks facilitating the exchange of experience and good practice” (Decision No 2317/2003/EC, Article 4, 2a). “Need for multilateral partnerships and multilateral mobility and exchanges of information between the Community and third countries” (Decision No 2317/2003/EC, 19). Educational programmes seem more concrete, whereas, multilateral cooperation is only defined as

⁹ Action 3 Partnerships, refers to Erasmus Mundus masters courses cooperating with third-country higher education institutions (Decision No 2317/2003/EC, Article 4, 1c) The cooperation should be based on “structured relations between Erasmus Mundus masters courses and third-country higher education institutions.” (Decision No 2317/2003/EC, Action 3, 1). Action 4 enhancing attractiveness is more abstract including all kinds of efforts to promote European higher education.

several partners on different levels and different positions having similar interests and cooperating in some way.

4.1.3 Network Processes

The functioning of network processes and the structuring of different functions within the network are affected by the equilibrium of stability and change and the effect of external powers. The internal power positions of the network affect resource allocation, exchange of practices and the balance of internal and external competition and cooperation.

The European Commission expects the consortium to define the actual processes and functions of the consortium and partnership. The only expectation of the European Commission is to do with the stability of the consortium and partnership, which are expected to remain the same at least during the Erasmus Mundus programme phase of 5 years. As the programme period is relatively short, there should be minimal need for change due to external powers on networks.

As pointed out earlier, there is no definition of how the cooperation should be structured. The processes of networking and cooperation are not defined by the European Commission, but there are some more detailed instructions on the concrete activities carried out in the partnership. The activities and functions of the partnerships could include outgoing mobility to both directions, teaching assignments, curriculum development, “exchanges of teachers, trainers, administrators, and other relevant specialists,” “development and dissemination of new methodologies in higher education,” “use of information and communication technologies, e-learning, and open and distance learning,” “development of cooperation schemes... with a view to offering a course in the country in question” (Decision No 2317/2003/EC, Action 3, 3). More generally “trans-national partnerships designed to develop innovation and quality in higher education” (Decision No 2317/2003/EC, Article 4, 2d). All of these functions promote the exchange of experiences and best practices between the master consortium and the non-European partners, which is one of the main processes of these larger networks.

The idea of joint educational programmes is depicted on a more concrete level and as a part of the structuring of functions the commission requires an integrated study programme with the following features: “joint criteria for admission and examination,” integrated courses of a “jointly developed curriculum,” student mobility with study periods in partner institutions and most importantly the

“guaranteed award of a *joint*, or a *double* or a *multiple degree*.” Similarly, the degree needs to be fully recognised by the awarding institutions and the national bodies of the participating countries. In relation to all of the integrated aspects of the study programme, the consortia organising the masters course will have to agree and specify the details before the call is launched so that the study programme exists at the time of application. (Call for Proposals EAC/22/04, 8).

Resource allocation is one of the processes depicted on a detailed level. In the consortium the coordinator is in charge of financial resources and their allocation. Whereas on the university level all members of the consortium are required to supply institutional services to the mobile Erasmus Mundus students. The requirement for housing, language courses, visa and social insurance services and so on, are aimed not only to the actual (discipline or unit level) providers of the masters course, but more on the institutional support services (Call for Proposals EAC/22/04, 9-10).

In addition, the consortia and the partner institutions should be adequately academically and administratively staffed and providing additional services for students (Call for Proposals EAC/22/04, 17). The masters course is required to have “appropriate internal evaluation and quality assessment mechanisms” (Call for Proposals EAC/22/04, 16). However, it remains in the discretion on the consortia to agree on them and to adjust them to any existing institutional level evaluation and quality assessment systems.

The award criteria of Erasmus Mundus status is (surprisingly) subjective and it may be questioned what is meant with evaluative terms such as “high quality,” “sound,” “clearly defined,” “adequate,” and so on.

As was already stated in relation to the structure, the European Commission considers the coordinator as the head of the network. Thus in the network hierarchy the coordinator has a higher position in comparison to the other consortium partners. Whereas, in the partnership with the masters course consortium and non-European partners, the consortium is in the hierarchical power position in selecting the preferred non-European partners.

Implicitly there is competition between the European joint masters courses striving for Erasmus Mundus status, but also between European higher education and higher education in other parts of the world. Simultaneously to this position of competition, there are expectations of cooperation between the higher education institutions organising the masters course, between European higher

education institutions in general, and between higher education institutions in Europe and so-called “third countries.”

4.1.4 Positions of Network Members

Members of networks take positions or have roles that define their position in relation to others. The members have their individual identity, but the network may have a shared identity as well. The European Commission has allocated certain roles for the network members. In official connections the coordinator is the representative of consortia and partnership, thus assuming the role as leader. The role of the other consortium members is not determined by the EC, but the consortium itself should make sure that all consortia members have a clearly defined and active role.

What comes to identity, the masters course consortium is expected to have a shared identity as “Joint,” “European,” and of “high-quality.” These characteristics are both selection criteria and inherent traits of Erasmus Mundus courses. In comparison to this identity of the consortium, the partners outside Europe need to be of equal development level with European higher education institutions.

Different views on what networks are may be found in the European Commission’s expectations on the Erasmus Mundus networks, coordinators and other members. These definitions are summarised in the following table. The network typologies are adapted from different network theories (Axelsson and Easton 1992; Möller and Wilson 1995; Mitronen 2002).

Table 2 The European Commission documentation on the Erasmus Mundus programme analysed according to the different definitions of networks and the actions defined for the European Commission, coordinator and partners

Network definition (Axelsson and Easton 1992; Möller and Wilson 1995; Mitronen 2002)	Actions of the European Commission, Consortium and Coordinator
1. Structure	<p>EC:</p> <ul style="list-style-type: none"> • Sets minimum requirement for network structure (number of institutions in consortia and partnerships). • Requires high quality from the consortia and masters courses. Meaning of high quality not defined. <p>Consortium</p> <ul style="list-style-type: none"> • Defines boundaries. • Defines detailed rules. • Structure should remain stable for the EM contract period. <p>Coordinator:</p> <ul style="list-style-type: none"> • Represents the consortium and partnership to the EC. • May have power to include or exclude partners.
2. Relationship	<p>EC:</p> <ul style="list-style-type: none"> • Direct relationship with the coordinator only. <p>Consortium:</p> <ul style="list-style-type: none"> • Relationship based on shared aims. • Adjustment and adaptation expected. <p>Coordinator:</p> <ul style="list-style-type: none"> • Has economic, legal, administrative and informational responsibility towards the EC. • Can define the bonds with European and non-European partners.
3. Processes	<p>EC:</p> <ul style="list-style-type: none"> • Competition between Europe and the rest of the world. • Cooperation within the European Higher Education area. <p>Consortium:</p> <ul style="list-style-type: none"> • Exchanges experiences and best practices. • Defines the actual processes and functions of consortia and partnership. • Internal cooperation. • European partners have power in relation to non-European partners. <p>Coordinator:</p> <ul style="list-style-type: none"> • Allocates resources. • Has internal power in the consortium.
4. Positions	<p>EC:</p> <ul style="list-style-type: none"> • Awards EM status. • Monitors EM masters courses. <p>Consortium:</p> <ul style="list-style-type: none"> • Shared identity as “Joint,” “European,” “high-quality.” • Clearly defined and active role for all partners. <p>Coordinator:</p> <ul style="list-style-type: none"> • Role as leader: represents consortium and partnership.

To conclude it may be said that the European commission mainly depicts two network processes: *information exchange* function and *process oriented* function (that of developing, and implicitly carrying out joint programmes). It should be noted that joint programmes also entail a relationship

of shared aims. (compare Axelsson and Easton 1992; Möller and Wilson 1995, 587-613; Mitronen 2002, 28; Agranoff 2007). Despite the emphasis on shared aims and consensus there are other elements that underline the coordinators responsibilities and power position in the cooperation, both on consortium and partnership level. The coordinator carries the responsibility for the application, and thus may have the power to include or exclude partners. The coordinator has the reporting responsibility, but also the power and right to speak in behalf of the consortia and partnership.

In addition, to defining the way network is viewed in the European Commission, it is possible to consider in more detail the view of networks as processes and examine the different processes of actions or decisions in the network. This analysis is based on the theory-driven presumption that the European Commission's definition of Erasmus Mundus networks may be placed in the *action network* type according to Agranoff's network typology and that EM networks are thus able to perform all nine network actions and decisions (2007, 10).

4.1.5 Erasmus Mundus Consortia as Action Networks

The European Commission expects that Erasmus Mundus networks *exchange information*, experiences and best practices in regular meetings. The information exchange may and should lead to the development of new innovations in organising higher education. The innovations may be practical, such as new ways of teaching or more abstract, related to the dissemination of new methodologies and theories. Innovations and information exchange should also lead to good quality, as there are opportunities for benchmarking and adopting the best practices to be applied in the whole network.

Developing joint educational programmes entails a joint process of curriculum planning and also the coordination of joint criteria in many different aspects, such as admission and examination. In addition to the joint aspects related to the carrying out of the masters course, the network may have other agendas and work plans. There may be strategic plans for the development of the network, a training agenda for academics participating in the consortium or a plan for attracting master course graduates to doctoral studies. Similarly the coordinator or the whole network may have a plan for the developing the coordination, quality assurance, feedback system and so on.

The consortia produce both internal and external reports, such as the annual reports to the European Commission to ensure the Erasmus Mundus status and the scholarship and consortium funding for

the next year of the programme period. Internal reports could include meeting minutes, feedback evaluations, but also academic publications, seminars, conferences and workshops.

These academic endeavours also contribute to the training and capacity-building of the academics involved in the Erasmus Mundus consortia. Generally the network also forms a forum of enhancement and assistance to the participants, where they may learn from one another and find new academic stimuli.

Especially networks with a geographically large range may benefit from the utilisation information systems: databases, sites, blogs and links. These information system applications may be used in the academic and administrative cooperation of the network, but also in e-learning and open and distance learning. Despite the fact that the Erasmus Mundus programme is primarily a mobility programme, the use of information and communication technologies is advocated by the European Commission.

Strategic blueprints and fund leveraging would seem to be less likely actions of Erasmus Mundus consortia, but it is possible that some consortia have plans for securing additional funding, whether it is from their own institution, national funding bodies or other sources. This would comply with the EC expectation of self-sustainability after the EM programme period. Collecting fees from students is one of the key issues in the Erasmus Mundus masters courses. Financial plans and thus financial responsibility and allocation of funds are the coordinators responsibility.

The European Commission has set a minimum level of plan review, with annual reporting responsibility for the consortia. Compliance to the different Erasmus Mundus programme actions (1, 2, 3, 4) are ensured with annual progress reports. Similarly the EC ensures compliance with funding plans with financial report from coordinator. There may be additional audits set by the EC, especially financial audits checking the utilisation of student and researcher grants. In addition, the consortia may have internal reporting, or they may report to their home institutions. External audits, not related to the European Commission may be a part of the consortium's quality-assurance system.

It almost seems that advocating a mutual policy in the networks and encouraging changes, revisions, improvements in the whole network or in the participating organisations, are the main interests of the European Commission. Such European-level programme adaptations as, quality

assurance, credit recognition, recognition of European qualifications abroad and mutual recognition of qualifications with third countries, curriculum development and mobility, are part of the Bologna Process agenda and may be advocated with the help of the Erasmus Mundus programme. The incentives for programme adjustments are funding and status offered by the Erasmus Mundus programme. The implementation of joint educational programmes always implies adjustments for all partners to be able to deliver a truly joint programme. The most important practical adjustments have to do with joint admission and examination criteria.

The adaptation of mutual policies within the network and making programme adjustments may lead to difficulties in complying with national legislation. The need for adjustments stems from the fact of different practices of the network members, and many of the practices are related to either institutional regulations or even higher education legislation. Ideally, from the point of view of the European Commission, the Erasmus Mundus programme would (indirectly) influence national higher education policymaking. Possibly the networks, or their individual members could also influence their national policy-makers. Particularly the expectation for truly joint degrees has implications for degree regulation. The European Commission is well aware that the realisation of joint degrees in many European countries is not on the level of the expectations it has placed in the EM programme calls. Still the EC has chosen to prefer truly joint degrees in the EM programme.

Table 3 The European Commission documentation on the Erasmus Mundus programme analysed according to the nine action/decision types defined by Agranoff

Action/Decision typology Agranoff (2007, 45)	European Commission expectations on the actions and decisions of Erasmus Mundus networks
1. Information exchange	<ul style="list-style-type: none"> • Exchange of experience and good practices • Development of innovation and quality • Dissemination of new methodologies • Regular meetings
2. Agendas and network work plans	<ul style="list-style-type: none"> • Curriculum planning • Admission and examination criteria
3. Reports and studies	<ul style="list-style-type: none"> • Official reports to EC • Publications • Seminars • Conferences • Workshops
4. Forums of enhancement and assistance	<ul style="list-style-type: none"> • Seminars • Conferences • Workshops • Publications
5. Web link information systems development	<ul style="list-style-type: none"> • Use of information and communication technologies • E-learning • Open and distance learning • Development of ICT tools
6. Strategic blueprints and fund leveraging	<ul style="list-style-type: none"> • Coordinator makes financial plans and allocates funds
7. Plan review	<ul style="list-style-type: none"> • Compliance to EM programme actions (1, 2, 3, 4) • Annual progress and funding reports to EC • Internal funding plans • Internal evaluation and quality assessment
8. Mutual policy and programme adjustment	<ul style="list-style-type: none"> • International quality assurance • Credit recognition (ECTS) • European qualification framework • Mutual recognition of qualifications with third countries • Curriculum development • Mobility development • Adjustments to accommodate joint programmes • Adjustments for joint admission and examination criteria
9. Network policy-making	<ul style="list-style-type: none"> • European policies (indirectly) influencing national policy-making • EM networks influencing national policy-makers • Mutual policies and programme adjustments affecting policy-making • Policy implications for degree regulations • EM as a part of globalised European higher education policy

In the following chapters I will move on from the general level of the European Commission documentation to the masters course-level to examine how the expectations of the European Commission are reflected in the interviews with the main actors and the course level documents, and to see how actions and decisions occur in the networks. The two cases chosen to represent the

coordination of Erasmus Mundus masters courses are discussed separately and in the end the findings are compared in the conclusions of the research.

The cases will be presented with a description based on network categorisation criteria (Biezele et al. 2005; Scott and Davis 2007; Smith-Doerr and Powell 2005). The internal definitions of the network based on relationships, structure, processes and positions (Axelsson and Easton 1992; Möller and Wilson 1995; Mitronen 2002). Finally, the functional aspects of the network: the processes and decision-making will be described according to the ways it is regulated by internal agreements. Agranoff's (2007) nine action/decision types form the basis of this typology. Throughout the analysis an additional focus will be paid to the coordination aspect.

4.2 Case Master of Science in European Forestry

I will begin with a brief description of the masters course, Master of Science in European Forestry, placing it in the frame of reference of *joint programmes*, *joint curricula* and *joint degrees* depicted in chapter two. When I examine the contents of the programme agreements and official documents, I will keep in mind the expectation of the European Commission on joint degrees, but also contrast it with the recommendation “Development of international Joint Degrees and double degrees: Recommendation of the Ministry of Education” (2004), as all the Finnish Erasmus Mundus masters courses are likely to be aware of these instructions and to follow them. As the Recommendation of the Ministry of Education requires that “[a]s a minimum, the agreements should lay down the extent of the programme, student admission, the student's status and related rights, the awarding of the degree, each partner institution's responsibilities and the financing of the programme.” (Development of International Joint Degrees and Double Degrees: Recommendation of the Ministry of Education 2004, 2).

In addition to official agreements between the coordinator and partners, there may be additional agreements with students or scholars and the consortium as a collective. There are also other official documents such as financial handbooks and so on, however, their importance in regulating the coordination and network operations of the consortium is not particularly high, rather they are collections of descriptions on the every-day practices in the network. Thus these documents are not the focus of this study and will only be referred to if there is particular reason.

Lastly, I will continue to analyse how the masters course is presented as a network, consortium and partnership in the masters course documents and web site, and then proceed to analysing the documents and agreements regulating the operations of the Master of Science in European Forestry network. I will also refer to the practices and processes of coordination described by the interviewees.

4.2.1 Description of the Master of Science in European Forestry

The consortium organising the Master of Science in European Forestry (Erasmus Mundus) masters course consists of six European universities: University of Joensuu,¹⁰ Finland (coordinator), University of Freiburg, Germany Swedish University of Agricultural Sciences (SLU), Sweden, University of Lleida (UdL), Spain, University of Natural Resources and Applied Life Sciences, Vienna (BOKU), Austria and Wageningen University, the Netherlands. In addition to the masters course consortia of six universities, the University of Joensuu also coordinates the partnership with the three non-European universities of KwaZulu Natal, South Africa, Federal University of Parana, Brazil and NorthWest A&F Forestry University, China. The consortium and partnership are structured according to the European Commission criteria for Erasmus Mundus consortia and partnerships. From a wider network perspective, the MSc European Forestry has connections to external stakeholders, such as “national and international forest/nature management agencies and governmental bodies, national and international research institutions, international forest enterprises and timber, paper, and pulp industries and internationally active NGO's (web page).¹¹

The two-year, 120 ECTS masters course has a *joint curriculum*, but it results in the award of a *double degree*. The students “will obtain the MSc in European Forestry degree, which is officially recognised by at least 2 of the organising universities, and a diploma supplement describing the contents of the programme.” Strictly speaking the programme might not be considered *truly joint* as no *joint degree diploma* is awarded (compare Rauhvargers and Tauch 2002; Maiworm 2006; Finocchietti et al. 2006; Official Bologna Seminar Berlin 2006).

The joint aspects of the masters course are structured so that the partnering universities offer both parts of their existing curricula, but also “collaborate intensively to offer joint courses” (web

¹⁰ Now a part of the University of Eastern Finland

¹¹ www.uef.fi/europeanforestry

page).¹² The curriculum of individual students is not fixed, but consists of both elective and obligatory studies at different partner universities (web page).¹³ Most of the compulsory courses offered in Sweden and Finland are completed during the first year. The students also have “the Applied Period” (practical training) at an international forest organisation or company somewhere in Europe during the first year of the studies, and a “field course in Spain, France, Germany and The Netherlands, and a specialisation course in Austria.” The second year is intended for students’ specialisation, which is manifested in their choice of elective courses (the 120 ECTS comprises about 30 ECTS of elective courses) in the different partner universities and in the master's thesis work (6 possible host institutions for thesis writing). In order to compile the study track of each individual student, there are personal study plans made together with the student and the coordinator at each partner university (web page).¹⁴ The partner universities have their own specialisation and offer them within a given study programme (web page).¹⁵

The aim of the masters course is defined as follows: to offer education in the field of forestry with a European and a sustainable perspective for both European and non-European students (Möttönen 3.6.2009). In addition, the masters course aims to be of the highest quality in Europe, and attractive to students. (Karvinen 2.9.2009) It is clear that the definition of the aim of the masters course as stated by the interviewees is similar to the description to be found on the masters course web site and other supporting documents. This may be due to the fact that the people working with the masters course are also the ones who have had the opportunity to define the aims of the masters course, but they may also be formed by the general expectations placed on the consortia. In addition, benefiting from the specialised expertise of the partners and cooperating with the non-European Erasmus Mundus scholars are mentioned as aims of the masters course (Möttönen 3.6.2009). The aims of the masters course, especially in terms of high quality, European point of view and the specialisation of partners are parallel to those aims the European Commission places on the masters courses.

