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1 Executive summary

Introduction
This document constitutes the advice of the expert panel to the Accreditation Organisation of the Netherlands and Flanders (NVAO) regarding the initial accreditation of an academic Master of Science programme in Supply Chain Management, which is offered at the Rotterdam School of Management of the Erasmus University Rotterdam.

The proposed curriculum is currently taught as one of eleven specialisations of the Master of Science in Business Administration, which in itself is a consecutive master building further on the Bachelor of Science in Business Administration. According to the applicant, the main reason for proposing an independent accreditation of the supply chain management specialisation is to improve transparency by issuing a degree that reflects the curriculum and by formulating admission criteria that are more in line with the content and structure of the curriculum and allow for an increased external intake beyond the requirements for a master degree in business administration.

In order to obtain an opinion on the quality of the proposed programme, the NVAO convened an expert panel, which studied the programme’s information file at a preparatory meeting. At this meeting, the panel listed a series of questions, which the programme answered in the run-up to the site visit. During the site visit, the panel met with representatives of the faculty and programme management, as well as with teaching staff, students, alumni and professional contacts.

Assessment
The assessment framework of the NVAO consists of themes and standards.

Notwithstanding some comments and suggestions which are mentioned under the standards concerned in chapter 4 and which are summarised below, the panel considers that the programme fulfils the accreditation criteria for eighteen out of nineteen standards and for all six themes.

All standards related to aims and objectives, staff, services, internal quality assurance and conditions for continuity are developed in a satisfactory way. The panel is particularly positive about the number and quality of staff announced for this master programme, as well as about the academic orientation and master level of the proposed curriculum.

While recognising that the overall curriculum fulfils most of the NVAO requirements, the panel has some reservations with regard to certain standards under the theme “curriculum”. The “study load” is not sufficiently developed according to the panel, who cannot accept that a programme organises a twelve-month curriculum but then states that graduation is aimed for after 16 months in case students want to follow the most relevant pathway.

Given these considerations, the panel advises the NVAO to take a positive decision regarding the quality of the proposed academic Master of Science programme in Supply Chain Management.

Recommendations and comments
Overall, and this appreciation is valid for almost all standards, the panel’s opinion is that the programme fulfils the requirements of the NVAO initial accreditation in a satisfactory way. However, one would have expected more than a merely satisfactory fulfilment of the requirements from a programme that is already accredited and uses the new accreditation as a part of its aspirations to become a world class programme.
The panel would have expected more fundamental choices with regard to the profile of the programme and the translation of a supply chain management philosophy in the curriculum. Applying for a separate initial accreditation opens up a lot of opportunities according to the panel, but the programme has not yet truly seized the occasion to set itself in the market as a top-class programme. Until now students are left with a lot of choice regarding the internship, the tutoring or the elective courses, while these are issues that should be better decided on by the programme management. Furthermore, there may be a tension between the objectives of the overall Business Administration programme and its management on the one hand and the ambitions of the specific master on the other hand. There is no department or unit that takes prime responsibility or claims prime ownership for the programme. Finally, the panel has the impression that the applicant has not yet fully grasped to which extent the new programme might be different in terms of intake: it will be important for the programme to align the "regular" bachelors (who opt for a consecutive master degree) with students with a technical background and students from a variety of (non-EU) countries.

The Hague, 19 March 2010

On behalf of the Initial Accreditation panel convened to assess the Master of Science in Supply Chain Management at the Erasmus University Rotterdam (Rotterdam School of Management),

Prof. Dr. J. Wijngaard
(Chair)  
Mark Delmartino, M.A.
(Secretary)
2 Introduction

2.1 The procedure
On 19 October 2009, the NVAO received a request from the Erasmus University of Rotterdam (EUR) to start the initial accreditation procedure for the academic Master of Science in Supply Chain Management (SCM) of the Rotterdam School of Management (RSM). Such initial accreditation procedure is required when a recognised institution wants to offer a programme and award a recognised master's degree. The NVAO convened the following panel of experts:
– Prof. dr. J. Wijngaard (The Netherlands), chairman;
– Prof. dr. J.A.A. van der Veen (The Netherlands), member;
– Prof. dr. B. Samii (Belgium), member;
– Ms. G.J. Wijnen (The Netherlands), student member.

On behalf of the NVAO, Niek Pronk, policy advisor, was responsible for the process-coordination. The external secretary, Mark Delmartino, drafted the experts' report. Short CVs of the panel members are included in Annex 1. The panel has based its assessment on the standards and criteria described in the NVAO Initial Accreditation Framework. All panel members signed a statement of independence and confidentiality.

The panel studied the information file and held a preparatory meeting on 25 January 2010 in Utrecht. During this meeting the panel members presented their initial impressions and listed those issues that required clarification. This list was sent to the EUR (RSM) who replied in writing after three weeks. The site visit to the RSM took place on 18 February 2010. During this visit, the panel met with representatives of the faculty management, programme management, teaching staff, students, alumni and the professional field. The schedule of the site visit is presented in Annex 2.

Immediately after the site visit interviews, the panel formulated its preliminary assessments per theme and per standard on the basis of the interviews during the site visit and the information in, and written clarification to, the application form. On 8 March 2010, the secretary produced the draft version of this report. Where necessary the panel amended the report, which was then finalised by both chairman and secretary on 18 March 2010.

2.2 Panel report
Chapter four contains the assessment of each theme and standard and therefore constitutes the core element of this assessment. The quality of the programme is judged on the basis of nineteen standards and six themes mentioned in the initial accreditation framework. For each standard the panel presents an outline of findings, its considerations and a conclusion. The outline of the findings are the objective facts as found by the panel in the programme documents, in the additional documents and during the site visit. The considerations are the panel's subjective evaluations regarding these findings and the importance of each. The considerations presented by the panel logically lead to a concluding assessment.

The third chapter gives a description of the programme including its position within the EUR and within the higher education system of the Netherlands. The panel concludes the report with a table containing an overview of its assessments per theme and per standard. The
composition of the panel, the programme of the site visit and an overview of the source materials are included in the annexes to this report.
The first chapter of this report is the executive summary of the report, while the current chapter is the introduction.
3 Description of the programme

3.1 Overview

Country The Netherlands
Institution Erasmus University Rotterdam
Programme Master of Science in Supply Chain Management
Level master
Orientation academic (wo)
Degree Master of Science
Location Rotterdam
Mode of study full-time
Field of study Business Administration

3.2 Profile of the institution

The EUR (www.eur.nl) has been in existence in its present form since 1973 when the Medical Faculty Rotterdam and the Netherlands School of Economics merged. The principal tasks of the EUR are the generation and transfer of knowledge proceeding from a high degree of social engagement. To this end, the university pursues knowledge in an inquiring, critical, investigative and flexible manner, with a strong international orientation and based on the values of professionalism, teamwork and fair play. The EUR concentrates its education and research activities in three scientific domains: economy and management, medicine and health, law, culture and society. According to data from 2008, the EUR has about 19500 students and 2150 faculty and support staff, divided over seven faculties. The faculty of Business Administration has the biggest number of students, about 7000.

In 2004, RSM (www.rsm.nl) merged with Erasmus University's Faculty of Business Administration and the Erasmus Research Institute of Management to become Rotterdam School of Management, Erasmus University. RSM offers a full suite of undergraduate and graduate programmes, from pre-experience bachelor, masters and a PhD programme, to tailored in-company programmes for senior executives and a top-ranked international full-time MBA. The proposed curriculum is currently taught as one of eleven specialisations of the Master of Science in Business Administration, which is a consecutive master building further on the Bachelor of Science in Business Administration.