The masters course-level actors see the aims and mission of the European Commission on a more general level. Mentioning high quality, the promotion of European higher education, competition with American, Australian and Asian higher education and offering non-European, third country

¹² <http://www.uef.fi/europeanforestry/introduction>

¹³ <http://www.uef.fi/europeanforestry/studies>

¹⁴ <http://www.uef.fi/europeanforestry/studies>

¹⁵ <http://www.uef.fi/europeanforestry/studies>

nationals the option of coming to study in Europe. (Karvinen 2.6.2009; Möttönen 3.6.2009; Pelkonen 3.6.2009). Their answers reflect the Erasmus Mundus programme documentation and other general aims of the European Commission, such as the Bologna Declaration and Lisbon Strategy. Pelkonen (3.6.2009), for example, directly refers to the Erasmus Mundus programme and European Commission aims saying that “the slogan is the European Dimension” in higher education and that this slogan is also adopted in the MSc European Forestry masters course. According to him, all masters courses selected for the Erasmus Mundus status should consider their own agenda from this point of view. As is evident also from Pelkonen’s views, when the interviewees were asked to evaluate the compatibility of the aims of the masters course and the European Commission, they stated that they are similar and uniform (Möttönen 3.6.2009), “almost 100% compatible” (Pelkonen 3.6.2009). Karvinen (2.6.2009) said that it is difficult to evaluate whether it is good that the Commission aims to influence national higher education policies and to create a unified European higher education area. Thus, the aims of the European Commission were not heavily questioned, whereas Pelkonen questioned Finnish forestry policy for being too nationally oriented (3.6.2009).

On the masters course-level the aims of the institutional level were seen as more related to the institutional aspects than on the more general aims of the European Commission or the programme itself. The internationalisation strategy of the University of Joensuu has been relatively strong and Karvinen anticipates that it will become stronger in the new university of Eastern Finland as it wants to profile itself as an international university (2.6.2009). The institutional aims were described as being related to the increasing of international (degree) students and thus the profiling of the university as an international actor. (Möttönen 3.6.2009). From the masters course-level it also seemed that the institution could utilise the courses taught in English offered by the masters course and promote it also to other programmes and students (Möttönen 3.6.2009). Thus it may be said that Erasmus Mundus masters courses are one tool in the internationalisation tool kit for institutions, as institutions do not pose any content expectations on the programmes (Pelkonen 3.6.2009). It seems that there is no actual conflict of programme and institutional aims, but the aims are set on different levels and their focus is thus different. Despite their important role in internationalisation, there are no concrete actions or forms of support to the international programmes per se (Karvinen 2.6.2009).

The network structure depicted in the above paragraphs may be presented in the form of a figure as follows.

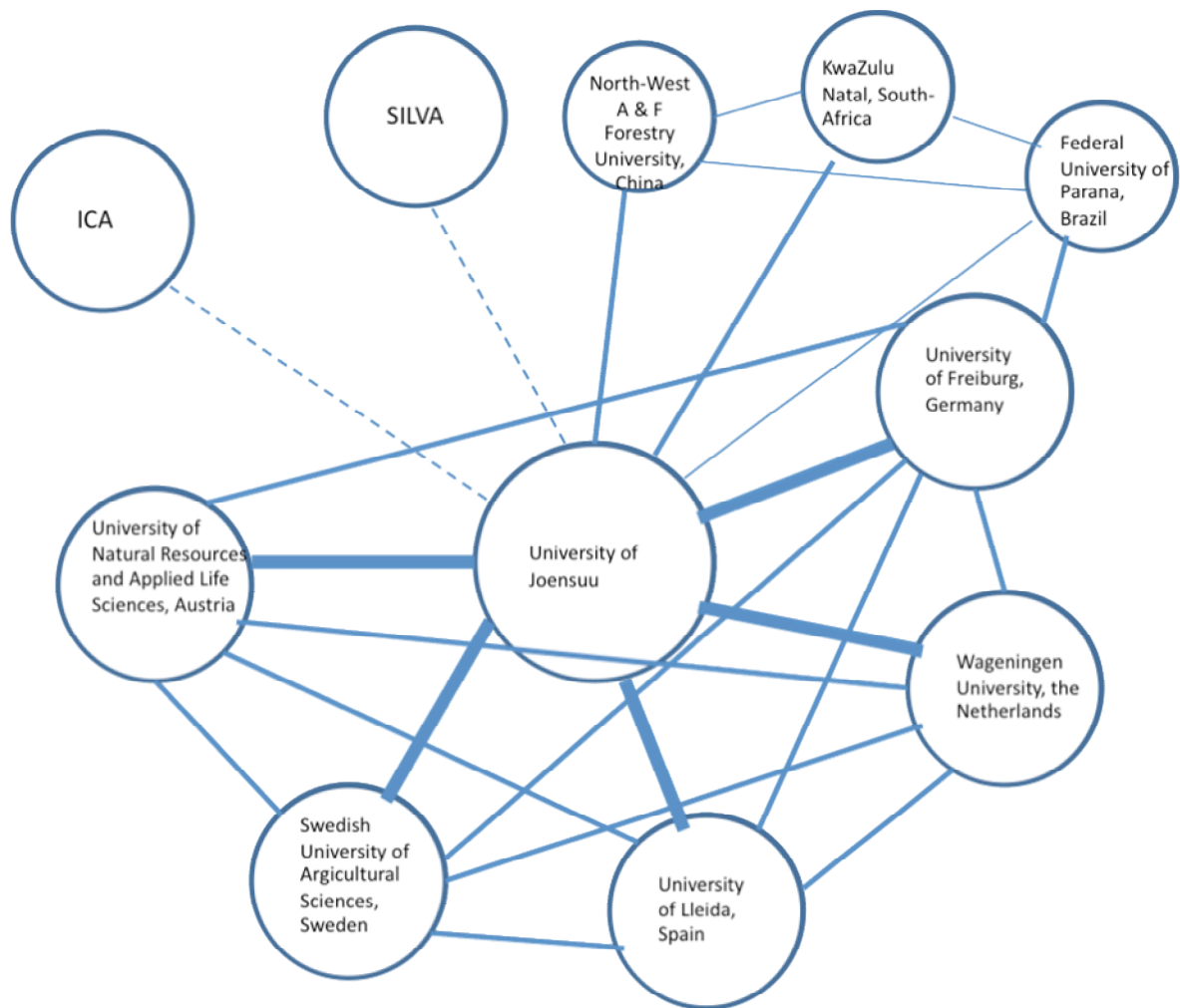


Figure 1 Network of the European Master in Forestry Masters Course Consortium and Partnership

When examining the sociogram of the ego-network of the coordinator of the Master of Science in European Forestry it may be concluded that the focal actor has a high degree of centrality, but not that many weak bridging ties that would connect it to alters otherwise not connected. The ego has strong ties to all the masters course partners and weaker ties to the partnership members. The weakest ties are between the partnership members and only the coordinator and the University of Freiburg act as mediators bridging the partnership network and the masters course network. The coordinator also mediates the partners connections with ICA and SILVA, at least in relation to the masters course. It should be noted that the partners are members of SILVA and ICA networks.

4.2.2 Previous Connections: Establishment of the Network and Consortia

The consortium has been formed based on a previous network and earlier practices of cooperation: The SILVA network¹⁶ (Karvinen 2.6.2009; Möttönen 3.6.2009; Pelkonen 3.6.2009; Tahvanainen 2.6.2009). The circles in forestry are relatively small and the professors have been involved in research cooperation also prior to teaching cooperation (Karvinen 2.6.2009). The basis of a joint masters course was formed in the 1-year programme initiated in 2002, after six years of negotiations and development. The programme was not based on any funding scheme, but all the participants invested in it from their own funds (Karvinen 2.6.2009). This programme helped to develop the practices needed later in the masters course and also affected the partner selection, as the British and Portuguese universities originally involved in the planning of the one-year programme dropped out when it was implemented and were not involved anymore when the masters course consortia was formed. (Pelkonen 3.6.2009; Tahvanainen 2.6.2009). Taking into account that the European Commission expects the masters course consortia to be formed at the time of application for Erasmus Mundus status, the MSc in European Forestry exemplifies this practice.

The partnership cooperation with non-European universities is similarly based on former cooperation. There has been student exchange in the ASEFOREP cooperation with the Chinese partner earlier, and other cooperation agreements between the South-African partner and the University of Joensuu. The cooperation with the Brazilian partner is not based on former liaisons with Joensuu, but with the connections of the German masters course partner (Pelkonen 3.6.2009; Tahvanainen 2.6.2009). Thus the bond to the Brazilian partner is mediated by the German partner (see figure 1).

The larger network of ICA is also involved in another Erasmus Mundus project, Action 4 enhancing attractiveness. In the SILVA network there are over 60 universities as members and there are also 2 other Erasmus Mundus masters courses in the field of forestry run by consortia formed between SILVA members. Due to this the cooperation within the SILVA network is on a general level, as

¹⁶ The SILVA network is formed between forestry departments and faculties in European universities, and the aim of which is to stimulate and facilitate educational co-operation in the field of Forestry in Europe. There are over 40 members in the SILVA Network.

the other Mundus masters courses may be viewed as competitors to the MSc European Forestry masters course (Pelkonen 3.6.2009).

Generally the masters course consortia and the larger partnership network have both been voluntarily and spontaneously formed based on former research relationships and social networks of the people operating in the networks. The network may extend by partners bringing in their own connections as is the case with the Brazilian partner. In practice it would be possible to still extend the network, but there is little interest to include more members.

4.2.3 Varying Requirements on the Extent of Studies

The annexes of the Consortium Contract also deal with the issues mentioned by the Ministry of Education recommendations. The extent of the masters course in ECTS credit points or in study time is not specified in the Contract, although the minimum amount of studies required by each partner university (according to their national or institutional regulations) is mentioned. The requirements vary from no minimum of studies (University of Joensuu) to 24 ECTS of course work and 36 ECTS thesis (Wageningen). This definition seems somewhat surprising, especially as the coordinating university does not have any minimum requirement for the studies completed in Joensuu. According to the criteria, “all the students in the MSc EF programme can get the degree” from the University of Joensuu (Annex A). Despite this very liberal definition, in practice it is not possible to award a degree diploma to a student who has not studied at the University of Joensuu. There has been no mutual adjustment in the amount of studies required. The easiest way of mutual adjustment would have been to adopt the requirements of the strictest partner university.

4.2.4 Joint Requirements, Double Degree

Degree awarding is specified in more detail so that “Each partner university will issue a local degree forming part of the *double degree*.” There are also other general requirements that the partners have to comply with, such as the two-cycle degree structure, the use of ECTS credits, and ECTS grading system or a conversion system from local grades to ECTS grades (Annex A). These requirements are *joint* and support the *joint* characteristics of the masters course, however, they are not set by the coordinator, or the partners, but are derived from the European-level recommendations.

These European policy instruments that are part of the Bologna Process and aim for the common European Higher Education Area, are the frameworks that influence the cooperation and networks functioning under the Erasmus Mundus programme. Although these practices should be adopted in national higher education policies anyway, *joint* educational programmes and related cooperation enforce their implementation. Thus it may be said that the European policies and recommendations may be traced from the Erasmus Mundus consortia agreements, but also the national policies and recommendations have their effect. It should be borne in mind, that the national higher education policies are affected by the European processes.

4.2.5 Coordinator-Led Joint Student Selection

Admission of students is defined in two different points, according to which the coordinator handles the application process, but the selection is done *jointly*. The application schedule is approved *jointly* by the Consortium Committee, based on the European Commission's guidelines. Thus the application process is not dependent on the standard schedules of any of the partner universities. The coordinator receives applications, and according to the contract the coordinator should also maintain an on-line application database for the distribution of information to the partners. According to the interviews an actual database has not been (yet) established. However, the applications are submitted through an electronic form and the most important ones have been scanned and uploaded into the intranet. (Möttönen 3.6.2009).

The student selection process is defined in five steps, where the first step refers to the Erasmus Mundus student selection guidelines (that have 8 steps). The student selection process is done *jointly*, but led by the coordinator. The coordinator is responsible for the "validity and correctness of application documents," but also for a "preliminary ranking." Thus the coordinator already has a possibly decisive role in defining, not only the applicants that are not considered as eligible (do not fulfil the minimum criteria), but also in positioning the applicants into an order of preference. This practice may have influence on the selection of students. This view is enforced as the coordinator only distributes all documents of the 40 top-ranked applicants and the application forms of the 20 following applicants and a name list of all applicants. The partners do have the right to obtain the application documents of any applicant by request. Despite this coordinator-led approach the partners are also expected to "check the validity of the applications and rank the applicants on the basis of received documents." The final selection is then made "under lead of the coordinator." The

coordinator is also responsible for sending the list of selected students to the European Commission. (Annex A).

In practice, all the partners have their say in the selection process and the minimum requirements set by each university for the admission of students restrict the process. In Sweden extensive studies in the field of forestry are required and the Dutch partner emphasises the importance of good study record (Karvinen 2.6.2009). Although the selection criteria are *joint*, the interpretation of the criteria and the emphasis placed on them varies between the consortium members.

4.2.6 Student Status as Ordinary Degree Students

Student status and rights is not dealt as a separate issue in the Annexes of the Contract, but in relation to the approval and registration of students it is mentioned that the students selected into the MSc European Forestry masters course should be “approved by the competent administrative bodies as ordinary students.” It is not exactly clear whether “ordinary students” here refers to the practice of accepting the students as degree students or if it is possible that the students could be accepted with some other status. However, due to fact that the masters course awards double degrees (by the home and host university), the students are accepted as degree students in both universities awarding the degree diplomas (Annex A).

4.2.7 Practical Responsibilities of the Partners

Partners’ responsibilities are discussed only from the practical view-point, such as the arranging and organising of teaching, where the partners are responsible for “organising *joint* courses according to the plan approved by the Consortium Committee” and arranging placements for the applied period (Annex A).

In addition to these, the indexes cover other mainly practical issues, such as composition and the regularity meetings of the Consortium Committee. The regular meetings are set twice a year, in the spring and autumn, but additional meetings are also possible. The Consortium committee agrees on the general marketing policy. The coordinator organises the marketing efforts, but the partners should also utilise their contacts for marketing purposes (Annex A).

Annex B only adds to the financial aspects of the masters course, already discussed in reasonable detail in the actual Consortium Contract. The annex defines the process of acceptance of the annual budget, where all partners provide the coordinator with their budget proposals and the coordinator compiles based on these the annual budget of the whole consortium and sends this proposal to all the partners. The partners may still comment on this proposal and the overall aim is to reach “a consensus...negotiated under the lead of the coordinator.” In many ways the budget proposal process is a *joint* and negotiated process where everyone has a say, but still it is officially the coordinators responsibility and in its power.

4.2.8 Jointness of the Masters Course

Considering the Consortium Contract and its annexes, the curriculum in particular, it is possible to evaluate to what extent the programme may be considered as *truly joint* (Rauhvargers and Tauch 2002, 29). As it is stated in the Contract the (*joint*) courses are “approved by the Consortium Committee meeting” and all the common obligatory courses “have to be approved by the partner universities” (Annex A). Thus it may be said that the first criteria of the programme being *jointly developed* and/or approved is fulfilled.

For the elective courses, the universities awarding the double degree have to approve the student’s personal study plan. (Annex C). This leaves some room for interpretation whether these studies approved by the partners, as it is theoretically possible that one university does not approve the courses the student is planning to take as elective courses in the other partner university. Some of the teaching (e.g. European Forestry Field Course) is also *organised jointly*, with teaching from several partner universities, as well as the thesis supervision. To be a *truly joint programme*, the periods of study and examinations passed at the partner institutions should be recognised fully and automatically, however, this is not self-evidently the case in this masters course.

Annex C of the Consortium Contract deals with the structure of the studies in the masters course. The curriculum is divided into common obligatory courses and elective courses. In addition, there is the master's thesis and an Academic presentation seminar (30-40 ECTS).¹⁷ It is interesting to note that the extent of the thesis varies according to the location of thesis writing. The extent of the thesis

¹⁷ Before the year 2006 the credit points (4 ECTS) for the Academic presentation seminar were addition to the thesis credit points, but now the academic presentation seminar included into the thesis credit points.

affects the credits needed from the elective courses, so it does not directly influence the students' curriculum. The requirement for studies during the second year is 60 ECTS altogether. The varying requirements for the thesis imply that the institutional requirements of each university override *joint* requirements. There is however, some jointness in the thesis process, such as the *joint thesis supervision*, and the academic presentation seminar, which is based on the fact that some universities require a public defence of the master's theses.

Another criterion for *joint programmes* is that students from each participating institution physically take part in the study programme at some other institution(s). This criterion is fulfilled as all students have to study at least in two different institutions, the institutions awarding the double degree diplomas. Similarly the criterion of the length of the students' stay at the participating institution constituting "a substantial part of the programme" may be considered fulfilled along with the previous one. As was already stated earlier the student selection is done in cooperation.

All in all, the Master of Science in European Forestry fulfils the criteria of a *truly joint programme*, with a curriculum, which may be considered as *joint* in most aspects. In the strictest sense it is not a *joint degree* as a *double degree* is awarded at the completion of the programme, however, this depends to some extent on the interpretation.

4.2.9 Network Categorisation

In this subchapter the Master of Science in European Forestry masters course is defined according to the different categorisation criteria used for networks (Biezle et al. 2005; Scott and Davis 2007; Smith-Doerr and Powell 2005). The same criteria of *size, duration, hierarchy, formalisation, range, division of labour, exclusiveness, subject-specificity, moderation, voluntariness, distance, centrality, betweenness, interconnectedness, equivalence* and *density* used with the European Commission's documentation is used in this analysis (see p.19 for detailed definitions of these terms).

There are 6 European members in masters consortia and 3 partner universities outside Europe. Thus the *size* of the network is relatively large in comparison to the minimum requirements of size set by the European Commission.

The *duration* of the masters course is occasional and project-like although based on a longer-term cooperation. The masters course will run for the years 2004-2009 and the additional extension year.

Similarly, the first Consortium Contract was made in October 2006 with retroactive effect from November 8, 2004 and its expiration date is December 31, 2010. The consortium applied for continuation in 2009 for the next Erasmus Mundus programme period, and was selected.

It is worth noting that the official consortium document is named “Consortium Contract” and not *agreement*. Similarly the contract is made between the “contractor,” the University of Joensuu, and the “partners.” The use of such terms gives implication that the contract has been made based on a contract model more commonly used in the private sector and between business enterprises. Contracting often refers to the practice of a company outsourcing or contracting some parts of the work to other companies. Usually in such a contract situation the partners are clearly subordinate to the contractor company. Although it might not have been intentional, the use of these terms and also other aspects of the contract present an image of a coordinator driven network.

The *hierarchy* of the consortium members may be analysed based on the Consortium Contract. The Contract defines the “Consortium Committee” where each party shall have one representative and one vote. This way of forming the consortium committee gives all the participants relative freedom to select whomever they prefer as their representative. The fact that all parties, coordinator and the partners alike, have one vote each emphasises a democratic perception of the consortia, where all members have equal status and decision-making power. In relation to decision-making, it is stated that the Consortium Committee decides “upon the major issues of the consortium.” “The default of a partner,” the termination of the contract,” and “the exclusion of a partner” is mentioned as issues to be decided by the Consortium Committee. It is, however, worth questioning how much actual decision-making power the Consortium Committee has. Generally the members of the Committee do not have a decisive position in their home universities, where the power is limited to the legal representative of the university, such as the rector. In addition, the Consortium Committee members are bound not only by the regulations of their respective universities, but also by national legislation. Thus, all in all, the Consortium Committee has limited power to decide, and mainly on internal issues related to the practical implementation of the masters course.

Despite the democratic structure of the Consortium Committee, the actions defined in the Consortium Contract are mostly coordinator-driven. The lead of the coordinator is emphasised in the Contract in relation to finances in particular, but also in student selection. In addition, the coordinator represents the whole consortia towards the European Commission and ICA. The Consortium Contract is signed in October 2006, but has “retroactive effect from 8 November

2004.” Thus the Contract period is already dependent on the CEC Agreement. This is somewhat contradictory to the expectations placed by the European Commission on the Erasmus Mundus networks, as the expectation was that the consortia applying for Erasmus Mundus status would have been established before the actual application. In reality there is a relative long experience of cooperation between the consortia partners, but this was not *formalised* with a written agreement prior to the application process. The CEC Agreement also forms the basis for the content of the Consortium Contract. As stated in the Contract: “the CEC Agreement and its annexes shall form an integral part of the present Contract.” The Consortium Contract is subordinate to the Agreement and the Agreement, although made by the coordinator and the commission, also bounds the partners “in applicable parts.” Similarly it is stated in the objective of the Contract that “...the Parties shall together contribute to the achievement of the requirement of the CEC Contract [sic]...” Although this quote from the Contract enforces the sub-ordinance to the CEC Agreement, it also brings about the aspects of jointness and togetherness.