RSM has eight academic departments: Decision and Information Sciences; Organization and Personnel Sciences; Marketing Management; Management of Technology and Innovation; Strategic Management and Business Environment; Financial Management; Accounting and Control; Business Society Management. The departments reflect the management research and teaching scope of the School. Each faculty member is appointed in one of these departments. Faculty from the departments Decision and Information Sciences and Management of Technology and Innovation are involved in the delivery of courses throughout the Supply Chain Management programme.
Profile of the programme
Supply Chain Management

According to the application form, SCM emerged in the 1980’s and is therefore a relatively new field of study into integrative management compared to established fields such as production, marketing and finance. Being relatively new, in focusing on design, planning and execution of supply chain infrastructure and operations, SCM theory localizes and expands theories in economics (transaction costs theory, agency theory), strategic management (competitive advantage, resource based view) and organisation (organisational learning, intra- and inter-organisational networks).

The programme is using the following definition: a supply chain is a networked system of businesses and channel partners involved in the provision of product and service packages for customers, where these customers can be other businesses or consumers. A supply chain spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption. SCM is the management of processes and people involved in sustaining and enhancing a supply chain. SCM thus involves the design and planning of (collaborative) inter-firm arrangements and supporting facilities concerning the supply chain plus the ensuing coordination and execution of goods-flow operations and activities.

Objectives – Intended learning outcomes
Pages 6 and 7 of the application form list the intended learning outcomes, which are clustered in three aspects: contents, skills and attitude.

I. Content related aspects

Upon completing the programme students know how to apply SCM principles and qualitative and quantitative tools in alignment, design, planning and execution of SCM under uncertainty conditions of supply and demand so as to create value for customers and the supply chain partners. In particular, students

A. SCM system alignment:

1. understand the reciprocal relationships between the supply chain and the business, social and political contexts it operates with and in;
2. can use conceptual models of supply chain designs aligned with business models for creating fit between supply chain integration strategy and the nature and scale of uncertainty conditions of supply and demand for effective governance of supply chain relationships;
3. valuate outsourcing and/or partnerships that involve information and risk sharing and shared governance of processes and infrastructure.

B. SCM process/execution/outcomes:

1. know how to use and apply basic models for logistics and information process analysis and design;
2. can use (formal) models for estimating key efficiency and service levels performance impacts and trade-offs arising from economies of scale and economies of scope for alternatives for storing, retrieving and moving inventory efficiently through pooling supply chain infrastructure and inventory risks across time, products, channels, and geography.

The understandings and capacities listed under A and B are assumed under an array of societal, corporate, production, organisational, financial and/or technological constraints, SCM enablers/constraints, such as: IT infrastructure and decision support
system requirements; the implications of global supply lines and regional differences in logistics; and the need for sustainable business.

II. Skills related aspects
Upon completing the programme students can

A. Cognitive and Intellectual Skills
1. identify options and utilize the benefits of circumstance or opportunity to create value from supply chain management;
2. independently plan, set-up, execute and report on a small scientific research, inclusive an account of methods applied, into the diagnosis, the (re)design, and/or evaluation of completed supply chain management projects and operations;
3. condense information about findings or lessons learnt from the research for generating new knowledge or for improvement of future business processes for effective communication with persons from science and practice.

B. Practical Skills
1. develop a focused and disciplined approach to developing and implementing plans and controls for supply chain management;
2. suggest balanced decisions, propose policies and find solutions to problems on the basis of at times incomplete, inaccurate or uncertain information and to be able to uphold assumed positions with sound arguments/consideration in the light of scientific/professional criticism;
3. appreciate and draw on leadership skills (supporting, coaching, delegating, directing) and other management skills (organizing, planning, staffing, and controlling);
4. communicate effectively both orally and in writing, using a range of media and work effectively in diversified groups.

III. Attitude related aspects
Upon completing the programme students show the ability to:
1. understand and deal sensibly with the ethical and normative ways of thinking in scientific reflection;
2. recognize own limitations, such as cultural limitations and restrictions;
3. sense and assess consequences from own actions for others; to value integrity (honesty, trust, fairness, respect, and responsibility) and act accordingly.

Programme
The current programme is offered since September 2003 and is a specialisation programme within the MSc in Business Administration. The yearly intake varies between 60 and 80 students. About one fourth is international students and the vast majority (75%) of students is male. The graduation rate in the SCM programme is reportedly comparable to that of other MSc BA specialisations and to those customary in The Netherlands: 10% completes the programme in one year, 60% in two years, 20% takes longer and 10% eventually drops out.
The following table which is taken from page 10 of the application form presents the SCM curriculum as it is currently offered and will continue to be offered in case of accreditation:

<table>
<thead>
<tr>
<th>Core courses (compulsory) Block 1 and 2</th>
<th>20 EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCM01 Introduction Supply Chain Management</td>
<td>1</td>
</tr>
<tr>
<td>SCM02 Designing and Managing the Supply Chain</td>
<td>5</td>
</tr>
<tr>
<td>SCM03 Global Logistics and Information Technology</td>
<td>4</td>
</tr>
<tr>
<td>SCM04 Facility Logistics</td>
<td>5</td>
</tr>
<tr>
<td>SCM05 Distribution Networks</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective courses* (choice of two) Block 3 and 4</th>
<th>20 EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Programme Electives (choose one)</td>
<td></td>
</tr>
<tr>
<td>SCM06 Managing Uncertainty in Supply Chains</td>
<td>10</td>
</tr>
<tr>
<td>SCM07 Strategic Sourcing</td>
<td>10</td>
</tr>
<tr>
<td>SCM08 Business Networks and Inter-organisational Systems</td>
<td>10</td>
</tr>
<tr>
<td>SCM09 Business Process Excellence</td>
<td>10</td>
</tr>
<tr>
<td>SCM10 Closed-Loop Supply Chains</td>
<td>10</td>
</tr>
<tr>
<td>Master Free Elective (choose one)</td>
<td></td>
</tr>
<tr>
<td>&lt;to be chosen from among the other electives offered at RSM&gt;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Master Thesis Project Block 3 and 4</th>
<th>20 EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>60</td>
</tr>
</tbody>
</table>

* Students may choose to complete the electives through an exchange with an international partner university

**New programme in the Netherlands**
In the last few decades developments in infrastructure and technology (highway systems, IT, containerization) have been changing the economics of organizing for supply, thereby creating new opportunities and challenges for studying and implementing SCM solutions. Still, in academic business education the position of SCM in the curricula remains varied and diverse. There are programmes in business administration with specializations such as the Master of Science in Business Administration offered at the universities of Groningen and Twente next to master programmes dedicated to operations and supply chain management (logistics) at Tilburg University and the Technical University Eindhoven.

**New programme for the institution**
In 2003-2004 the Master of Science in Business Administration (MScBA) was established at RSM, building upon the specialisations of the previous 'doctorandus'-degree. It functions as RSM's consecutive master and has grown over the years from an intake of 741 at the beginning to 1023 in 2008-2009. The MScBA is an umbrella programme currently spanning 11 specialisations, amongst which SCM. The specialisations follow a common structure. The domains of study in the diverse specialisations all relate to business administration, but are distinct in their main focus within business administration.

RSM proposes now to independently accredit a number of specialisations, amongst which SCM. Independent accreditation allows first of all to improve the transparency by issuing a degree that reflects the curriculum. Currently all students receive an MSc in Business Administration, regardless of the specialisation they have followed. Secondly, independent accreditation allows to formulate admission criteria that are more in line with the content and
structure of the curriculum. Currently a student gains admission to the MScBA, regardless of which specialisation, with a broad university business bachelor degree, whereas students with other degrees could also successfully complete the SCM specialisation.

RSM therefore applies for initial accreditation of a programme, which as such has been in existence for many years and - as part of the MScBA – is accredited. Neither the curriculum nor the learning outcomes are changing; the application mainly concerns a change in status of the degree.