The contracts of the consortium make it a relatively formal network. The level of *formalisation* is reasonably high compared to many academic networks that are based on, for example, mutual research interest and not defined by any written contracts. Although often (academic) cooperation begins from informal discussions, mutual understanding and verbal agreements, all Erasmus Mundus masters courses, as well as, other joint educational programmes, should be somehow regulated through an official written agreement between the parties involved. The formal strengthening of ties with written contracts is a part of incentive coordination in networks (Lorenzen 2002, 24). As the Recommendation of the Ministry of Education, specifies “The partner HEIs draw up detailed written agreements concerning the degree programmes.” (Development of international Joint Degrees and double degrees: Recommendation of the Ministry of Education 2004, 2).

The formal Consortium Contract is made between the “contractor” (Joensuu) and the “partners.” Despite its formality the Consortium Contract is subordinate to the agreement between the University of Joensuu as the representative of the whole consortium and the European Commission. Relatively few issues are actually formalised in the contract, but they are implemented after informal agreement in the Consortium Committee and often initiated by the coordinator. There are additional agreements with ICA and with the non-European partnership universities, which regulate the relationship of the consortium with them. In addition to specifying the parties entering the

contract, the contract refers to the “Framework Partnership Agreement (CEC Agreement)” that the coordinator and the European Commission have entered in on November 8, 2004.

After examining this Consortia Contract, it may be concluded that, the point of view of the Ministry of Education and Culture focuses more on the ensuring of the degree and masters course-level issues, but does not give any specific instruction on agreeing on the partners’ responsibilities or finances. From the perspective of the Erasmus Mundus masters courses, the coordinators and the partners, these two questions are most commonly the ones regulated in the written agreement made by the masters course consortium. Whereas, the more practical issues of the actual realisation of the masters course are not fixed in the agreement, but in annexes or other (semi-)official documents. One of the reasons for such a choice is that the consortia agreements are made for a longer period of time and their renewal is more difficult. As it is stated in Article 9 Modification of the Contract, “[c]hanges or amendments to the present Contract shall be approved by all the Parties to the Contract and become effective when signed by authorised representatives of all the Parties.” Related to this is also the fact that they are signed by the legal representatives of the institutions rather than the people actually involved in the masters course. Thus the legal representatives are not likely to agree on very practical level issues. The more practical issues are dealt with in the Contract Annexes, which can be updated with a lighter procedure.

Although the “Consortium Contract” is the most important document regulating the relations between the partners, there are other similar documents that regulate operations in the MSc European Forestry masters course, such as the “Cooperation Agreement” between the University of Joensuu and ICA (2005) and the Agreements of Cooperation of the non-European partner universities (2005 and 2006). The agreement made between ICA and the University of Joensuu as the representative of the whole MSc European Forestry consortium and it is based on the Consortium Contract and its content deals with financial administration. The formal structure of the agreement is similar to the Consortium Contract especially what comes to liability, the modification of the agreement and settlement of disputes. This similarity indicates that some kind of template or model has been used when making both the Consortium Contract and the Cooperation Agreement. The Cooperation Agreement establishes a practical arrangement where ICA receives the fee payments from the students participating in the MSc European Forestry masters course, manages them, keeps records, reports to the “contractor” (coordinator, University of Joensuu) and pays “compensation” to the coordinator and partners. In addition to the financial aspects ICA is involved in the quality assurance and the promotion of the Erasmus Mundus masters course.

In addition to the consortia carrying out the masters course there is the Action 3 partnership network, which consists of the non-European partner universities of KwaZulu Natal, South Africa, Federal University of Parana, Brazil and NorthWest A&F Forestry University, China. The partners have been selected due to previous cooperation and (personal) connections. The Brazilian partner was selected because of its contacts with the German partner's connections. The two other partners were involved in previous collaboration with the University of Joensuu through student mobility programme (China) and institutional collaboration agreement (Joensuu and South-Africa) (Pelkonen 3.6.2009). For the partnership network with the non-European universities there are separate documents regulating the cooperation with the University of Joensuu (as the representative of the MSc European Forestry masters course) and each non-European partner. For some reason the agreement with the Brazilian partner was not available in the documentation I received. It seems that this agreement has not been officially confirmed, but most likely is based on oral and other informal (such as e-mail) communication and agreement. This interpretation is supported by the interview information that the connection is based on personal contacts of one MSc European Forestry partner university. The actual cooperation with the Brazilian partner is not particularly active.

The cooperation with the University of KwaZulu-Natal is confirmed with a very short (one page) "Agreement Letter" where it is stated, that "The Forestry Programme of the University of KwaZulu-Natal supports the application of the consortium of the 'Master of Science in European Forestry' and is willing to be partner in the Erasmus Mundus Partnership Programme..." (2005). This letter is signed by the Head of Forestry in KwaZulu-Natal. Thus it seems that this is a statement of the willingness and support of a particular unit (the Forestry programme) and the individuals involved in it (the professor who has signed), but in many ways this does not seem like any binding agreement and the professor does not have the legal right to sign a cooperation agreement in behalf of the institution he works, but only in his own name. The other "Agreement of Cooperation" between the University of Joensuu and Northwest A&F University is more formalised in its style and it is signed by the legal representatives of the institutions, the Rector/Chairman of the University Council and the Director of International Programmes/Relations (2006). Although the agreement is supposed to be directly related to the MSc European Forestry masters course and the larger partnership network, the agreement does not directly mention this, but is an agreement on institutional level, although especially in the field of Forestry. The agreement is aimed at "mutual understanding," "scientific cooperation," staff and student exchange, and the "exchange of

publications, educational materials, etc.” The fact that the agreement is not confined to the Erasmus Mundus Action 3 partnership is emphasised also in Article 4, where there is indication that cooperation may extend to non-university institutions such as “local and national non-university research, teaching, business and industrial institutions.” (2006).

The *range* of the network may also be concluded from these documents. The geographical range of the Master of Science in European Forestry consortia is European, as expected, but the partnership network extends the *range* on a global level. The *range* of participating students and scholars is also global.

The Consortium Contract also loosely defines the *division of labour*. However the level of division is low: most of the tasks are defined as the responsibility of the coordinator or as shared responsibilities of the consortium. There are no particular responsibilities specified for the partners.

The network is *exclusive* as joining the consortium is not possible, although it is not specifically defined in the Contract. The termination of the contract is possible if a party “fails to perform any obligations under the present Contract or the CEC Contract [sic].”

The *exclusiveness* is also emphasised in the high level of *subject-specificity*. The subject area of the masters course is defined as European and particularly as sustainable forestry. The MSc European Forestry is a strongly *subject-specific* masters course according to the aims defined. On the masters course web page it is stated that the masters course aims to “provide academic education in forestry focusing on the international dimension of sustainable forest management issues.” Content-wise the MSc masters course addresses the” international dimensions of forest resource management and utilisation, supported by a sound understanding of the ecological conditions and their dynamics in Europe” (web page).¹⁸ There are also higher aims on the national and global level, where the masters course responds to the policy and management challenges and demands in the field of forestry. There is also an additional European focus and the European tradition in forestry is emphasised as the founding basis of the masters course (web page).¹⁹

¹⁸ <http://gis.joensuu.fi/mscef/introduction/introduction.htm>

¹⁹ <http://gis.joensuu.fi/mscef/introduction/introduction.htm>

The *moderation* of the actions in the consortium is variable and there are no formal means or processes defined in order to moderate the consortium.

Voluntariness and agreeing together are evident also from the following sentence in the Contract: “The Parties have agreed to define their rights and obligations with respect to carrying out specific tasks relating to the Erasmus Mundus MSc European Forestry Programme.” In addition to voluntariness, sharing responsibility and working together are emphasised in the Contract. Although Article 3 is titled as “The Obligations of the Contractor and Partners” it concerns shared responsibilities. All the parties are expected to “perform and complete their share”; however, what this share consists of is not specified in the contract. A more concrete shared responsibility is that the parties “shall together ensure that each student...who has successfully completed their studies under this programme shall be awarded a *double diploma*.”

The *distance*, or shortest path between partners should be direct from one to the other (not mediated by the coordinator or by another partner). This is not specified in the documentation in any way and the assumption of direct bonds is assumed based on the European Commission’s expectations of network relations. In reality the bond between partners is sustained and mediated by the coordinator.

The *centrality* of the academic and administrative coordinator is thus emphasised. The coordinator is directly connected to all masters course consortium partners and the partnership universities. Although the partners are connected to the coordinator, they have weaker and less organised ties to each other. The bonds between the partners are mostly based on personal contacts, such as previous research cooperation, or for example, previous work places.

In relation to *betweenness*, the coordinator is capable of mediating between all partners, but the coordinator also acts as mediator with consortia and third party contacts (such as ICA, EC) and to the EM Action 3 partner universities in China and South Africa. The interconnectedness of partners in the network is not defined.

The partners in the network are assumed to have an equal position. Thus there is an *equivalence* of roles for the partners. The coordinator has a specific position acting as the head of the masters course consortium and the partnership. The partners may have slightly different roles according to

the tasks they have in the network but generally they are assumed to have equal and similar position.

The maximum level of *density* in the network could be nine bonds between nine partners. Although, all nine members of the network could have connections to all the others in the network and to external third parties, but this is not the case.

To conclude, the analysis may be presented in the following table where the MSc European Forestry consortia is categorised as a network on the basis of the information available in the Consortium Contract (and supporting documents).

Table 4 Overview of the network structure of the MSc in European Forestry

Categorisation criteria (Biezle et al. 2005; Scott and Davis 2007; Smith-Doerr and Powell 2005).	Master of Science in European Forestry
Size	Relatively large: 6 European members in masters consortia. Plus 3 partner universities outside Europe.
Duration	Occasional (project-like): Running years 2004-2009 (+ extension year) but Consortium Contract made in October 2006 with retroactive effect from November 8, 2004. The expiration date is December 31, 2010.
Hierarchy	Relatively hierarchic: Coordinator driven mostly. The lead of the coordinator emphasised in the Contract in relation to particularly finances, but also in student selection. Coordinator represents consortia to EC and ICA.
Formalisation	Formal Consortium Contract made between the “contractor” (Joensuu) and the “partners”. The Consortium Contract is subordinate to the agreement between Joensuu and EC. Additional arrangements with ICA and with the non-European partnership universities. Relatively few issues are actually formalised in the contract, but they are implemented after informal agreement (Consortium Committee)
Range	European for the partner universities in the Master of Science in European Forestry. Global in the partnership agreement. Global for students.
Division of labour	Low: Most tasks defined as the responsibility of the coordinator or as shared responsibility. Particular responsibilities are not specified for the individual partners.
Exclusiveness	Joining in the consortia is not possible (not defined), but termination of contract is possible if a party “fails to perform any obligations under the present Contract or the CEC Contract [sic]”
Subject-specificity	High: Forestry, particularly European and sustainable forestry.
Moderation	Variable as there are no formal means or processes defined for moderating the consortia.
Voluntariness	Voluntary: “Agreed between the Parties.”
Distance	Should be direct (although not specified in documentation), but often through coordinator
Centrality	Centrality of (academic and administrative) coordinator. Coordinator connected to all partners. Partners connected to coordinator, but have weaker ties to each other. Based on personal contacts.
Betweenness	Coordinator capable of mediating between all partners. Coordinator also acts as mediator with consortia and third party (e.g. ICA, EC) contacts and to the EM Action 3 partner universities in China and South Africa.
Interconnectedness of actors in network	Not defined
Equivalence	Coordinator as the head of the masters course. Other partners may have different roles, but generally assumed to have equal and similar position.
Density	All 9 could have connections to all the others in the network (and to third parties), but this is not realised.

4.2.10 Financial and Legal Relationships in the Network

Economic relationships are defined according to the description of financing in the consortium. The coordinator in the MSc European Forestry masters course has financial power over the partners through the allocation of funds and by approving all the costs. Due to legislation in Finland, the

coordinator, University of Joensuu, cannot charge tuition from the students, however, as in all Erasmus Mundus masters courses, there are tuition fees in this masters course.

The Interuniversity Consortium for Agricultural and Related Sciences in Europe (ICA),²⁰ which is a large network where all the partner universities and most other European universities belong to, functions as the organisation in charge of the financial administration. According to the contract ICA only administers the funds and the actual consortium members own the funds. Although the ownership of the funds and the acceptance of the annual budget are defined as shared by all parties, the coordinator has the power to accept all costs that the partners want to claim from the consortium funds (from ICA). Similarly the partners are responsible for record keeping and recording to the coordinator and upon request “shall make available any documentation on Erasmus Mundus MSc European Forestry Programme finances and activities” (Contract, 4). The coordinator (or contractor) has also the power to “terminate the present Contract if a Partner has made false declarations to the Contractor on work carried out or on expenditure” (Contract, 5). All in all, questions of funding and dealing with the programme finances are an important part of this Consortium Contract and are covered to some extent in the Contract Articles 4 Allocation of Funds, 5 Record Keeping and Reporting, 6 Schedule of Payment and Article 7 Termination. In the last article, the only clearly specified breach of contract is related to false declaration on expenditures. It is not so clear what the “any other obligations” exactly consist of.

Similarly, legal relationships, rights and responsibilities are dealt with in Article 8 Liability, where it is defined that any partner is “solely liable for any loss, destruction, damage, death or injury to the persons or property of the Partner in question or of the Partner’s employees or of third parties...” (Contract, 5). Similarly partners are “solely liable towards the Commission for any breach or non-compliance.” It seems somewhat unlikely that these kinds of issues would be dealt with inside the Erasmus Mundus masters course consortia, however, it appears that mentioning them in the Contract is a way of ensuring that such issues will not arise even in the worst case scenario of cooperation. Another similar way of preparing for the complete failure of the cooperation and mutual understanding between the parties, is Article 10 Settlement of Disputes and Applicable Law.

²⁰ ICA was established in 1988 to facilitate co-operation between faculties of agriculture in European universities. The name of the association has changed several times during its history and since 2006 it has been “Association for European Life Science universities

In this article it is specified that disputes should primarily be settled “amicably,” but if this is impossible they will be “by the District Court of Joensuu.”

4.2.11 The Inter-Organisational and Inter-Personal Structure of the Network

In the interviews, the structure of the network was further specified both on the inter-organisational and interpersonal levels. The MSc European Forestry consortia is formed by the main, academic coordinator and two full-time administrative coordinators at the University of Joensuu and the partner universities have their own structures of academic and administrative personnel as follows: University of Freiburg has an academic person (professor) and two administrators, of which one is on the faculty level and the other in the international affairs in central administration. At the Swedish University of Agricultural Sciences (SLU) there is an academic and an administrative person in the central administration. In the University of Lleida (UdL), there are two professors who have a division of labour between them and some of the administrative tasks are carried out by a student assistant. In the University of Natural Resources and Applied Life Sciences (BOKU), there is a similar practice in the administration and the administrator is a recently graduated student. The academic responsibility is on one professor. In the Wageningen University, there is a professor and a part-time administrator. At the University of Freiburg there is a professor and two part-time administrators, one on the faculty level and one in the international affairs in the central administration. (Interview Möttönen 3.6.2009).

The communication and (academic) cooperation happens mostly through the professors (Karvinen 2.6.2009). The administrators working with the programme at the University of Joensuu have a background in Forestry and thus have content competence, but they also have some administrative experience (Karvinen 2.6.2009). In the partner universities, the administrative tasks are handled either by a person with administrative background (e.g. central administration, faculty administration) or by a student or graduate who most likely only has content competence. It could be said that administrative skills and experience are not seen as necessary for administrative tasks in this Erasmus Mundus masters course. This is emphasised through the common practice of some partners (Austria and Germany) not having administrative representatives participate in the Consortia Committee meetings (Karvinen 2.6.2009). The lack of emphasis on administrative experience or involvement may be also due to the fact that there are no existing administrative practices that could have readily been applied to the masters course. In addition, those working in the programme administration become experts through running the masters course.

It is worth noting that the coordination of the masters course in Joensuu is situated on the faculty level, although it would be structurally possible to have the programme operations on a subject-based level. In the partner universities the academic responsibility is on the subject or faculty level whereas the administrative responsibility may be located either on subject, faculty or central administration levels. All the administrators in the partner universities are part-time or have also other tasks than administering this Erasmus Mundus masters course. In many ways the coordinator is central for this consortia network, particularly from the administrative perspective, although it is difficult to evaluate the amount of administrative responsibility possibly carried out by the academics involved in the network. The administration is centralised to the coordinator (Karvinen 2.6.2009) with relatively weak administrative practices in the other partner universities.

4.2.12 Positions: Status and Role of Partners and Coordinator

In principle all the partners should have the same status and position, but the activeness of the partners varies significantly (Karvinen 2.6.2009; Möttönen 3.6.2009). Thus it may be said that the partners can affect their own position, and by being more active it is possible to gain a more important role in the consortia. Similarly, personal contacts and relationships may affect the tightness of the bond between partners. The coordinator should try to remain neutral and treat partners equally. If the coordinator does not acknowledge this, it might cause the consortia and partnership to dissolve. (Pelkonen 3.6.2009).

The position of the coordinator is clearly different from that of the partners. All interviewees confirmed that the coordinator has the main responsibility for the consortia and the running of the masters course (Möttönen 3.6.2009; Karvinen 2.6.2009; Pelkonen 3.6.2009). In addition to the MSc European Forestry masters course the administrator also have several other loosely related tasks, such as an EM Action 4 Enhancing Attractiveness project, the establishment of the European Forestry Institute web portal, and so on. (Karvinen 2.6.2009).

According to the masters course-level interviewees (Möttönen, Karvinen and Pelkonen), the communication inside the network is mainly coordinator-driven and the masters course partners and the Action 3 partnership partners are mostly in contact with the coordinator, but not so much with each other, notwithstanding the exception of the German and Brazilian partners. With this Brazilian Action 3 partner it seems that the connection between the coordinator (Joensuu) and the Federal

University of Parana is weak. It is not clear from the interview data whether the connection between the German and the Brazilian partner, which formed the basis of the establishment of the Action 3 partnership still exists. All in all, the structure of the MSc European Forestry consortia and partnership universities resembles coordinated cooperation, instead of an ideal model of network (Bienzle et al. 2007, 14 site Dietz 1999, 211).

The importance of the coordinator became evident in many different aspects of the interviewees' answers. For example, the coordinator has the overall responsibility "from student selection to graduation" (Möttönen 3.6.2009). Similarly, the student selection is mainly on the coordinator's responsibility, whereas, the partners check that the applicants meet their criteria. (Möttönen 3.6.2009). This will be discussed in more detail later in relation to the division of tasks and responsibilities.

4.2.13 Division of Tasks and Responsibilities

The division of tasks is handled through *inter-organisational coordination* mechanisms and particularly through *contracts*, *monitoring* and *mutual dependencies* (Lorenzen 2002, 24). As has been stated earlier most of the responsibilities are either borne by the coordinator alone or are mainly the coordinators' responsibility (Möttönen 3.6.2009). However, the implementation of the masters course when it takes place in the partner universities is their responsibility (Karvinen 2.6.2009; Pelkonen 3.6.2009). In addition, the partners are responsible for maintaining and developing connections to local organisations where the students may do their traineeship (applied period) and/or thesis work. (Möttönen 3.6.2009; Pelkonen 3.6.2009).

The quality assurance and feedback systems is handled so that the coordinator collects feedback from all the first year courses, and the feedback is discussed in the Consortia Committee meeting. With the second year courses, the partners follow their own feedback and quality assurance procedures. The coordinator has the responsibility of the feedback and quality assurance processes, but in reality the process is not that controlled and there is still need to develop the process so that it would be more coordinated and uniform. (Karvinen 2.6.2009; Möttönen 3.6.2009). Quality is ensured also through institutional quality assurance practices and the means of external quality assurance audits (Karvinen 2.6.2009). These different quality assurance systems may be considered as *monitoring* (Lorenzen 2002).

When asked specifically about the partners' tasks and responsibilities, the following tasks were mentioned, at least being partly borne by the partners: information and marketing, quality assurance, the Consortia Committee decision-making, and commenting on the reports to the European Commission (Karvinen 2.6.2009; Möttönen 3.6.2009). Somewhat paradoxically, the interviewees said that although these tasks and responsibilities should, at least partly, be borne by the partners, they rarely take an active position. Thus they do not comment on the reports, nor engage in active marketing of the masters course (Möttönen 3.6.2009).