**Credits**
The academic Master of Science programme SCM is conceived as a full-time one-year programme of 60 EC.

**Initial accreditation**
Initial accreditation is necessary because it is a new programme which is not yet registered in the CROHO, the central registry for higher education programmes. This registration is important because of the acknowledgement of the qualification. At this moment the programme is a specialisation of the MSc in Business Administration and as such registered as croho 60644.
4 Assessment per theme and per standard

This chapter presents the evaluation by the assessment panel of the six themes and nineteen standards. The panel has reproduced the criteria for each standard. For each standard the panel presents (1) a brief outline of its findings based on the programme documents and on documents provided by the institution and the site visit, (2) the considerations the panel has taken into account and (3) the conclusion of the panel. The panel presents a conclusion for each of the six themes based on the underlying standards.

4.1 Aims and objectives

4.1.1 Subject-/Discipline-specific requirements (standard 1.1)

The intended learning outcomes of the programme correspond with the requirements set by professional colleagues, both nationally and internationally and the relevant subject/discipline and/or professional practice concerned.

Outline of findings

The proposed MSc SCM trains students in understanding and analysing operations and supply chain management issues in a firm with an accent on those issues where service concerns of external parties play a role. So the curriculum has an emphasis on issues close to the logistics boundaries of a firm. The curriculum sets the stage for this perspective from the very start through the inclusion of issues such as alignment and international transportation and logistics service providers. Logistics is a service providing time and place utility. In the courses building the curriculum this utility is mostly discussed in its relation to goods flow. The intended learning outcomes are listed in the previous chapter.

Asked by the NVAO panel to clarify how the curriculum relates to national and international developments and concepts, the programme responded that the production element (material requirements planning or enterprise resource planning, capacity requirements planning, master production scheduling, line balancing, sequencing and shop floor control) is discernable in the array of courses offered by APICS (Advancing Productivity, Innovation and Competitive Success). The MSc SCM differs with the APICS course offer in this respect. On the other hand there is a substantial overlap in areas such as forecasting, inventory management, quality management, and the strategic management of resources.

The MSc SCM curriculum is closer to the domains identified by ELA (European Logistics Association), for instance in the explicit attention paid to facilities management. The ELA specifications are reflected in the 500-hours European Masters in Logistics (EMLog) programme organised by the Vereniging Logistiek Management (VLM) and Tilburg and Eindhoven Universities through TIAS/NIMBAS targeting post-experience students.

The focal themes of the DINALOG research programme are “multi-company service logistics” (based on the cradle-to-cradle principle) and “main ports in control”. The MSc SCM connects to both themes through courses on Global Logistics and Information Technology and Closed-loop Supply Chains. Faculty of the MSc SCM is currently developing multiple projects within these themes. The proposed MSc SCM curriculum is broader, though.
The SCOR process (plan, source, make, deliver and return) reference model as such is not a programme component of the curriculum. The principles behind process modelling and associated measurements are included in the curriculum, e.g. under Business Process Excellence.

Finally, the MSc SCM contributes to filling the gap identified in the Resolution of the European Parliament of 4 September 2008 calling for training and education in transportation and logistics.

Considerations

First and foremost, the panel wants to underline that the intended learning outcomes are in line with what one can expect of an academic pre-experience Master’s programme in SCM. This, however, should not come as a surprise given that the curriculum is currently offered as a specialisation programme of an accredited Master’s programme in Business Administration. In this respect the proposed programme meets the subject/discipline specific requirements set by the NVAO framework.

One of the applicant’s strategic objectives regarding this initial accreditation process is to increase the external intake into the programme. A more international group with more diverse educational backgrounds will correspond more closely to the professional environment many graduates will work in. It was the applicant itself who wrote in the application form that for a business school with global aspirations, RSM needs to design and implement high-quality programmes that are attractive to students across diverse cultural and educational backgrounds.

With this objective in mind, the panel is somewhat disappointed that the programme is not more specific in its aims, more outspoken in its definition and more clear in how aims and definition are translated into the programme. Asked by the NVAO panel for additional information on the specific profile of the programme and how its definition of SCM is reflected in the curriculum, the applicant reiterated the definition it had used before and which is given in the previous chapter, under item 3.3. The discussions during the site visit confirmed the panel’s view that the programme lacks a clear and consistent focus.