From the coordinator's point of view all the partners in the consortia have an equal status, and according to Pelkonen, even the non-European Action 3 partners may be considered to have as important a position as the consortia partners. According to him, the Action 3 partners form an integral part of the MSc European Forestry masters course and cooperation participating in student and staff exchange. Even though the Action 3 partners are not part of the degree awarding consortia they support the masters course and want to develop the cooperation. The Chinese partner has been most active in this. (Pelkonen 3.6.2009).

The division of tasks and responsibilities should be defined in the Consortium Contract, but it is not done on a detailed level. According to Pelkonen, despite this, it is extremely important to have the contract as the cooperation would otherwise be too complex. Particularly the academic actors have their own way of doing things, and administrative and legal regulation is thus needed, and has to be taken into account. In the very early stages, before the establishment of the masters course, the cooperation was very free and flexible, but this was not possible when the masters course was introduced. The Consortium Contract is a compromise after long and difficult negotiations with lawyers from 6 different countries. Although Pelkonen admits that the contract is far from perfect, there has been reluctance to change it, as it is "better to have some contract, than no contract." (Pelkonen 3.6.2009).

4.2.14 Decision-Making in the Network

The Consortium Committee has regular meetings twice a year in person and on the phone if there is need. The Committee meetings are documented and the memos of the meetings are made available for all partners (Möttönen 3.6.2009). In addition, there is regular, weekly e-mail contact. The e-mails are mostly sent from the coordinator to the partners, either informing them or asking them for some information. (Möttönen 3.6.2009).

The Consortium Committee has decision power on the masters course-level, but not on the institutional level of each university (Möttönen 3.6.2009). The members of the Consortium Committee have an equal status, with each partner having one vote, however, there has never been a need to vote, but decisions have somehow been reached in consensus (Karvinen 2.6.2009). This collegial form of decision-making is typical to other academic bodies, as well. The Consortium Committee does not have actual decision-making power, nor the members of the Committee have decision-making power in their home institutions, thus they have to check that the decisions made in the Committee meeting are legal also from the point of view of their home institutions. According to Karvinen in this practice when the issues are already agreed in the Consortium Committee meeting it may be easier to get then accepted in the home institution, than if consent would have been asked prior to the meeting (2.6.2009). The legal power rests with the person(s) who have the right to sign in behalf of the whole institution, in Finland usually the rector of the university (Karvinen 2.6.2009). However, the practices of the programme may bend the limits of previous practices and have an actual effect in institutional decision-making.

Despite the impediments on the legal position of the Consortium Committee, there are actually some cases where the MSc European Forestry consortium uses innovative means to have power over certain decisions. The Consortium Committee makes the student and visiting scholar contracts, despite the fact that they do not have the legal status to do this, and thus the contracts are actually not binding (Karvinen 2.6.2009). Möttönen told in the interview the following example on utilising power in student selection: As the University of Joensuu cannot legally make a pending student selection decision, the masters course may set the condition on the student selection and if the condition is not met, the consortia may prevent the student from being selected to the other partner universities, and thus the students participation in the masters course (Möttönen 3.6.2009).

The coordinator and the partners as individuals or as the collective of the Consortium Committee do not have decision-making power (legal power) over their respective institutions, which are then regulated by national laws. There are relatively few means for the consortium to change the institutional (or national) policies. (Möttönen 3.6.2009). In many ways also the European Commission sets the framework for decision-making and coordination (Karvinen 2.6.2009).

4.2.15 Coordination and Regulation by the Coordinator

It is interesting to consider the relation between the documentation regulating coordination (“Consortium Contract” and similar documents) and the actual practices of coordination as presented by the interviewees. According to Möttönen, the Consortium Contract is used as a reference when and if there are any problems in the cooperation (3.6.2009). It has also occurred that the Consortia Contract has not been in all aspects the best possible. There is, for example, too detailed information on course names, which means that every time a course name is changed, the contract should be adjusted accordingly. There was also need to make changes to the period of validity, renewal and change processes of the contract. Similarly, the principles of division of students during the second year and financial issues should have been defined in more detail. (Möttönen 3.6.2009). These aspects have been taken into account in the new contract made for the Erasmus Mundus II programme period.

When analysing the represented acts of coordination, it is possible to find some aspects of direct supervision in the coordinator’s actions. The academic coordinator in Joensuu, Professor Paavo Pelkonen may be viewed as someone in the organisation having responsibility to manage, instruct and monitor the action of others (Mintzberg 1983, 2-4). However, this power is only available to him through personal characteristics, not through a legal, hierarchical or organisational status. Professor Pelkonen has academic credentials from his long academic and also administrative career: since 1983 he has acted as a professor, vice-dean, dean and even the rector of the University of Joensuu. In 2004 he was elected as the President of SILVA for 2004-2007 (Pelkonen 3.6.2009; Tahvanainen 2.6.2009). These personal leadership characteristics were formed already before the establishment of the consortia and derive from his personal administrative experience in institutional, international and European cooperation (Tahvanainen 2.6.2009).

It seems that the coordinator, or more precisely the collective of actors in the University of Joensuu, has taken on the role of the consortia leader, but with the consent of the partners. According to Pelkonen the role of leader needs to be assumed particularly in situations where there is disagreement or problems in implementing the masters course. It is the coordinator’s responsibility to solve any practical problems in the masters course. According to Pelkonen there has sometimes even been need to “snap at” the partners and use leadership power. However, this leadership should be used with discretion (3.6.2009). Mostly the coordination and leadership is based on mutual trust, adaptation, convincing and aiming for a joint goal (Pelkonen 3.6.2009). Karvinen describes this

leadership style as ad hoc leadership or as an academic-collegial form of leadership that leaves room for others to act as well (2.6.2009). As Möttönen comments in the interview, it is good that Joensuu has had most power to make decisions and act, but the responsibilities could be more equally distributed to partners. From her point of view this has mainly been a question of resources: the partners do not have personnel (or money to hire personnel) that could concentrate working in this masters course. (Möttönen 3.6.2009).

The views on coordination, management and leadership in the masters course vary, as there are no definite positions based on legal or hierarchical structures in the consortium. According to Möttönen, leadership has functioned well, but there is still room for improvement, for example, in effectiveness (3.6.2009). Professor Pelkonen agrees that leadership is a challenge, as there are no organisational structures to support it, whereas, management is always possible (3.6.2009).

4.2.16 Actions and Decisions of the Network

When considering Agranoff's nine network action and decision types, examples of all of them may be found in the practices of the MSc European Forestry network. The *information exchange* in the network functions through regular two-day meetings of the Consortium Committee, which take place twice a year and additional telephone meetings when needed. There is also regular e-mail contact, where most often information is sent by the coordinator to partners. (Pelkonen 3.6.2009; Möttönen 3.6.2009). The exchange of information is the basic function of the network and an integral requirement for its functioning, although there is always room for improvement in information exchange. In the MSc in European Forestry the partners could be more active in exchanging information with each other and the coordinator (Möttönen 3.6.2009). Information exchange also occurs between the masters course-level and the university central administration. In the University of Joensuu the International Relations Office is in charge of general promotion and marketing of study programmes. According to Tahvanainen, the promotion of Erasmus Mundus masters courses is particularly important because of their status (2.6.2009).

Information systems are connected to the information exchange and nowadays the use of applications, databases, sites, blogs, news, links and other on-line information systems is so common that it would be very unexpected to find a network that would not utilise these means of communication and information distribution. Examples of web-based information exchange include e-mail communication, intranet platform, where Consortia Committee meeting minutes are

available etc. (Möttönen 3.6.2009). There is still need to develop the information systems, as well as the information exchange in general. For example, the planned on-line student application system has not yet been established in the MSc European Forestry masters course. The *web link information systems development* includes Consortia Committee meeting minutes available in the intranet and some on-line teaching.

When considering *agendas* and *network work plans*, it is clear that a significant amount of planning has taken place already before the establishment of the masters course consortia (Consortia Contract). In the earlier stages of cooperation, planning was more implicit and not always documented, but also because of the contracts or agreements signed between the partners and the coordinator and between the coordinator and the European Commission, the planning has become more visible and documented. According to Pelkonen and Möttönen (3.6.2009) the coordination not strategically planned, but formed through practise. From the point of view of strategic planning, there have been some attempts to form and implement a common strategy for the consortia: a 5-year strategy was prepared when the official consortium was formed, but it was not really implemented. The strategic development of the network has been more implicit than explicit. The strategy of the masters course and consortia was revised for the application of the second phase of Erasmus Mundus. (Pelkonen 3.6.2009).

The strategies and plans and their implementation, as well as the functioning of the masters course are reviewed. The reviews range from more formal to informal and from external to internal. The more formal evaluations include the evaluation commissioned by the European Commission and conducted by the consultants of ECOTEC,²¹ and the evaluation commissioned from ICA. In addition the program participated in the assessment of the national organisation, Center for International Mobility (CIMO). The internal evaluations are coordinator-led and include processes such as the feedback processes. (Pelkonen 3.6.2009). It seems that external evaluations are better developed, whereas there might be need to make the internal processes more systematic and structured. All the interviewees mention evaluation and feedback as a development area.

²¹ ECOTEC is an international provider of research, consulting and management services focused on the development, delivery and evaluation of public policy. See <http://www.ecotec.com/creative-services.html>

Connected to evaluations, *reporting*, internally and externally, informally and formally, is a common feature with cooperation and networks. External reporting to the European Commission is a requirement for Erasmus Mundus masters courses: the reports are prepared by the coordinator, but partners may comment (Pelkonen 3.6.2009). As may be expected, internal reporting is more informal and often based on discussion on issues in Consortia Committee meetings or more informal occasions. The minutes kept from the Consortia Committee meetings constitute a form of official *internal reporting*. There is also research on the programme and the network cooperation in the MSc European Forestry. One doctoral dissertation has already been completed on the higher education in the field of forestry and another is currently being prepared (Pelkonen 3.6.2009).

Plan reviews also vary from informal to formal and from external to internal. The European Commission organised ECOTECH evaluation is an example of external plan review, whereas the evaluation done by ICA is closer to an internal evaluation, although it may not be considered as a self-evaluation. there are also coordinator-led internal evaluations and feedback processes, which according to the interviewees should still be developed further.

In a similar vein, *funding plans* and plans for securing additional funding are also only made on a general level rather than as a part of a strategy. The funding system in MSc European Forestry is planned and organised differently than in most other Erasmus Mundus masters courses, as there is a separate organisation, ICA, which administers the funds. The contract between ICA and the coordinator is similar to a contract with an organisation and a sub-contractor. The funding of the consortium is based on the European Commission's Erasmus Mundus funding. The distribution of EC funding for the partners is dependent on the coordinator.

According to Agranoff's typology networks should also have *forums of enhancement and assistance*, such as joined training events for network members, but these aspects are not very strong or clear in the MSc European Forestry consortia. There are practices of internal development related to curriculum development and other academic development and to the development of administrative practices (Karvinen 2.6.2009). However, these are not aimed at the members or as a part of their personal development unlike the idea of forums of enhancement.

There are some *mutual policies* in the network, which may be formed as new policies in the network or as good practices adopted from one of the network members. Mutual adjustment is mainly seen as informal coordination where individuals (or organisations) adapt their

interdependent actions to each other's needs (Mintzberg 1983, 2-4; Melin and Axelson 2006, 4). There are examples of mutual adjustment in all the partner universities, where the normal procedures have been somehow changed to adapt to the requirements of the other partners and to the requirements of the Erasmus Mundus programme (implicitly those requirements imposed by the European Commission). In this coordination mechanism, the coordination responsibility is shared in the sense that it rests on the operative level, the actors themselves (Mintzberg 1983, 2-4; Melin and Axelson 2006, 4). When considering international cooperation between institutions from different countries, the cooperation is always based on voluntariness, there are no means to force partners to adapt their practices. National cooperation would be more predefined and have existing frameworks, whereas, the nature of international cooperation is based on negotiation, adjustment and gradual development. The partners are committed to the cooperation and to a common aim, (Pelkonen 3.6.2009).

Examples of mutual adjustment include the introduction of ECTS credit system in partner universities where the system had not been previously implemented. Similarly there are aims to have comparable evaluation and grading systems, but this is still being developed (Möttönen 3.6.2009).

There are also some areas where mutual adjustment could have occurred, but has not taken place. One example of this is the student selection, where applicants that would be considered suitable by the other partner universities, are not accepted by one partner, who has stricter criteria on the contents of the applicant's previous studies. Möttönen describes this as follows: "the Swedish partner university requires that applicants have a certain amount of studies particularly related to forestry. Due to these strict requirements, we have had to refuse otherwise good applicants. This has also resulted in problems of students from the Chinese Action 3 partner university not being able to study in Sweden." (3.6.2009). There is some mutual adjustment in the degree requirements and curriculum, as the first year studies are developed in mutual agreement. However, the requirements for the second year studies vary according to university, with some partners requiring only 30 ECTS of studies and other requiring the thesis (30-40 ECTS) in addition.

In many ways, contradictory to aspects of direct supervision, which may be found in some coordination functions of the coordinator, according to Möttönen it is also the coordinator that has made the most significant adjustments to its own policies in order to fit with those of the partners and European Commission. According to Tahvanainen, the Faculty of Forestry at the University of

Joensuu is small and thus flexible, but also internationally oriented and active. In addition, the University of Joensuu did not have very strict regulations e.g. on physical presence or on the minimum of ECTS credit points to be earned (2.6.2009). As Joensuu is always the other university issuing the degree diploma, it has to adjust itself to the requirements of the five other partner universities (Karvinen 2.6.2009). Möttönen summarises the obstacle hindering mutual adjustment: in the end “all partners act according to the rules of their home universities” (3.6.2009). In this case it seems that despite the fact that there are regulations at the University of Joensuu, they are lax enough to accommodate the adaptations for the Erasmus Mundus programme. According to Tahvanainen, in order to be able to coordinate the Erasmus Mundus masters course the other partner universities would have needed to make more adjustments than Joensuu (2.6.2009).

In most cases, rules and regulations have not been changed, as this is often not possible for the actors themselves, but the interpretation of the rules has changed (Pelkonen 3.6.2009). There have also been several policy changes in the participating countries, but this has not been due to the Erasmus Mundus per se (Pelkonen 3.6.2009).

Mutual policy and programme adjustments have already been discussed in relation to coordination and the changes, revisions, improvements that have been made in the whole network or in the participating organisations. Similarly policy-making on institutional and national level and affecting existing policies are discussed in connection with the coordination. As has been stated, there are limited means of affecting own university or national policies (Möttönen 3.6.2009). The representatives of the institutional level see that the Erasmus Mundus programme has made an impact on the national policy-making. Tahvanainen mentions the tuition fee experiment launched in 2010 as an example of a policy change impacted by the Erasmus Mundus programme (2.6.2009).

The following table presents an overview of the coordinating actions and decisions, and how they are manifested in the MSc European Forestry masters course.

Table 5 Overview of the actions and decision in the MSc European Forestry

Action/Decision typology Agranoff (2007, 45)	Examples from the European Master in Forestry masters course
1. Information exchange	Regular 2-day meetings of the Consortium Committee twice a year (spring and autumn), telephone meetings when needed and e-mail contacts. Coordinator-led mostly.
2. Agendas and network work plans	Coordination not really planned, but formed through practise. Strategy more implicit than explicit. One 5-year strategy was made in the early days of cooperation. The new application (EM II) contains strategic definitions of policy.
3. Reports and studies	External reports to the European Commission made by the coordinator, partners may comment. Internal reporting (discussion) on issues in Consortia Committee meetings (e.g. first year feedback) Research (2 doctoral dissertations) done on the higher education in the field of forestry.
4. Forums of enhancement and assistance	Do not exist as forums of personal development for members. Development targeted to academic and administrative content and practices mainly.
5. Web link information systems development	On-line student application system has not yet been established. Consortia Committee meeting minutes available in intranet. On-line teaching (thesis seminar presentations).
6. Strategic blueprint and fund leveraging	Funding plans based on European Commission. Funding administered through ICA, but in the control of the coordinator. Funding for partners dependent on coordinator.
7. Plan review	From more formal to informal and from external to internal: ECOTECH-the European Commission evaluation. ICA evaluation. Coordinator-led internal evaluations and feedback processes (should still be developed).
8. Mutual policy and programme adjustment	Some mutual adjustment, but still each university has its own policies and national legal framework. The coordinator has been most flexible.
9. Network policy-making	Limited means of affecting own university or national policies, but some examples of changing institutional practices. Difficult to evaluate if national changes are a result of the EM programme.

All in all, the practices of coordination are not clearly defined in the documentation related to the masters course. One reason for this is that at the time of the establishing the masters course there were no instructions or preceding examples of such cooperation as Erasmus Mundus and of coordinating such a masters course. The practices have thus been gradually formed within and through the implementation of the EM programme (Möttönen 3.6.2009). The reasonably strong position of the coordinator is not explicitly chosen, thus there are both aspects of direct supervision and mutual adjustment in the coordination practices. According to the representatives of the

coordinator, the partners have never questioned the position or power of the coordinator (Pelkonen 3.6.2009).

Based on this analysis of decisions and actions occurring in the network, it should be possible to define which type of network the MSc European Forestry consortium, and partnership represent. If the MSc European Forestry consortium and partnership are analysed according to Agranoff's four network categories, it may be said that they have all the characteristics, but that some of these are not very strong. Strictly speaking, it might be questioned whether it is possible to define the MSc European Forestry network as an action network, as such networks should have actual decision making capabilities vis á vis their home organisations. Agranoff also makes a difference between non-decisional agreements and understandings (2007, 44-48). It is clear that this Erasmus Mundus masters course network is more than an information network, where policies and information is exchanged. As a developmental network, it builds its members' capabilities, however, capacity building is only implicitly part of its operations. The characteristics associated with the last two types of networks, outreach and action networks, may be deemed as the weakest parts. There are some strategic outreaches over the institutional boundaries, but the strategies have not been systematically implemented.

Generally, it should be noted that strategic work in universities, even on institutional level is still much newer and less common than in the corporate world. The means for policy and programme adjustments, typical for action networks, are only limited in the analysed Erasmus Mundus masters course. The actors in a particular programme do not feel that they or their masters course has particular policy influence, but the whole Erasmus Mundus programme has had an impact and the implementation of the programme in the consortia universities has either explicitly or implicitly affected the policies. This happens gradually and the causal connection cannot be clearly defined.

4.3 Case Master's Programme in Security and Mobile Computing

Similarly as with the previous case, I will begin with a brief description of the masters course and analysis of the masters course as it is presented as a network, consortia and partnership in the masters course documents and web site and then proceed to depicting and analysing the documents and agreement regulating the operations of the network. I will also refer to the practices and processes of coordination depicted by the interviewees. The Ministry of Education recommendations on joint degrees will be a reference point in the analysis.

4.3.1 Description of the Master's Programme in Security and Mobile Computing

According to the masters course website, the Master's Programme in Security and Mobile Computing (NordSecMob)²² focuses on mobile communication and mobile computing from a technological perspective. The masters course is based on the research cooperation between the participating universities and it offers in-depth knowledge in the field of data communications, mobile computing and information security.

In the consortia offering the NordSecMob Master's Programme there are five Nordic partner universities: Helsinki University of Technology (TKK) in Finland, Technical University of Denmark (DTU), The Royal Institute of Technology (KTH) in Sweden, The Norwegian University of Science and Technology (NTNU) and the University of Tartu (UT) in Estonia. All students study in two universities. A particular feature of the NordSecMob masters course is that it is also a NordPlus cooperation programme, and thus able to offer (limited) scholarships to European students (web page).²³

4.3.2 The NordSec Network and the Establishment of the Master's Programme

The masters course is based on a previous and larger network structure of NordSec, which was established in 1996. Most of the academic key persons of the NordSecMob Master's Programme are members of the Programme Committee of NordSec. This network focuses on research activities and the NordSec workshops aim to bring together researchers and practitioners within computer security in the Nordic countries. The NordSec collaboration is now strengthened by structured educational co-operation within the NordSecMob Master's Programme (web page).²⁴ This previous cooperation, although not based on education but research, may be seen as fulfilling the European Commission's expectations of an established network.

²² The European Commission utilises the term "programme" when referring to the whole Erasmus Mundus programme and its four actions, whereas the term "masters course" is utilised in reference to individual masters programmes. The masters course itself utilises the name "Master's Programme in Security and Mobile Computing" as its official name. I use the official name of the programme, but all the other references are according to the terminology used by the European Commission.

²³ <http://nordsecmob.tkk.fi/index.html>

²⁴ <http://nordsecmob.tkk.fi/consortium/index.html>

In the coordinating institution, the Helsinki University of Technology (TKK) there is a full-time administrative coordinator, Eija Kujanpää who is situated at the faculty level. She also has other tasks related to the internationalisation of computer science, but the NordSecMob Master's Programme still today takes around 70 % of her work time. Kujanpää was in charge of preparing the actual application and she has been involved in the planning and implementing of the programme since the very beginning. The academic coordinator is Professor Antti Ylä-Jääski, whereas other academics are mainly involved in the teaching of the masters course. In addition there has been a project secretary since 2005, who is in charge of practical issues, such as finances, study affairs and student advising. (Kujanpää 11.6.2009). The project secretary at the time, Anna Stina Sinisalo had worked with the masters course since autumn 2008. In addition, there are other personnel involved in shorter support tasks, such as the planning of the web pages, and so on. (Sinisalo 11.6.2009).

The foundation of the cooperation is in extensive and long-term research in data communications, mobile computing and information security and the partners' specialisations support and supplement each other. According to the NordSecMob Master's Programme personnel, these strong content areas are typical for Nordic Countries and thus no Southern-European partners were even considered when the network for the masters course was established (Ylä-Jääski 17.9.2009). The administrative coordinator Eija Kujanpää told in her interview that in the autumn 2004 there was a NordSec conference in TKK where the first ideas of applying for a joint masters course under the Erasmus Mundus programme were introduced, and the preparations began in the spring 2005 (11.6.2009). According to professor Ylä-Jääski, the initiative for establishing a joint masters course came from TKK and the planning started with a rather small group inside TKK. The partners were selected and invited to participate in the programme by the coordinator, and all the prospective partner institutions joined the consortia. The selection process was clear: as Ylä-Jääski wonders, "who could be missing?" (Ylä-Jääski 17.9.2009). The chosen partners were presented as self-evident choices.

According to the administrators, the first meeting was held in August 2005 even though there was no information on the Erasmus Mundus status. Partners were dropped out during the process, if they could not provide necessary documentation within the time limit or for example the University of Stockholm was left out as the studies they offer did not fit the profile of the planned masters course. All the partners are considered the leading technical universities in their countries. Only the University of Tartu was selected for a more person-related reason: the academic coordinator had

worked at the Helsinki University of Technology (TKK) previously. The persons involved have mostly remained the same during the five-year programme period, thus there is good cooperation on personal level, as well. (Kujanpää 11.6.2009). The actual consortium is also a practical choice as operating in a larger network would be more difficult (Ylä-Jääski 17.9.2009).

It is interesting to note that there are some differences in the views on the establishing of the consortium. Whereas from the academic perspective it appears that the coordinator made the selection and invited the partners, from the administrative view point it appears that there could have been more partners, unless they had failed in providing documentation and thus proving their (administrative) capability.

The administrative and academic tasks are quite clearly separated in this masters course and the administration works very independently and the academics involved do not have to be involved in administrative issues (Ylä-Jääski 17.9.2009). All the other partners have a structure of an academic coordinator and an (part-time) administrative coordinator. In some cases, the international office in the central administration is more involved in the administering of the masters course. The University of Tartu is the only exception where there is no administrative personnel directly appointed to the masters course. (Kujanpää 11.6.2009). Everyone involved in the masters course has other tasks in addition to this masters course (Ylä-Jääski 17.9.2009).

4.3.3 Coordinator-Centred Network

The network structure may be perceived as a coordinator-centred network where the coordinator has connections to all the other partners. This may be linked to the formation of the consortium, as the initiative for cooperation came from the coordinator (Ylä-Jääski 17.9.2009). Several practices, such as information exchange and the management of administrative, legal and financial issues, also support this coordinator-centred view. However, the way student mobility is organised in the network makes the network structure more multifaceted. The University of Tartu (UT) and the Technical University of Denmark (DTU) do not have direct connections to each other through the student mobility pattern. Whereas, all the other members of the network are connected through student mobility. The home university can be chosen from three universities: TKK, KTH and NTNU. Studies can be continued at DTU after the first autumn semester or in one of the other three partner universities after the first year of studies. The different partner universities offer their

specialisations, and the students have a relatively restricted choice on selecting courses focusing on advanced topics on the selected area of specialisation.

The connections between the NordSecMob partner universities are actually on the unit-level and between the persons actively involved in the masters course. The institutional-level actors are not involved in the network, except through the official processes of signing agreements (Rantanen 11.6.2009).

4.3.4 Consortium Agreement and Institutional Recommendations

The NordSecMob Master's Programme is regulated by an agreement titled "Consortium Agreement for the Erasmus Mundus Masters Course 038-A1-2006P." In addition, the Helsinki University of Technology has set general principles on the implementation of *international joint programmes* (Rector's decisions 4.6.2007 and 5.6.2008). Naturally the "Consortium Agreement" is the main document regulating the operation of the masters course, and it should be noted that it precedes the institutional-level principles. The Consortium Agreement should be considered also in relation to the national guidelines, namely the Development of international Joint Degrees and double degrees: Recommendation of the Ministry of Education 2004.

The parties of the Consortium Agreement are the "Consortium Coordinator," Helsinki University of Technology (TKK) and the four partner universities "referred to as the Contractors." For all of the parties, a responsible unit is also named. This is a department, an institute or a school. Despite the reference to the partners as "contractors," the purpose of the agreement is stated as "to agree on the implementation" of the NordSecMob Master's Programme (Consortium Agreement 2006, 1). The use of words, such as "agreement" and "to agree" refer to a *joint* process where all partners would have (almost) equal position.

4.3.5 Joint Programme, Joint Curriculum and Double Degree

The NordSecMob Master's Programme defines itself on the web site as a *joint programme* with a *joint curriculum* defined for the masters course and involving always two universities. The structure of the mobility, and studies based on the ECTS credit points are divided into two blocks: 1-2 semesters of teaching (30-60 ECTS credit points) provided by the home university and 1-2

semesters of teaching (30-60 ECTS credit points) provided by the host university. All in all there are three semesters of courses and a fourth research semester (Masters thesis, 30 ECTS) under supervision and evaluation by both the home and host university (web page).²⁵ This practice is somewhat controversial if the criteria for *joint degrees* are followed strictly. As *joint degrees* always entail a *joint curriculum* and full recognition of all studies (including thesis work) completed in partner universities. The shared thesis supervision may be considered either as an example of truly joint cooperation, or as a sign of mistrust where universities need to ensure that the other partner's supervision meets their own standards. Similarly the use of the terms “home university” and “host university” would imply that the two universities awarding the *double degree* would somehow have a different position. Notwithstanding, two universities awarding a *double degree* should imply that the students are full degree students in both universities and are awarded a fully recognised degree diploma. This is further supported by the statement in the Consortium Agreement according to which all students have the status of degree students in the home and in the host institution awarding the degree diplomas.

In addition to the above mentioned, it is stated in the European level recommendations on joint degrees that all of the following should be considered as *joint degrees*: a *joint diploma* issued by the institutions offering the study programme, a joint diploma in addition to one or more national diplomas and *one or more national diplomas* issued officially as the only attestation of the joint qualification in question. (Recommendation on the Recognition of Joint Degrees 2004, 4). Although the masters course may be considered as truly joint, the degree awarded for it is not to be considered joint, but as a *double degree*: the NordSecMob Master’s Programme leads to two officially recognised MSc degrees (120 ECTS) issued by the home and host universities according to the following table.

Table 6 Degrees awarded in the NordSecMob Master’s Programme

Institution	Title of Degree Awarded
Helsinki University of Technology (TKK)	Master of Science (Technology), Security and Mobile Computing
Royal Institute of Technology (KTH)	Master of Science
Norwegian University of Science and Technology (NTNU)	Master of Science in Security and Mobile Computing
Technical University of Denmark (DTU)	Master of Science in Engineering
University of Tartu (UT)	Master of Science in Engineering

(<http://nordsecmob.tkk.fi/study/index.html>) and Consortium Agreement 2006

²⁵ <http://nordsecmob.tkk.fi/study/index.html>

4.3.6 Extent of the Masters Course

The extent of the masters course is 120 ECTS, as is defined in the awarding of degree diplomas. The extent of the course in terms of credit points or time is not specifically defined in the Consortium Agreement.

4.3.7 Joint Student Admission

The process of admission of students is defined relatively specifically in the NordSecMob Consortium Agreement. The Consortium Committee sets the “common standards of student admission,” “a common application procedure” and “a *joint* student and scholar selection process” (Consortium Agreement 2006, 3). The Consortium Committee should “agree on the selection procedure and methods” and on “the allocation of evaluation tasks between partners” (Consortium Agreement 2006, 4).

Although the specific criteria are not defined in the Consortium Agreement, it seems that the aim of the NordSecMob consortium is to find such an application process, selection process and evaluation criteria, on which all of the parties agree. According to the interviews, the student selection process is a truly *joint* process where all partners (academic coordinators) are involved in the evaluation of the applications and the selected students must fulfil all the criteria set by all partners. This *joint* selection process is also in harmony with the expectations of the European Commission (Kujanpää 11.6.2009).

4.3.8 Student Status Defined in the Student Agreement

Student status and rights are discussed in the Consortium Agreement under entry 10. Student matters. The NordSecMob consortium makes a student agreement with all the students, which mainly regulates the students’ scholarship payments and allows the deduction of the tuition fee directly from the scholarship money. The admission and registration of students is also defined in a detailed manner, setting specific time limits for the sending out of admission letters and the students indication on the acceptance of the study place (Consortium Agreement 2006, 6).

As was stated earlier, all students have the status of degree students in the home and in the host institution awarding the degree diplomas. Thus they should have the same duties and rights as all other degree students in these institutions: “The students rights and responsibilities are the same as those valid for each degree student at the institution where the student studies at the specific moment” (Consortium Agreement 2006, 7). Through this status students have access to the same services as other degree students, however, in addition to this, the members of the consortium are committed in the Consortium Agreement to “engage themselves in helping students” (Consortium Agreement 2006, 6). Monitoring the progression of students and possible changes in their study tracks or dropping out, are specified as the tasks of the partners, of which they most inform the coordinator. (Consortium Agreement 2006, 6). It is the students own responsibility to organise themselves into an alumni association, but the consortium will help in distributing information about the association on its web site (Consortium Agreement 2006, 7).

4.3.9 Double Degree and Grading Practices

The awarding of degrees is specified according to the possible combinations of degree awarding institutions in the NordSecMob Master’s Programme. All the students who have completed the required studies will receive a *double degree* (Master of Science) and two officially recognised degree diplomas. Each party will also issue a diploma supplement. All the degree-awarding parties fully recognise each other’s degrees. (Consortium Agreement 2006, 4-5). In connection to the degrees, also the grading scales used by different parties are specifically spelled out in the Consortium Agreement. As there is some variance in the grading systems, this practice seems well founded, however, this also reflects the fact that there has not been mutual adjustment by the parties.

There are references to changes occurring soon after the Agreement being signed, as both DTU and KTH will change their grading scales in 2007 (Consortium Agreement 2006, 3-4). The tendency seems to be towards using the ECTS scale (A-F) or an equivalent five-tier scale. This kind of mutual adjustment is not caused by the Erasmus Mundus programme as such, but is related to a long process of the Bologna-compatibility of degrees and other changes facilitating mobility within the European education area. The ECTS system is taken as an external point of reference when the grading scales used by the NordSecMob partner universities are compared. Two of the partners use ECTS scale, but with somewhat different criteria and the coordinator, TKK utilises an ECTS-compatible five-tier scale. (Consortium Agreement 2006, 5). However, it should be noted that

despite the utilisation of the same grading scale, there are variations in the criteria for grading. This may be manifested in a situation where, for example, the examiner of a master's thesis in TKK gives the grade 3, whereas the other evaluator in the Danish partner university gives the grade 4. (Ylä-Jääski 17.9.2009). The comparability of grades is not a challenge only with joint programmes, but may occur between universities or even inside institutions between subject areas or even individual professors.

The degrees awarded in the NordSecMob Master's Programme are *double degrees*, as are all degrees awarded in international cooperation programmes that TKK is involved in. This is not a set policy at TKK, and in the application round for Erasmus Mundus II there is an application for a *multiple degree* masters course where TKK is a partner. (Rantanen 11.6.2009).

The following figure summarises the depicted structure of the NordSecMob masters programme network.

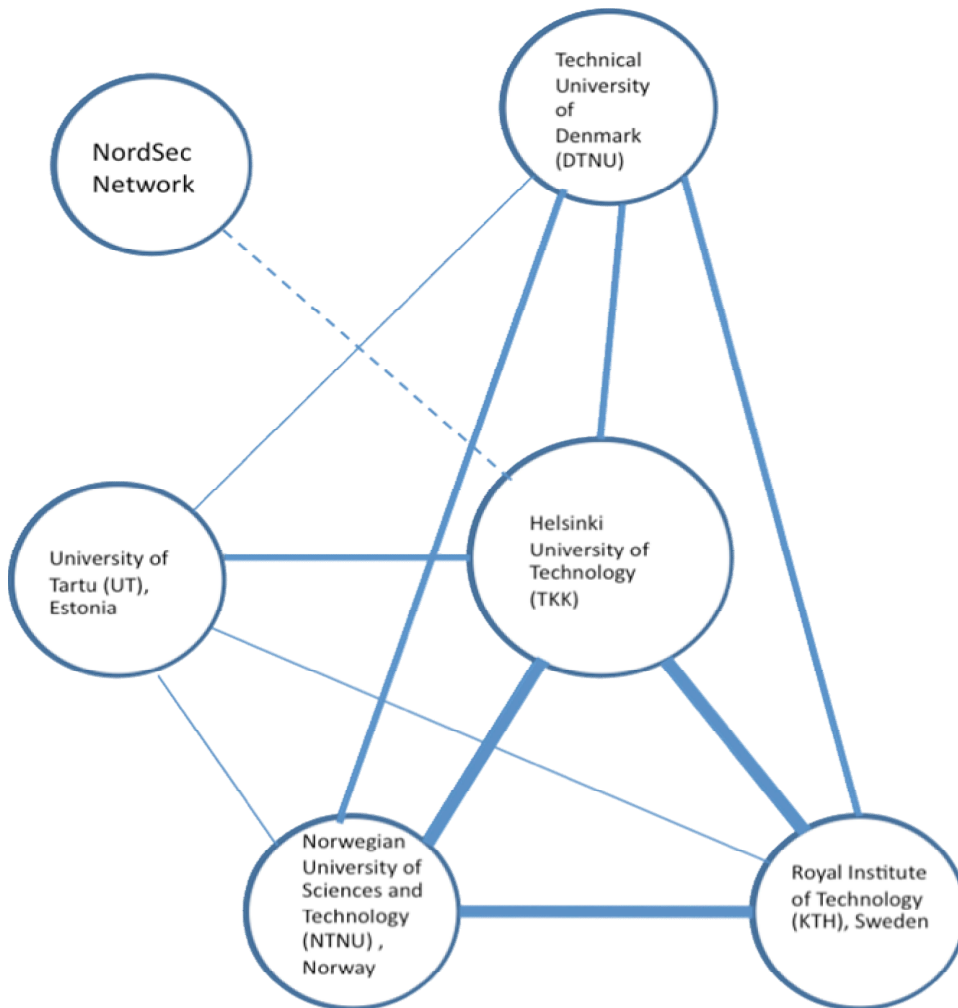


Figure 2 Network of the Master's Programme in Security and Mobile Computing Consortium

The structure of the sociogram depicting the ego-network of the coordinator of the NordSecMob masters programme shows that the focal actor (TKK) has a high degree of centrality. The bridging weak tie between TKK and the NordSec network connects the members of the network as a masters course consortium to the larger network, although, all the partners already had previous direct connections to the NordSec network. The ties within the network are strongest between the coordinator and the two other home institutions and slightly weaker with the institutions that may only act as host institutions. The weakest ties are between the other network members and the University of Tartu.

4.3.7 Network Categorisation

The *size* of the NordSecMob network is relatively small with four Nordic and one Baltic partner in the consortium. Three of the network members can be both home and host universities, and two can be only host universities. There are no non-European partners and thus no Erasmus Mundus Action 3 partnership.

The *duration* of the network is defined in the Consortium Agreement. In relation to the extent of Erasmus Mundus programme, the Consortium Agreement has retroactive effect from 11.8.2006 and is valid as long as the agreement with the European Commission and the coordinator. The agreement on the network cooperation expires when the Erasmus Mundus funding period ends, thus specifying the duration as five years according to the Erasmus Mundus programme period.

The Agreement may be extended if the partners are willing, thus the renewal is not necessarily tied to the continuation of the Erasmus Mundus funding and status in the second programme phase. However, it is not likely that the consortium would continue the masters course with only Nordic NordPlus funding and self-financed students. In addition to the possible renewal of the Agreement, it is amended annually with “supplementary agreement signed on behalf of each of the parties by authorised representatives.” (Consortium Agreement 2006, 2). The specific content of this annual supplementary agreement is not specified.

The *hierarchy* of the network is mainly based on the position of the coordinator as the head of the network. The partners have slightly different positions according to whether they can be home or host institutions. Officially, the Consortium Committee is named as the masters course-level decision-making body, however, the actual power rests with the legal representatives of the institutions. Decisions made by the Consortium Committee have to be accepted and signed by

authorised institutional representatives. Thus the decisions also need to comply with institutional regulations of the member universities.

The NordSecMob network is formal as it has been *formalised* through a written agreement between the coordinator and the partners, which is, however, subordinate to the agreement between the European Commission and the coordinator.

The *range* of the NordSecMob network is European and specifically Scandinavian, as they have themselves defined it. This is somewhat contradictory to the European Commission's emphasis on an European added value, as the *range* is limited in the European context. In addition, the NordSecMob network does not involve any non-European partner universities, and thus it does not have an Erasmus Mundus Action 3 programme. The inclusion of non-European partners was considered in the early stages of the planning and application process, but no suitable partners were found (Ylä-Jääski 17.9.2009). It seemed to be particularly challenging to combine studies offered in these institutions to the planned curriculum of the masters course (Kujanpää 11.6.2009). In addition, the coordinator felt that the aims and requirements set by the European Commission for Action 3 seemed almost impossible to fulfil (Ylä-Jääski 17.9.2009). Naturally, the *range* for students and visiting researchers is global.

The *division of labour* between the coordinator and the partners is defined in the Consortium Agreement. The coordinator and partners' responsibilities in the Agreement are called the "rights and obligations of the parties," and are dependent on the agreement made between the coordinator and the European Commission (Consortium Agreement 2006, 1-2). There is a separate entry, "3. Obligations of Consortium Coordinator," which specifies "administrative, legal and financial matters" with the European Commission as the main tasks of the coordinator. The coordinator is thus "responsible for all contacts with the European Commission." According to the Agreement the coordinator should keep the partners informed of all communication with the European Commission. This includes sending copies of contracts and reports. The coordinator also has the right to nominate both the academic "Programme Director" and the "Administrative Coordinator" (Consortium Agreement 2006, 2). In many ways this is natural as they are the employees of the coordinating institution.

The fourth entry "Obligations of the Contractors" specifies the partners' duties as the implementation of the masters course in accordance with the agreement made between the

coordinator and the European Commission. In addition to this, the partners mainly have the tasks of “informing,” “notifying” and “providing documents” (Consortium Agreement 2006, 3). One specific task, that of marketing the masters course is specified as the coordinator’s task on the practical level (organising marketing efforts), but the general policies are agreed on in the Consortium Committee and the partners should utilise their own existing marketing channels (Consortium Agreement 2006, 6).

In the actual running of the masters course some partners have been more active than others, but according to the coordinators the cooperation has been good with all. The division of responsibilities has been voluntary and partners have actually taken on some tasks. For example, NTNU collects the over-all feedback from students and organises a winter event for the students. Similarly KTH and DTU have taken on the practical task of organising a student event.

It may be concluded that in almost all tasks the coordinator has the main responsibility, whereas, the partners provide information and participate in decision-making on the masters course-level. The coordinator is “naturally” the most active one in the consortium and “carries the main responsibility.” (Kujanpää 11.6.2009). The role of TKK as the coordinator was evident, since the idea for the Erasmus Mundus masters course was initiated by the key actors in TKK (Ylä-Jääski 17.9.2009). Another reason for the unequal distribution of responsibilities is that when the masters course was planned it was still very difficult to see the connections between things and distinguish larger areas of responsibilities (Kujanpää 11.6.2009).

The Consortium Committee is the masters course-level decision-making organ, although it does not have legal decision-making power. In relation to decision-making, the partners are to nominate “at least one representative to the Consortium Committee” and to “participate in a cooperative manner in the meetings of different bodies under this Consortium Agreement” (Consortium Agreement 2006, 3). Thus the partners have the same duty and right as the coordinator to nominate participants in the Consortium Committee and to participate in the consortium-level decision-making.

The role of the partner institutions varies mainly because of the mobility tracks of students otherwise the partners have an equal position. Based on this, there should be *equivalence* of members in the network. According to the coordinators, there were practical reasons for the system where some of the partners can only be host universities. With the Danish partner the minimum requirement for obtaining a degree were not quite clear at time of application, thus studies at the

Technical University of Denmark did not fit the structure of one year at the home university and one year at the host university, whereas, the University of Tartu did not have enough courses taught in English at the time of application. (Kujanpää 11.6.2009). It may be questioned whether this is a sign of the lack of capability for mutual adjustment from the partners side or whether it was choice made based on legal obstacles or lack of resources. In the NordSecMob consortium, there has been discussion during the first phase of Erasmus Mundus whether all the partner universities could become also home universities in the Erasmus Mundus II programme.²⁶ This will be considered in the application for the Erasmus Mundus II round in 2010.

The criteria for choosing the partners were discussed in relation to the establishment of the consortia. As it was concluded, the NordSecMob consortium was formed mainly based on the incentive of the coordinator and the subject of the masters course is clearly defined and the *subject-specificity* is high. The subject area of the course is computer science and mobile and secure computing particularly. Due to these abovementioned aspects the *exclusiveness* of the network is high. Other institutions, which were not included in the consortium, were either found to have the wrong specialisations or were not considered as eminent actors in the field (Ylä-Jääski 17.9.2009). Thus it would seem that joining the network was not possible for all possibly interested parties. Less structured cooperation is realised in the larger network of NordSec. The *subject-specificity* and *exclusiveness* are not that high in the NordSec network. The participation of the current network members is based on *voluntariness*. Although participation was possible to a limited group of institutions, participation for them was voluntary. The voluntariness of network actions is also emphasised as the issues discussed in the Consortium Agreement should be agreed upon among members.

The *moderation* of the network is mainly internal and variable. The coordinator acts as the head and thus moderates the actions of the network. In relation to moderating disputes, the practice is particular with the formation of an internal Arbitration Committee. Unlike in most other masters course agreements where there would be reference to the national legislation, in this consortium disputes should be settled by an “Arbitration Committee.” (Consortium Agreement 2006, 7). Although the aim is to find an amicable solution to disagreements within the network, if there is a unsettled dispute all the member institutions of the network may name their representative to the

²⁶ In June 2010 the division of possible home a host institutions of the first Erasmus Mundus programme is still applied.

Arbitration Committee which makes the final decision. This practice is surprising also in the sense that the arbitration committee does not have legal power, but it is defined in the agreement that its decisions are binding. The Arbitration Committee is set so that each partner may nominate a member in the committee and the members of the arbitration committee “should appoint an independent chair person” (Consortium Agreement 2006, 7). The Arbitration Committee may be seen as a form of mutual adjustment as it sets the NordSecMob consortium outside any specific national legislation. However, in actual unresolved disputes, there would be need to adhere to the legislation of all the partner countries. When this entry in the Agreement was brought up in the interview, Kujanpää stated that there has been no need or willingness to resort to legislation as the aim is always for agreement and settlement (11.6.2009). Similarly, Ylä-Jääski confirms that there has never been any issue that would not have been settled in consensus and through discussion (17.9.2009).

The maximum level of *density* in the network would be reached if all the five network members would have direct connections to the four other members. *Distance*, or the shortest path between two actors is assumed to be direct, but it is not defined. Mostly partners are expected to be in contact with the coordinator, but the practice of home and host institutions requires connections between the two institutions.

The *centrality* of the coordinator is manifested in its connections to all the partners. Vice versa, all the partners are connected to the coordinator. The strength of the bonds and the actual connections between the network partners varies and is not clearly defined. The partners should be in direct contact with each other in relation to the practical running of the masters course. This is also reflected in the *interconnectedness* of the actors. The coordinator is connected to all partners and the partners are connected to coordinator, but have weaker ties to each other. Similarly, the coordinator has the highest mediating capacity in the network, as it may act as a link between two partners, but also to the European Commission. Partners are not expected to mediate communication between each other or of another partner and the coordinator. Thus the level of *betweenness* of the coordinator is higher than that of the other network members. From the point of view of the European Commission there seems to be an *equivalence* of the partners with the coordinator as the head and the other partners holding a similar position in the consortium. In practice those partners that have the status of “home university” are in an equal position and, those having “host university” status in different position. According to the interview data these differences were caused by practical reasons.

The following table summarises the categorisation criteria of the NordSecMob network

Table 7 Overview of the network structure of the NordSecMob Master's Programme

Categorisation criteria (Biezle et. al. 2005; Scott and Davis 2007; Smith-Doerr and Powell 2005).	NordSecMob
Size	Relatively small: four Nordic and one Baltic partner in consortia. Three can be home and host universities, of which two can be host universities. No non-European partners.
Duration	The Consortium Agreement has retroactive force from 11.8.2006 and expires when the Erasmus Mundus funding period ends (expectation of five years). The Agreement may be extended if the partners are willing.
Hierarchy	Coordinator as the head. Consortium Committee as the masters course-level decision-making body. Actual power rests with the legal representatives of the institutions.
Formalisation	Formal written Consortium Agreement between the coordinator and the partners, which is subordinate to the agreement between the EC and the coordinator.
Range	Nordic cooperation as the basis. No non-European partnerships. Global for students and researchers.
Division of labour	Division between the tasks of the coordinator and the partners defined. Coordinator has main responsibility. The partners provide information and participate in decision-making on masters course-level. The Consortium Committee is the masters course-level decision-making organ, although it does not have legal decision-making power.
Exclusiveness	Relatively high. Joining the network not possible.
Subject-specificity	Relatively high. Computer science: mobile and secure computing particularly.
Moderation	Variable and mostly done by the coordinator.
Voluntariness	Voluntary. The practice of settlement of disputes is particular with the formation of an Arbitration Committee.
Distance	Assumed to be direct. Mostly partners are expected to be in contact with the coordinator, but the practice of home and host institutions requires connections between the two institutions.
Centrality	All partners are connected to the coordinator and the coordinator is connected to all partners. The number of connections between the partners varies and is not defined. Centrality of (administrative) coordinator, but also the Consortium Committee presented as a central body in documentation.
Betweenness	Coordinator capable of mediating between all partners. Coordinator also acts as mediator with consortia and the European Commission.
Interconnectedness of actors in network	Coordinator connected to all partners. Partners connected to coordinator, but have weaker ties to each other.
Equivalence	Coordinator as the head of the masters course. Different position for those having only host university.
Density	In principle there should be bonds between all five partners.

4.3.8 Decision-Making in the Network

The main decision-making body within the network is the Consortium Committee. The main task of the Consortium Committee is to “support the Consortium Coordinator in managing the masters course.” This is specified as the more detailed tasks of financial responsibilities, such as, deciding on annual programme fees, scholarship conditions and the distribution of consortium flat rate. Other tasks include, student selection, quality assurance, joint curriculum adaptation and marketing of the masters course (Consortium Agreement 2006, 3-4).

In relation to financing, the Consortium Committee has some power. It may allocate autonomously the annual flat rate of 15 000 € among the parties, as this is not regulated by the participating institutions nor the European Commission. In addition, it decides on the fees collected from students, however, this power is restricted by national legislation and the institutional regulations of each partner university. In addition, the regulating of the student and scholar scholarship conditions may be seen as a part of financial power. The scholarship contracts are checked and approved by the International Student Services of TKK (Rantanen 11.6.2009). Thus it could be said that the power of making a financial agreement is delegated to the masters course-level by the institution, but monitored on the institutional level. Financial issues do not, after all, play a very important role in the Consortium Agreement as there is only one entry, entry 7. Programme fee and other financial matters, that defines the level of tuition collected from students and the costs of administration, which are mainly the costs related to the coordination of the masters course (Consortium Agreement 2006, 5).

Somewhat contradictory, the Consortium Committee is the decision-making body on the masters course-level, but it does not have the legal status for decision-making. The decisions the Consortium Committee makes are practical and within the set frameworks of national legislations and institutional regulations. In reality the Committee is thus an open forum for discussion. The meetings are in practice open to anyone, but the partner universities send the representatives they prefer for the meetings. Usually these are the key persons of the masters course, at least the academic contact person, but in most case also an administrator. The Danish partner sends two professors, who are also in charge of the administrative issues, and Tartu sends the academic contact person (teacher/researcher). In the decision-making everyone is considered equal and their academic or administrative expertise is respected and valued. The actual decisions have always

been reached in consensus through discussion and there has never been a need to vote. (Kujanpää 11.6.2009; Ylä-Jääski 17.9.2009).

This description of the Consortium Committee meetings gives a democratic and collegial picture of the coordination and management of the NordSecMob Master's Programme. The only limitation to the openness of this Consortium Committee as a forum is that student or alumni representatives are not involved. The explanation for not letting the students attend is that the Committee also discusses the cases of individual students (Kujanpää 11.6.2009).

4.3.9 Challenges of Coordination

Despite the collegiality of the Consortium Committee and the consensus-based decision-making practices, the coordinator has the coordination responsibility in this network. The main challenges of coordinating the consortium have been related to national legislation or institutional regulations, however, it has always been possible to "work ones way around these obstacles." These challenges are external to the cooperation and the consortium cannot (directly) affect them. (Ylä-Jääski 17.9.2009). Internal discussions and making recommendations are seen as the main coordination practices, as there is no means to force anyone (Kujanpää 11.6.2009). This view on the coordination would enforce the interpretation that *mutual adjustment*, or the adaptation of interdependent actions to each other's needs, is the main way of coordination in the NordSecMob network.

There have been some disagreements between the network members on the division of students between partner universities. The aim was set so that there would be 45 students selected annually and thus partner institutions would have approximately 15 students each. This aim could not be guaranteed and it has not been reached. Partners hope for an equal distribution of students, but this has not been always possible. Despite this disappointment none of the partners have considered leaving the consortium, nor have there been any unresolved disputes. (Kujanpää 11.6.2009).

Another challenge has been faced in the practices of thesis supervision and particularly in the evaluation practices of the theses. There has been need for common evaluation criteria within the consortium, but making them would have been too long a process at the time of establishing the consortium. Joint criteria for evaluating theses on institutional level inside TKK were only introduced in 2009. There are also recommendations made in 2009 that are given to all the evaluators of master's theses, however, they are only recommendations as the decision-making

power of the consortium does not extend the institutional decision-making power. (Kujanpää 11.6.2009).

Despite the coordination being mostly based on mutual adjustment and a democratic view on networking, the position of the Helsinki University of Technology (TKK) as the coordinator is still relatively strong. The position of TKK is based on the establishment of the masters course and the partners have not questioned the position of the coordinator. The practices of coordination and the tools for coordinating the network are rather subtle. According to the academic coordinator there is “no real leadership culture,” but this is not really needed as the consortium members share a joint goal and mutual interests (Ylä-Jääski 17.9.2009). It can be said that the academic leadership in the NordSecMob consortium is very collegial. Similarly, when analysing the documentation regulating the NordSecMob Master’s Programme, the Consortium Committee seems to have an important role, whereas the role and position of the coordinator is not emphasised as much. The Consortium Committee holds the leadership and decision-making functions to a limited degree, as there are external restrictions that cannot be surpassed by the Committee. Most of the decision-making is related to the academic contents of the masters course.

In the interviews the role and position of particularly the administrative coordinator was presented as a stronger actor. This role is more of the management type than (actual) leadership. The administrative coordinator, Eija Kujanpää is also named as the coordinator of the masters course in the Erasmus Mundus application to the European Commission. This reflects the importance of management in the running of an Erasmus Mundus masters course, especially when comparing the requirements and tasks the European Commission sets for the masters courses, for example, in annual reporting. In several other masters courses the academic coordinator is named as the main coordinator, as there is only one person named in the Erasmus Mundus application.

From the point of view of the central administration of TKK, the masters course-level administration plays an important role. According to Rantanen, basing masters courses on the academic content is not enough, but programmes should plan and resource an administrative person (11.6.2009). The importance of administration seems to be taken seriously in the NordSecMob consortium. The administrative management is emphasised due to the nature of the Erasmus Mundus programme, however, there might be more need for academic leadership. The cooperation between the administrative and academic coordinators is very important for the smooth running of the masters course. (Kujanpää 11.6.2009). The administrative coordinator is independent in what

comes to internal and external support networks and cooperating with different national and international bodies, whereas, academic issues are discussed with the academic contact persons in the partner institutions and also with colleagues in TKK (Ylä-Jääski 17.9.2009).

In the NordSecMob Master's Programme the various possible study tracks (based on different specialisations) make the management and coordination of student mobility a challenge. There are 12 possible combinations the students may select from, and managing and coordinating these requires intensive cooperation in practical issues. (Kujanpää 11.6.2009). The cooperation between the home and the host institution is most important, but as the coordinator is should also be aware and follow up on the study progression of each student, there is significant amount of coordination needed. According to Kujanpää the current track system has worked well and there are no plans of changing it (11.6.2009). Most of the coordination, where TKK is neither the home nor the host university only requires good practices of information exchange. This leads us to the analysis of the different types of actions and decisions in the network (Agranoff) starting from information exchange.

4.3.10 Actions and Decisions in the Network

There are regular practices of *information exchange*: there are regular meetings twice a year and an annual student selection meeting. The meetings are held at each partner institution in a rotating order (Ylä-Jääski 17.9.2009). Communication from the coordinator's side (the administrative coordinator and the academic coordinator) is intensive and almost daily with the key (academic) persons of each partner. The administrative staff also communicate between themselves (project secretary and the administrators at partner universities). There is a general practice that the coordinator sends important e-mails to all partners, and the partners also follow this practice of open e-mail discussions. Despite the centrality of the coordinator the partners are also interconnected and they should have both direct and coordinator mediated connections to each other. Information exchange, together with "soft persuasion" and "personal commitment" are mentioned as the main coordination mechanisms in the consortium (Kujanpää 11.6.2009). In addition to internal *information exchange* the partners are responsible for providing information needed in the reporting to the European Commission. The *information exchange* between the European Commission and the consortium are the coordinator's responsibility.

Agendas and network work plans such as strategic planning, work planning, teaching and curriculum planning, coordination planning, and so on, are mostly prepared by the coordinator and realised through the Consortium Committee meetings. (Kujanpää 11.6.2009). The strategies and plans are made together in the meetings, although the initiative might come from the coordinator (Ylä-Jääski 17.9.2009). It is almost impossible to make long-term strategic plans as the Erasmus Mundus period is so short. On the curriculum and teaching planning level the plans are updated annually. Each partner may develop its own track, but must keep to the specialisation area defined in the original application for Erasmus Mundus master course defined in mutual understanding. Similarly the amount of elective courses in comparison to the core courses should be kept reasonable. There have also been discussions on limiting the amount of extra studies (over the required 120 ECTS) students may include in their degrees. (Kujanpää and Sinisalo 11.6.2009).

The practices of internal and external *reporting* of the masters course are tied together. According to the Consortium Agreement, the partners have the duty to report to the coordinator and provide any documentation needed for the reporting done by the coordinator to the European Commission (Consortium Agreement 2006, 7). The reporting to the European Commission focuses on the administrative aspects and the reports are prepared by the administrative coordinator at TKK. The reports are sent to the partners for comments and to be reviewed, but the final responsibility lies with the administrative coordinator (Ylä-Jääski 17.9.2009)

There are no mentions of *forums of enhancement and assistance*, such as joined training events for network members in the consortium documentation, and such practices are not mentioned in the interviews either. There are some general plans for supporting Erasmus Mundus and other international programmes on the institutional level in TKK. There have been attempts to develop a forum of Erasmus Mundus masters courses at TKK, but so far as there have been so few masters courses this has not been very successful. There are also meetings where the faculty-level international administrators meet with the central administration people working in international affairs. These meetings have resulted in instructions and the gathering of best practices. (Rantanen 11.6.2009). In many aspects these institutional support measures are limited only to the institutional actors, and do not extend to the larger network. There are no network-level *forums of enhancement and assistance*, but each network member may have its own forums.

It would seem almost self-evident that a masters course in computer science has a *web information system*. In the documentation these are not mentioned, except the masters course webpage in

relation to the alumni association. In the beginning there were plans to develop an intranet system for the masters course, but the software application was not completely satisfactory and it was difficult to motivate the partners to utilise this platform. In addition, the intranet system may pose some information risks and it causes extra need for administration. Communication via e-mail has been most efficient and the practice of sending information to all members of the consortium is well-established. The Tokka on-line application system for student application and selection is used in the NordSecMob Master's Programme, but this same application is used in other programmes at TKK as well, so it is not an *information system* solely developed for the use of this masters course. (Kujanpää and Sinisalo 11.6.2009). Most of the regular ever-day communication is handled through e-mail, in addition, wikis and other web-based information systems are utilised in teaching (Ylä-Jääski 17.9.2009).

The NordSecMob consortium has been relatively active in *fund leveraging*. Already from its establishment the masters course has had plans for securing additional funding, as the decision in the meeting in August 2005 was to implement the masters course notwithstanding the Erasmus Mundus funding decision (Kujanpää 11.6.2009). The NordSecMob Master's Programme has a varied funding strategy as it is not reliant on Erasmus Mundus funding only. The masters course benefits from NordPlus funding, Erasmus funding and special funding from the Rector of the Helsinki University of Technology (TKK). The Erasmus Mundus, NordPlus and Erasmus funds are mainly directed to the students in the form of scholarships, but the funding from the rector is used to cover the costs of coordination. In addition, in 2009 the consortium offered scholarships to outstanding EU/ETA students in order to attract more European applicants in the masters course (web page).²⁷ However, according to Ylä-Jääski, one of the main motivations for applying for the Erasmus Mundus status was funding. He also points out that there are relatively few European applicants to the masters course and that the number of self-financing students has also been minimal. (17.9.2009) From the perspective of funding, the financial administration of scholarships is fully the responsibility of the coordinator. (Kujanpää 11.6.2009).

The *plan review* action is manifested in the practices of informal and formal legislative or audit reporting in the masters course as they are defined in the masters course documentation. The quality assurance methods are defined in the Consortium Agreement, and include external global

²⁷ <http://nordsecmob.tkk.fi/index.html>

evaluations arranged every three years and internal masters course-level measures, common course evaluation feedback forms, and bi-annual seminars with “the participation of students, teachers and administration.” (Consortium Agreement 2006, 5-6). In practice not all of these measures have been taken.

The basis of the evaluation and quality assurance practices of the masters course lies with the institutional practices, the practice of reporting to the European Commission and some masters course -specific actions. The actual practices of evaluating the masters course quality are realised in an internal evaluation carried out now at the end of the programme period, an external evaluation and an evaluation of the substance (curriculum) of the masters course realised by a French research institute (EURECOM) in October 2009. The aim was to commission an external evaluation for the administrative practices of the masters course, but a suitable evaluating/auditing body was not available. (Ylä-Jääski 17.9.2009). All the partners answer the self-evaluation independently reflecting their own aims and capacities to act in the future in different positions in the consortium. The coordinator is responsible for making a final report and development proposals based on the self-evaluation answers.

The internal evaluation focuses more on the management practices of the masters course such as processes, implementation and so on, which are the aspects also emphasised by the European Commission. From the coordinator’s point of view, the EC has relatively little interest in the substance of Erasmus Mundus the masters courses. The administrative development of the masters course is based mainly on self-evaluation, whereas the academic development is based on external evaluations. (Kujanpää 11.6.2009).

When considering the *mutual policies and programme adjustments*, changes, revisions and improvements made due to the Erasmus Mundus in the whole network and in the participating organisations, it is difficult to distinguish which are caused by the Erasmus Mundus programme and which have taken place for other reasons. Most of the changes related to the grading of studies may not be considered as mutual adjustment in the programme, as most unification of practices are caused by other international processes, mainly the Bologna Process. The use of common feedback forms and a joint feedback process may be seen as a *mutual policy* adjustment.

One significant form of mutual adjustment adopted by the Helsinki University of Technology (TKK) is only revealed when the basic principles for masters courses carried out in cooperation is

considered in relation to the practices applied in the NordSecMob Master's Programme. In principle the basic requirement for issuing a degree diploma is that the student has completed at least 60 ECTS credits at TKK including the thesis work. This principle is adjusted for the Erasmus Mundus masters courses, so that the minimum requirement is a jointly supervised thesis and there is no set minimum for credits attained at TKK. (Rector's decision 4.6.2007). The Erasmus Mundus masters courses are given more freedom than other programmes. According to Rantanen defining the minimum amount of ECTS credits obtained at TKK is left at the discretion of the faculty-level (11.6.2009). The exceptional nature of the Erasmus Mundus masters courses is also manifested in that they do not have to strictly adhere to all institutional practices such as common application times (Rantanen 11.6.2009). On the institutional level the Erasmus Mundus masters courses are seen as an exceptional type of educational programme even in relation to other joint programmes.

Strategically all international programmes are prioritised at the Helsinki University of Technology (TKK). The principle is that each major field should have a truly international programme, and Erasmus Mundus masters courses are particularly attractive because of their status. The establishment of Erasmus Mundus masters courses has been encouraged by giving them institutional funding for a limited time period. Despite this institutional support, there has been relatively little institutional steering towards Erasmus Mundus applications from certain fields. Initiatives for applications have arisen from unit-level and from the interest of individual actors. The policy has been that almost anyone can apply. The criteria have been that the application is realistic, the other consortium members are well-known and established technical universities and that the unit or faculty has had some previous cooperation with them. (Rantanen 11.6.2009). The Erasmus Mundus masters courses are perceived as interesting by international visitors and international partner institutions (Rantanen 11.6.2009).

Generally the masters course-level actors would like to have more support from the institutional level and the central administration in particular. Ideally there should be similar institutional support practices for all the international (Erasmus Mundus) educational programmes and a full-time person in the central administration managing these. Whereas the institutional support from the rector and the faculty dean are important, although maybe not very concrete. There have been cases where practices have been adjusted and this flexibility is seen as a concrete sign of institutional support. (Kujanpää 11.6.2009).

All the participating institutions have made adjustments to their requirements of students' physical presence at the institution in the master's thesis-semester during the Erasmus Mundus programme phase. In the beginning, almost all partner universities required the student to be present, but now the theses are still supervised jointly, but the universities do not insist on the students' physical presence. An example of another adjustment is that KTH does not require a thesis defence to comply with the practice in TKK. (Kujanpää 11.6.2009).

There have been some practical adjustments in TKK due to the Erasmus Mundus programme. There have been changes made in the degree diploma printing, so that the names of all partner institutions are also mentioned in the diploma. The schedule of the masters course follows the academic year of each partner university according to where the courses are taught. There are special tailored services for the EM students. However, these adjustments have also given rise to the question of the principle of equal treatment. Rantanen asks; how many adjustments and special services should the Erasmus Mundus student receive in comparison to the normal degree student? (11.6.2009). One thing that has not been adjusted for the Erasmus Mundus masters course, is the inclusion of language studies in the degree. This has been a deliberate choice from the masters course perspective. From the autumn 2009 onwards there, has been a tailored English course for NordSecMob students (Kujanpää and Sinisalo 11.6.2009). In all other teaching, including their core courses, the students are fully integrated in normal degree teaching at TKK (Ylä-Jääski 17.9.2009).

It may be concluded that the *mutual adjustments* are mostly administrative and related to the institutional regulations. Institutional regulations have been adjusted to accommodate the different administrative practices in the partner universities and to fulfil the Erasmus Mundus requirements set by the European Commission. Academic adjustments do seem to have taken place.

If there have been institutional adjustment, there have been relatively few changes that the Helsinki University of Technology has been involved in *policy-making* on the national level. The masters course coordinator has prepared statements to the proposed new university legislation. In addition, there has been some general communication with the Ministry of Education and Culture (Rantanen 11.6.2009). Similarly the masters course-level actors have not actively tried to affect national *policy-making*, but rather have chosen to wait for changes to occur that enable some of the functions related to the Erasmus Mundus masters courses (Ylä-Jääski 17.9.2009). The Erasmus Mundus programme is well-known on the national level and thus the whole programme may have an effect in the planning of reforms in Finnish higher education (Ylä-Jääski 17.9.2009). It is also difficult to

estimate which changes are caused by the EM programme and which occur due to other reasons. For example, the introduction of the new university legislation and particularly the possibility of charging tuition from non-European degree students will affect the Erasmus Mundus masters courses, but this change is not seen to be caused by the EM masters courses. (Kujanpää 11.6.2009). The findings are summarised in the following table.

Table 8 Overview of the network actions and decision in the NordSecMob masters course

Action/Decision typology Agranoff (2007, 45)	Examples from the NordSecMob Master's Programme
1. Information exchange	Regular Consortium Committee meetings at least twice a year and student selection meetings with rotating hosting practice. Regular and active e-mailing practices.
2. Agendas and network work plans	Strategic (academic) planning done together in Consortium Committee meeting. Practical planning and management mostly coordinator-led
3. Reports and studies	Partners report to coordinator and coordinator to EC.
4. Forums of enhancement and assistance	Internal forums of assistance and dissemination of best administrative practices at TKK have been developed, but not within the network.
5. Web link information systems development	Web pages, Tokka on-line application system, wikis.
6. Strategic blueprint and fund leveraging	Active and varied funding strategy: in addition to Erasmus Mundus funding, there is NordPlus funding, Erasmus funding, special funding from the Rector of TKK. Funding a crucial motive for applying for EM status.
7. Plan review	External academic and content evaluations were planned every three years. They are done at the end of the first Erasmus Mundus programme period. External administrative evaluation was planned, but will be done as self-evaluation. Internal masters course-level measures: common course evaluation feedback forms, bi-annual seminars.
8. Mutual policy and programme adjustment	ECTS grading and credit transfer system referred to as an external point of reference. Administrative adjustments done on institutional level.
9. Network policy-making	Statements (by the institution) have been made to the Ministry of Education and Culture. Their effect is hard to evaluate. Otherwise a rather passive approach to policy-making.

4.3.11 Aims on Different Levels

Each partner institution and each person involved has different aims and expectations placed on the programme. One of the common aims is to attract talented students, and this has been well realised. On the level of the individual student, the realisation of the learning outcomes and masters course-level aims are evaluated with a questionnaire the students fill in when graduating. (Kujanpää and Sinisalo 11.6.2009).

The consortium was formed to offer an extensive range of high-quality teaching to the students. Together the partners may offer a much more extensive and specialised programme than any individual university in Europe (Ylä-Jääski 17.9.2009). From the unit-level perspective, having good graduates that may pursue doctoral studies may also be an aim. According to Ylä-Jääski, this was not originally planned, but it has occurred during the programme period. The non-European students are more eager than national students generally, and also well-prepared to pursue doctoral studies (17.9.2009). The coordinator, TKK has recruited several doctoral students from the NordSecMob graduates, and partner institutions have selected some. Attracting good students to TKK is also seen as an institutional aim. (Kujanpää 11.6.2009).

In addition to the aims connected to the students, the educational cooperation in the NordSecMob consortium has inspired other possibilities of cooperating. It has also offered best practices and benchmarking opportunities, for example, in student selection (Kujanpää 11.6.2009). According to the view of the central administration, the institutional aims are mainly focused on the visibility, reputation and status of international educational programmes and the Erasmus Mundus masters courses in particular. The unit-level is aware of the importance of internationalisation from the institutional perspective, but the from their point of view Erasmus Mundus as a programme is not prioritised over other forms of internationalisation. In their view there might be need to update the institutional internationalisation strategy and make it more focused, for example, with principles of selecting partners in international cooperation. (Kujanpää 11.6.2009). The Erasmus Mundus programme is perceived as a tool of internationalisation both on the masters course and institutional levels. From the academic perspective, the aim of internationalisation was inbuilt in the cooperation, and the institutional aims were not important: "This is our own thing, not just acting according to institutional strategies" (Ylä-Jääski 17.9.2009).

Nevertheless, Erasmus Mundus is also seen as a tool for the implementation of the Bologna Process (Rantanen 11.6.2009). The effects of the Bologna Process are seen as positive, but there is some hesitation on whether they will actually be achieved (Ylä-Jääski 17.9.2009). The unit-level administration perceives the aims of the European Commission similarly as the central administration. In comparison to other projects and programmes funded by the European Union, the Erasmus Mundus programme is more tightly controlled than the others. The masters course-level aims have become clearer to the partners during the years of cooperation and they are not in conflict with the European Commission's aims. (Kujanpää 11.6.2009).

The aims of the European Commission are significantly more important for the masters course than institutional aims, as the continuation for the second phase of Erasmus Mundus is also dependant on meeting the aims set by EC during the first programme period. In many ways the European Commission has set “clear aims” for the Erasmus Mundus masters courses in the calls for applications, and fulfilling them is a requirement for the operation of the masters courses. The only things criticised are the Action 3 requirements, which cannot be fulfilled by most masters courses, and the exclusion of European students from EM scholarships. Due to the unrealistic requirements of Action 3, there are positive changes in incorporating non-European partners in Erasmus Mundus II. The reduction of the number of scholarships, on the other hand, will deteriorate the conditions of the programme. (Ylä-Jääski 17.9.2009). All in all, as the masters course has functioned well and the Erasmus Mundus programme has a positive image, there is no conflict between the aims on different levels. (Kujanpää 11.6.2009). The consortium members are satisfied with the programme and are willing to continue in the next programme phase on the same track (Ylä-Jääski 17.9.2009).

5 CONCLUSIONS

In this final chapter I will summarise the finding of the analysis and reflect on how the research questions have been answered. In addition the theoretical contribution and the policy and praxis implications of the research are evaluated. The analysis of the two masters course cases has focused on categorising the networks organising these courses and on the actions and decisions of the networks. This answers to the first and main research question of the thesis: What are the actions and decisions of programme adjustment and policy-making of the network in organising an Erasmus Mundus masters course?

The exchange of information and the related action of knowledge creation are present in the networks engaged in the Erasmus Mundus programme, but according to the expectations of the European Commission and like with other European Union funded activities, these networks should be involved in the process of *policy-making* and implementation (Ottewill 2005). Thus it may be claimed that the characteristics of the expected network are inscribed into the Erasmus Mundus programme call, in which the Erasmus Mundus masters courses are defined as *process-oriented action networks*, which engage in all the nine actions including *policy-making* (Bienzle et al. 2007, 15; Agranoff 2007, 43, 45). The European Commission has set the expectations that the Erasmus Mundus masters courses would influence national *policy-making* either directly or indirectly through programme adjustments. The European Commission particularly expects changes in national policies on degree regulations.

However, the documents and interviews of the Erasmus Mundus masters course coordinators revealed that the Erasmus Mundus networks are not true *action networks*, but remain *outreach networks*. To some extent the Erasmus Mundus consortia is able to make *programme adjustments*, but this is limited by institutional and national legislation and regulations. As the masters courses have been established without much prior experience on European Commission funded joint educational degree programmes, they have been able to influence the institutional guidelines and the development of shared practices. The *programme adjustments* are mostly related to aspects that the European Commission has set for the European higher education area. Thus it may be claimed that the Erasmus Mundus programme is a tool for enforcing the implementation of shared European practices in higher education.

The members of the Erasmus Mundus network (coordinator and partners) use limited decision-making power related to the practical realisation of the masters course. This is reflected in actions such as making student and scholar agreements, despite the fact that these are not necessarily legally binding. If there are conflicting decisions, the institutional regulations and especially national legislation overrides network decisions.²⁸

The possibility of *policy-making* is limited and it is only through indirect influence or network members personal position, such as the position as a member in a planning committee. However, the views interviewees had on the means of affecting national policy-making differed significantly. The institutional level actors felt that the Erasmus Mundus programme as such had an impact on national higher education policy, whereas the masters course-level actors were more sceptical, but even their views were varied. Generally, there might be need for influencing national higher education policy-making particularly in as much as it does not comply with the framework set by the European Commission. National legislation is the main restriction for mutual policy and programme adjustments, and particularly so when the network partners are operating under higher education legislations that are very different. The policy implications of this study suggest that theoretically educational networks could have more direct influence on policy-making, but currently their efforts are more long-term and indirect. These findings are very much in line with Agranoff's research where he claims that "it appears that too much emphasis may have been placed on the ability of networks to control government" (219).

There are differences of the masters course-level and on the institutional level views on the possibilities for *policy-making*. The institutional actors see the programmes and the Erasmus Mundus generally as more influential in the national *policy-making* arena than the masters course-level actors. Tahvanainen states that the Erasmus Mundus programme has been "surprisingly influential" (2.6.2009). From the point of view of the institutional level, the aims of the European Commission may have been even too optimistic: they have expected national policy changes particularly in degree structures in a short time span. (Tahvanainen 2.6.2009). Whereas, masters course-level actors find it harder to evaluate the influence of Erasmus Mundus programme and their own masters course in particular.

²⁸ Here decisions should be differentiated from non-decisional agreements and understandings (Agranoff 2007, 44-48).

The abovementioned challenges of *mutual* and *programme adjustment* and influencing *policy-making* are related to the answer to the second research question on the strengths and weaknesses of operating as a network. The obstacles of *mutual* and *programme adjustment* may also be considered as the main weakness of acting as a network, as the network members are able to make decisions only on a limited way.

In the ideal network cooperation all members have an equal status and the tasks are clearly and evenly divided between the participants. The interview analysis revealed that in both networks the coordinator has assumed a leading role and taken on most of the practical responsibilities of the network operations. This may be perceived as a weakness in the networks, although the coordinators themselves evaluated this division of responsibilities as a practical arrangement which has suited the network operations rather well.

The strengths of operating in a network are related to the possibilities of combining special expertise of each network member. The practise of planning a *joint curriculum* offers the possibility to collaborate intensively to offer joint courses. In addition to the internal aspects of the network there are also external benefits related to the cooperation: such as, the prestige attached to the status of an Erasmus Mundus masters course, but also the opportunity for additional funding are motivations for operating as a network. The organising of a masters course in cooperation with other institutions with good academic reputation, offers the opportunity to pursue high quality and particular attractiveness as an educational programme.

When networking is seen from both dimensions: from the institutional and from the disciplinary in the production of a masters programme, the status as an Erasmus Mundus masters course is viewed differently. The status of an Erasmus Mundus masters courses is particularly relevant from the institutional point of view. The institutions may promote the Erasmus Mundus masters courses in their general marketing and distribution of information (Tahvanainen 2.6.2009). Erasmus Mundus masters courses and other international joint masters courses and similar cooperation may be emphasised and prioritised in the international strategy of the university. However, it should be noted that on the masters course-level the institutional strategy may not be manifested be as clearly as the central administration would expect. Sometimes it seems that the strategy has only very little concrete effect on masters course-level. Despite this idea of the grass-roots level implementing the institutional strategy, the masters course-level actors are not aware of the institutional strategy, and

vice versa the central administration is not aware of the masters course-level aims (Tahvanainen 2.6.2009).

The third research question is related to the tasks of the coordinator. The coordinators of the two masters courses have assumed both the role as the head of the network, as well as, the execution of many practical tasks related to the organising of the masters courses. Opposed to the role and position of the network partners, the coordinator may have some authority in the network, although the leadership is mainly based on academic and personal merit. The coordinator may also have a leading role in the internal and limited decision-making available in the network. Notwithstanding, the operating of the network is mostly democratic and based on voluntariness. This view is supported theoretically as it may be claimed that the coordinator cannot coordinate the network effectively if the “degree centrality is high and its betweenness centrality is low” as it is more dependent on the other network members. As Dassen (2010) formulates, “strong ties restrain ego’s range of feasible actions. At the same time, the lack of weak ties limits ego’s opportunities to acquire attributes other than those that are easily available to ego via its strong ties. (102). With the Erasmus Mundus networks it should be noted that it is not only the strong ties within the network that restrict the coordinator’s actions, but also the coordinators dependency on its home institution.

The settling of possible disputes is dealt with very differently by the two Erasmus Mundus consortia. The NordSecMob consortium relies on informal practices agreed by the consortium members, whereas, the MSc in European Forestry consortium has clearly defined which national legislation is to be followed and the legal bodies where the dispute will be resolved. It is however noteworthy that unsettled disputes in such cooperation are very rare and neither of the masters courses has had any such incidents during the first programme period. Thus it could be said that in most cases the settlement of disputes is an important entry in the agreement, but resorting to it is rare.

To sum it up masters course networks are not strongly based on incentive coordination, although one the one hand there are some contracts regulating the actions of the network, but on the other hand only few internal or external monitoring mechanisms. The networks are mostly informally coordinated through cognitive coordination mechanisms based on networked trust (Lorenzen 2002, 24).

When examining two cases, comparison of the Erasmus Mundus masters course networks are possible. Despite the common framework of the Erasmus Mundus programme, the networks have somewhat different structures. The NordSecMob network is smaller and its geographical range is more limited. The range of the MSc in European Forestry network is wider as it has two levels: the masters course consortium and the action 3 partnership.

The differences of the masters course networks are manifested also in their formalisation, the documents regulating the network cooperation. The agreements made by the University of Joensuu and its partners and the Helsinki University of Technology and its partners are quite different from each other. It may also be anticipated that agreements in other consortia are varied in form and content. There are some very general guidelines offered by the European Commission and the Finnish Ministry of Education and Culture. Similarly, the Ministries of Education in other countries might have provided some guidelines that affect the compilation of agreements with institutions from those countries. Institutions themselves have also realised the need for instructions on making agreements and some have provided institutional guidelines, although often compiled later than the agreements in the first Erasmus Mundus application rounds. It could be concluded that the practices are varied and even haphazard, which significantly complicates the agreement process. Kujanpää rightly comments in her interview that the European Commission could offer a template for the agreement in the Erasmus Mundus masters courses (11.6.2009). This has not been realised for the second Erasmus Mundus phase, despite the need.

From the theoretical point of view, despite certain limitations, network theory can be applied in analysing joint educational programmes organised by several institutions. However, it may be questioned whether network theory explains the functioning of masters course consortia vis à vis the home organisations and their traditional management structures. Networks are organisationally loose and their coordinating is based on trust and informal coordination, Theoretically networks of organisations are expected to resist central direction, however, public management networks are not necessarily involved in national public policy-making and they may have difficulties in overcoming their central direction²⁹ (Agranoff 2007, 218-219).

²⁹ Central direction may refer to governmental or ministerial steering, whereas the steering exercised by the home organisation is not discussed.

Networks carrying out Erasmus Mundus masters courses are not ideal networks, due to their limited decision-making capabilities, however, the coordination realised in them is mostly based on the ideal of democratic networking. The findings on limited capability for *mutual* and *programme adjustment* and possibilities of influencing *policy-making* give rise to the question whether the national frame-work conditions of the Erasmus Mundus courses need to be changed. As the Erasmus Mundus programme calls reveal, the European Commission expects changes in national higher education policies towards more unified practices on European level. These changes are likely to take place gradually. However, it is unlikely that decision-making power would be decentralised from the institutional level to the actual network operators. Taking into account these aspects, even in the future the Erasmus Mundus networks will not become full-fledged *process-oriented action networks*.

As this research focused on the view-point of the coordinator, future research on complete networks with interviews of coordinators and partners alike, might give a more balanced view of the role and actions of the partner members in the networks. Another topic for future research could be related to the comparison of Erasmus Mundus networks with other educational networks. This would render more information on the actual effects of the framework of the Erasmus Mundus programme and the expectations of networking posed by the European Commission.

BIBLIOGRAPHY

- Agranoff, Robert (2007) *Managing Within Networks: Adding Value to Public Organizations*. Washington D.C.: Georgetown University Press.
- Axelsson, Björn and Geoffrey Easton eds. (1992) *Industrial Networks. A New View of Reality*. London: Routledge.
- Babbie, Earl (2004) *The Practice of Social Research*. Belmont: Wadsworth / Thomson Learning.
- Bienzle, Holger, Esther Gelabert, Wolfgang Jütte, Katerina Kolyva, Nick Meyer and Guy Tilkin. (2007) *The Art of Networking: European Networks in Education*. Wien: die Berater.
- Blomqvist, Carita (2007) *Avoim koordinatiomenetelmä Euroopan unionin koulutuspolitiikassa*. Tampereen yliopisto. <http://acta.uta.fi/pdf/978-951-44-6831-5.pdf>
- Castells, Manuel (2000) "Materials for an Exploratory Theory of the Network Society" *British Journal of Sociology* Jan-Mar 2000, Vol. 51 Issue 1, 5-24
- Clark, Burton (1983) *The Higher Education System. Academic Organization in Cross-national Perspective*. Berkeley: University of California Press.
- Dassen, Adrie (2010) *Networks: Structure and Action. Steering in and Steering by Policy Networks*. Enschede: CHEPS:UT.
- "Decision No 2317/2003/EC of the European Parliament and of the Council of 5th December 2000" Establishing a programme for the enhancement of quality in higher education and the promotion of intercultural understanding through cooperation with third countries (Erasmus Mundus) (2004 to 2008). *Official Journal of the European Union*. 31.12.2003.
- "Development of international Joint Degrees and double degrees: Recommendation of the Ministry of Education" (2004).
- Duke, Chris (2002) "The morning after the millennium: building the long haul learning university," *International Journal of Lifelong Education*, Vol. 21 No. 1, pp. 24-36.
- EUROPA- Education and training – Erasmus Mundus
http://ec.europa.eu/education/programmes/mundus/index_en.html (downloaded in 2.3.2009).
- "ERASMUS MUNDUS The Community Action programme for the enhancement of quality in higher education and the promotion of intercultural understanding through co-operation with third countries CALL FOR PROPOSALS (EAC/22/04) for the implementation of Action 1, Action 2 and Action 3 of the Erasmus Mundus programme in the academic year 2005/2006." EUROPEAN COMMISSION Directorate-General for Education and Culture Education.
- Finch, Andrew (2003) "REPORT JOINT DEGREE PROGRAMMES: With a focus on the creation of European Union Masters courses"

http://www.aqs.salford.ac.uk/erasmus_mundus/Joint_Degree_Programmes_Focus_on_European_Masters.pdf

- Finocchietti, Carlo, Giovanni Finocchietti, Luca Lantero, Maria Sticchi Damiani and Valentina Testuzza (2006) *Joint Degrees - A Hallmark of the European Higher Education Area?* Cimea - Centro d'informazione sulla mobilità e le equivalenze accademiche and Erasmus Mundus Programme - National Contact Point - Italy in agreement with the Italian Ministry for University and Scientific Research (Miur).
<http://www.cimea.it/servlets/resources?contentId=27075&resourceName=Inserisci%20allegato>
- Golafshani, Nahid (2003) "Understanding Reliability and Validity in Qualitative Research" *The Qualitative Report*, vol. 8 N° 4. December 2003, 597-607.
- Gornitzka, Åse and Peter Maassen (2000) "Hybrid Steering Approaches with Respect to European Higher Education." *Higher Education Policy*, vol. 13, 267-285.
- Gough, Brendan and Majella McFadden (2001) *Critical Social Psychology: An Introduction*. Basingstoke: Palgrave.
- Granovetter, Mark (1973) "The Strength of Weak Ties" *American Journal of Sociology*, Vol. 78, No. 6, May 1973, 1360-1380.
- Hall, Richard H. and Pamela S. Tolbert (2005) *Organizations: Structures, Processes and Outcomes*. Pearson, Prentice Hall.
- Harding, Sandra (1998) *Is Science Multicultural? Postcolonialisms, Feminisms and Epistemologies*. Bloomington: Indiana University Press.
- Håkansson, Håkan and Jan Johansson (1993) "The Network as a Governance Structure. Interfirm Cooperation beyond Markets and Hierarchies." In Gernot Grabher (ed.) *The Embedded Firm. On the Socioeconomics of Industrial Networks*. London: Routledge.
- Jones, Gareth R. (2004) *Organizational Theory, Design, and Change: text and cases*. Upper Saddle River: Prentice Hall.
- Jreisat, Jamil E. (2005) "Comparative Public Administration Is Back In, Prudently" *Public Administration Review*. March/April, vol. 65, no 2, 231-242.
- Kohler-Koh, Beate ed. (2008) *European Multi-level Governance: Contrasting Images in National Research*. Cheltenham: Edward Elgar Publishing.
- Lorenzen, Mark (2002) "Ties, Trust and Trade: Elements of a Theory of Coordination in Industrial Clusters." *International Studies of Management and Organisation*, vol. 31, no. 4, Winter 2001-2002. 14-34.
- Maassen, Peter and Johan P. Olsen eds. (2007) *University Dynamics and European Integration*. J Dordrecht: Springer, Higher Education Dynamics; Volume 19.
- Maassen, Peter and Frans van Vught (1994) "Alternative Models of Governmental Steering in

Higher Education. An analysis of steering models and policy-instruments in five countries.” In: Leo Goedegebuure and Frans van Vught (eds.) *Comparative Policy Studies in Higher Education*, Utrecht: LEMMA, 35-65.

Maiworm, Friedhelm (2006) *Results of the Survey on Study Programmes Awarding Double, Multiple or Joint Degrees*. Study Commissioned by the German Academic Exchange Service (DAAD) and the German Rectors' Conference (HRK) Kassel.
http://eu.daad.de/imperia/md/content/eu/sokrates/veranstaltungen/jd_report2.pdf

March, James G. and Herbert A. Simon (1964) *Organizations*. (5. edition). New York: Wiley.

Marshall, Catherine and Gretchen B. Rossman (2006) *Designing Qualitative Research*. Thousand Oaks: Sage.

Master of Science European Forestry web site www.uef.fi/europeanforestry (downloaded in 30.3.2009, updated September 2010).

Melin, Ulf and Karin Axelsson (2005) “Understanding Organizational Coordination and Information Systems – Mintzberg’s Coordination Mechanisms Revisited and Evaluated” In Bartmann, D. et al. (eds.) *Proceedings of the 13th European Conference on Information Systems, Regensburg, Germany, May 26-28, 2005*.
<http://www.vits.org/?pageId=10&pubId=527>.

Mitronen, Lasse (2002) *Hybridiorganisaation johtaminen*. Tampere University Press.

Mintzberg, Henry (1983) *Structure in Fives: Designing Effective Organizations*. New Jersey: Prentice-Hall.

Morgan, Gareth (2006) *Images of Organization*, Thousand Oaks: Sage Publications.

Möller Kristian and David Wilson (1995) (eds.) *Business Marketing: An Interaction and Network Perspective*. Boston: Kluwer Academic Publisher.

Neal, Donn C. (1988). “Introduction: New Roles for Consortia.” In Donn C. Neal (ed.) *Consortia and Interinstitutional Cooperation*. New York: American Council on Education and Macmillan Publishing, 1–23.

Newman, Isadore and Carolyn R. Benz (1998) *Qualitative – Quantitative Research Methodology: Exploring the Iterative Continuum*. Southern Illinois University.

NordSecMob webpage <http://nordsecmob.tkk.fi/index.html> (downloaded in 15.5.2009).

Official Bologna Seminar (2006) “Joint Degrees – A Hallmark of the European Higher Education Area?” Berlin, 21-22 September 2006.

Olsen, Johan P. (2008) “EU Governance: Where do We go from Here? Working Paper (No. 10, May 2008). ARENA www.arena.uio.no

Ottewill, Roger, Paul Riddy and Karen Fill (2005) “International networks in higher education: realising their potential?” *On the Horizon*. Vol. 13, No.3, Emerald Group Publishing

Limited, 138-147.

Ouchi, William G. (1980). "Markets, Bureaucracies, and Clans." *Administrative Science Quarterly*, 25 (March), 129-141.

Patton, Michael Q. (2002). *Qualitative Evaluation and Research Methods*. Thousand Oaks: Sage Publications.

Potter, Jonathan and Margaret Weatherell (1987) *Discourse and Social Psychology*. Sage.

Press Release 30.4.2010 <http://www.minedu.fi/OPM/Tiedotteet/2010/04/nimenmuutos.html?lang=fi>

Rauhvargers, Andreis and Chistian Tauch (2002) *Survey on Master Degrees and Joint Degrees in Europe*. Geneva: EUA Thema.

http://www.eua.be/eua/jsp/en/upload/Survey_Master_Joint_degrees_en.1068806054837.pdf

"Realising the European Higher Education Area." Communiqué of the Conference of Ministers responsible for Higher Education in Berlin on 19 September 2003.

"Recommendation on the Recognition of Joint Degrees." The Committee of the Convention on the Recognition of Qualifications Concerning Higher Education in the European Region. June 2004.

<https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstrnetImage=320284&SecMode=1&DocId=822138&Usage=2>

Rihoux, Benoit (2006) "Qualitative Comparative Analysis (QCA) and Related Systematic Comparative Methods: Recent Advances and Remaining Challenges for Social Science Research" in *International Sociology* Vol. 21, No 5, 679-706.

Rubin, Herbert J. and Irene S. Rubin (2005) *Qualitative Interviewing. The Art of Hearing Data*. 2nd edition. London: Sage.

Scott, Richard W. and Gerald F. Davis (2007) *Organizations and Organizing: Rational, Natural and Open System Perspectives*. Upper Saddle River: Prentice Hall.

Smith-Doerr, Laurel and Walter W. Powell (2005) "Networks and Economic Life." in *Handbook of Economic Sociology*, (eds.) N.J. Smelser and R. Swedberg. Princeton, NJ: Russell Sage Foundation/Princeton University Press, 379-402.

"Strategy for the Internationalisation of Higher Education Institutions in Finland 2009-2015." (2009) Publications of the Ministry of Education, Finland 2009:23.

http://www.minedu.fi/OPM/Julkaisut/2009/Korkeakoulujen_kansainvalistymisstrategia_2009_2015.html?lang=fi&extra_locale=en

Tirronen, Jarkko. (2006) *Korkeakoulujen välisen yhteistyön muodot - konsortio, federaatio ja yhdistyminen*. Kuopion yliopiston julkaisuja F. Yliopistotiedot 40.

Thompson, James D. (2003). *Organizations in Action: Social science bases of administrative theory* with a new preface by Mayer N. Zald and a new introduction by W. Richard Scott. New Brunswick (N.J.).

Williamson, Oliver E. (1996). *The Mechanisms of Governance*. New York and Oxford: Oxford University Press.

Yin, Robert K. (2009) *Case Study Research: Design and Methods*. Newbury Park: Sage.

Appendix 1

Structure of the Interview / Haastattelurunko

Background questions for all interviewees / Taustakysymykset kaikille haastateltaville

- Who are you? / Kuka olet?
- What is your previous work experience? / Minkälainen aikaisempi työkokemus sinulla on?
- How long have you worked in relation to this Erasmus Mundus masters course? / Kuinka kauan olet työskennellyt tähän Erasmus Mundus ohjelmaan liittyen?
- What are your main duties and tasks in relation to this Erasmus Mundus masters course? Do you have other tasks or duties (if yes, what)? / Mitkä ovat keskeisimmät tehtäväsi ja velvollisuutesi tähän Erasmus Mundus ohjelmaan liittyen? Hoidatko lisäksi muita tehtäviä (jos kyllä, mitä)?

Interview themes for the academic and administrative personnel of the masters course / Haastatteluaiheet ohjelman akateemiselle ja hallinnolliselle henkilöstölle

- Describe the *structure* of the consortia (size of the consortia and members and number of students), field(s) / Kuvaa maisteriohjelmakonsortionne rakenne koko (konsortion koko, jäsenet ja opiskelijoiden määrä), tieteenala(t)
- How was your consortia formed? – duration, previous cooperation / Miten konsortionne on syntynyt? – aikajänne, aikaisempi yhteistyö
- Structures of the consortia (boundaries, exclusiveness hierarchy, rules, formalisation, voluntariness) / Konsortion rakenteet (rajat, mukaan liittyminen, hierarkia, säännöt, virallisuus, vapaaehtoisuus)
- Relationships between the coordinator and the partners, roles, identity (moderation, distance, centrality, betweenness, interconnectedness, equivalence, density, centrality) / Koordinaattorin ja jäsenten asemat, roolit, identiteetti konsortiossa, koordinaattorin ja partnereiden suhteet (etäisyys partnereiden välillä, yhteydet partnereiden välillä, välittämiskyky, suhteet, asemat (samalaiset vai erilaiset), koordinaattorin keskeisyys)
- What are the aims of the masters course and the consortia? (set by the consortia itself) / Mitkä ovat maisteriohjelmanne ja konsortionne tavoitteet (itse asettamanne)?
- How do you perceive the European Commission aims set for EM masters course? / Miten näette Euroopan komission EM ohjelmalle asettamat tavoitteet?
- Are the aims of the European Commission and your consortia in line? / Ovatko Euroopan komission tavoitteet yhdenmukaiset konsortion omien tavoitteiden kanssa?
- What are the institutional (university) aims set for your EM masters course? / Millaisia tavoitteita instituutionne (yliopisto) asettaa EM ohjelmalle?
- How are responsibilities assigned and divided within the consortia (division of labour and responsibility)? Responsibilities of the coordinator, each partner and shared responsibilities / Minkälainen on konsortionne

vastuunjako? koordinaattorin, partnereiden vastuut ja yhteiset/jaetut vastuut

- Describe and define the responsibility and coordination in the following categories of Action/Decision making in the EM masters course and in your university (how do you participate? What is the process in the consortia?) / Kuvaa ja kerro vastuunjaosta ja koordinaatiosta EM maisteriohjelmassa ja yliopistossanne seuraavissa toimintaan/päätöksentekoon liittyvissä asioissa ja prosesseissa (miten itse osallistutte? Prosessi konsortiossa?)

- information dissemination internally and externally, information system (ICT etc.) / tiedonvälitys sisäisesti ja tiedotus ulospäin, tiedotusjärjestelmä (esim. tieto- ja viestintäteknologia)
- reports, studies / raportointi, tutkimukset
- planning an strategic work / suunnittelu ja strategiat
- decision making / päätöksenteko
- (joint) development of the master consortia / maisteriohjelmakonsortion (yhteinen) kehittäminen
- financial and personnel resources / talous- ja henkilöstöresurssit
- feed back and quality assurance / seuranta ja laadun varmistus

- What is the support network like (who would you contact department, faculty, central administration, ministry, Education Board) in academic and administrative issues? / Minkälainen tukiverkko ohjelmassa on hallinnollisissa ja akateemisissa asioissa? (kehen otetaan yhteyttä? Esim. laitos, tiedekunta, keskushallinto, kv-asiat, ministeriö, opetushallitus)

- Mutual adjustment and coordination: what kind of changes have the participants made in their operations in the programme with participants and in the masters course? / Keskinäinen koordinaatio: minkälaista sopeuttamista ja muutoksia toimijoissa ja ohjelmassa on tapahtunut?

- What kinds of means and tools of coordination you have? / Mitä koordinoitikeinoja ja -välineitä on käytettävissä?
- What kind of leadership or management is used in the consortia? Or on the institutional level? / Minkälaista johtamista konsortion sisällä on? Entä instituutiotasolla?

- Influencing national higher education policy-making. Do you believe that the EM programme has an effect? / Kansalliseen korkeakoulupolitiikkaan vaikuttaminen. Uskotteko EM ohjelmanne vaikuttavan?

- What is your general experience of the programme? / Mikä on yleinen kokemuksenne EM ohjelmasta?

Interview themes of the central administration (international affairs) / Haastatteluteemat yliopiston keskushallinnolle (kansainväliset asiat)

- Describe and define the responsibility and coordination in the following categories of Action/Decision making in the EM programme and in your university (how do you participate? What is the process in the consortia?) / Kuvaa ja kerro vastuunjaosta ja koordinaatiosta EM maisteriohjelmassa ja yliopistossanne seuraavissa toimintaan/päätöksentekoon liittyvissä asioissa ja prosesseissa (miten itse osallistutte? Prosessi konsortiossa?)

- information dissemination internally and externally, information system (ICT etc.) / tiedonvälitys sisäisesti ja tiedotus ulospäin, tiedotusjärjestelmä (esim. tieto- ja viestintäteknologia)
- reports, studies / raportointi, tutkimukset
- planning an strategic work / suunnittelu ja strategiat
- decision making / päätöksenteko
- (joint) development of the masters consortia / maisteriohjelmakonsortion (yhteinen) kehittäminen
- financial and personnel resources / talous- ja henkilöstöresurssit
- feed back and quality assurance / seuranta ja laadun varmistus

- What is the support network like (e.g. who would you contact in the department, faculty, central administration, ministry, Education Board, European Commission) in academic and administrative issues? / Minkäläinen tukiverkko ohjelmassa on hallinnollisissa ja akateemisissa asioissa? (kehen otetaan yhteyttä? esim. laitos, tiedekunta, keskushallinto, kv-asiat, ministeriö, opetushallitus, Euroopan komissio)
- Mutual adjustment and coordination: what kind of changes have the participants made in their operations in the masters course with participants and in the programme? / Keskinäinen koordinaatio: minkäläistä sopeuttamista ja muutoksia toimijoissa ja ohjelmassa on tapahtunut?
 - What kinds of means and tools of coordination you have? / Mitä koordinoitkeinoja ja -välineitä on käytettävissä?
 - What kind of leadership or management is used in the consortia? Or on the institutional level? / Minkäläistä johtamista konsortion sisällä on? Entä instituutiotasolla?
- Influencing national higher education policy-making. Do you believe that the EM programme has an effect? / Kansalliseen korkeakoulupolitiikkaan vaikuttaminen. Uskotteko EM ohjelmanne vaikuttavan?
- How do you perceive the European Commission aims set for EM programme? / Miten näette Euroopan komission EM ohjelmalle asettamat tavoitteet?
- How do you perceive the aims set by the masters course and the consortia itself? / Miten näette maisteriohjelman ja konsortion itselleen asettamat tavoitteet
- What kinds of aims has the institution (university) set on the EM programme? / Millaisia tavoitteita instituutionne (yliopisto) asettaa EM ohjelmalle?
- What is your general experience of the programme? / Mikä on yleinen kokemuksenne EM ohjelmasta?

Appendix 2

Schedule of the Interviews Conducted

Interviews related to the Master of Science in European Forestry masters course at the University of Joensuu

- Liisa Tahvanainen, Head of International Relations Office, University of Joensuu/ University of Eastern Finland
Tuesday 2.6.2009 at 14:30 in Aurora room 3034, Joensuu (53 minutes)
- Pauliina Karvinen MSc European Forestry planning officer, University of Joensuu
Tuesday 2.6.2009 at 20:00 in her home in Viinijärvi (1 hour 48 minutes)
- Paavo Pelkonen, Professor, MSc European Forestry academic coordinator, vice-dean of the Faculty of Forestry, University of Joensuu
Wednesday 3.6.2009 at 9:30 in Borealis room 302, Joensuu (1 hour 7 minutes)
- Marjoriitta Möttönen, MSc European Forestry planning officer, University of Joensuu
Wednesday 3.6.2009 at 11:00 in Borealis room 301, Joensuu (1 hour 14 minutes)

Interviews related to the NordSecMob - Master's Programme in Security and Mobile Computing the at the Helsinki University of Technology

- Mervi Rantanen, Head of International Student Services, International Student Services, Helsinki University of Technology
Thursday 11.6.2009 at 9:30 in room y249e, Otakaari 1, Espoo (1 hour 30 minutes)
 - Eija Kujanpää, planning officer NordSecMob coordinator and Anna Stina Sinisalo, project secretary of international masters courses, Helsinki University of Technology Thursday 11.6.2009 at 12:00 in room B233, Konemiehentie 2, Espoo (2 hours 22 minutes)
 - Antti Ylä-Jääski, Professor, academic coordinator of NordSecMob, Helsinki University of Technology
Thursday 17.9.2009 at 13:30 phone interview (55 minutes)
-