According to the panel, there is a deliberate vagueness and even uncertainty: the programme does not make real choices, everything remains the same, and they merely want greater flexibility in accepting students. However, if RSM’s ambition is to be frontrunner, then there should be clear indications as to what is core and what is elective, what students have to do and what they may do, what students need to know beforehand and what they may acquire during the SCM programme. On the other hand, the panel understands that this is after all an initial accreditation, which requires an assessment in the planning stage of a programme, and the panel therefore expects that more structure will be put in the programme, that clarity of what SCM is will grow, that not so many important decisions will be left to the students, and that the vagueness and uncertainty will be fixed and resolved.

Conclusion

The panel assesses the standard 1.1 ‘discipline specific requirements’ as satisfactory.
4.1.2 Master level (standard 1.2)

The intended learning outcomes of the programme correspond with the general, internationally accepted descriptions of a Master's qualification.

Outline of findings

The following table, which is taken from page 7 of the application form shows under which learning outcomes (see previous chapter) of the MSc SCM each of the Dublin descriptors are addressed.

<table>
<thead>
<tr>
<th>Qualifications that signify completion of the second cycle (Master level) are awarded to students who:</th>
<th>Corresponding learning outcomes of SCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with Bachelor's level, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context</td>
<td>IA1, IA2, IA3, IB2, IIB1</td>
</tr>
<tr>
<td>2. can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study</td>
<td>IA2, IA3, IB1, IIA1, IIA2, IIA3</td>
</tr>
<tr>
<td>3. have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements</td>
<td>IB2, IIB2, IIB3, III1, III2, III3</td>
</tr>
<tr>
<td>4. can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously</td>
<td>IIB3, IIB4, III1</td>
</tr>
<tr>
<td>5. have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous</td>
<td>IIA2, III2, III3</td>
</tr>
</tbody>
</table>

Considerations

The panel is very outspoken in its assertion that the proposed programme is designed at master level. The curriculum is currently offered as a specialisation in an accredited academic master programme. Moreover, the intended learning outcomes of the proposed programme are in line with the Dublin descriptors. Finally, the students, who follow the SCM specialisation under the MSc BA programme, emphasised the complexity of the curriculum and confirmed the panel's opinion about the master level.

Conclusion

The panel assesses the standard 1.2 'Master level' as satisfactory.
4.1.3 Academic orientation (standard 1.3)

The intended learning outcomes of the programme correspond with the following descriptions of a Master (academic orientation):

- The intended learning outcomes are derived from requirements set by the scientific discipline, the international scientific practice and, for programmes to which this applies, the practice in the relevant professional field.
- An academic master (WO-master) has the qualifications to conduct independent research or to solve multidisciplinary and interdisciplinary questions in a professional field for which academic higher education is required or useful.

Outline of findings

The MSc SCM is embedded in scientific methodology and theory while SCM practice serves as point of reference. The connections of the MSc with the Erasmus Research Institute on Management (ERIM) and its programme Logistics & Information Systems (LIS) secure that the MSc is firmly based in scientific methodology and theory, which in turn allows graduates to pursue a career in science.

The MSc SCM is geared towards students independently developing, motivating, debating and defending recommendations for SCM challenges and problems. All parts of the programme require that students show understanding and skills in analysing and solving cases and mini-research assignments. The assignments are based on theories and methods pertinent to a particular domain and contribute to the research skills of the students.

The practical orientation of the programme is reflected not only in the courses, but also in the fact that the majority of students combine an internship with (the extraction of data for) their thesis. To prepare and train students in scientific work they need to pass a research clinic before being allowed to embark on the thesis project. In the research clinic students learn to make choices on the type of research, the research strategy and data collection methods.

Students need to complete an individual research project from start to finish. All theses need an extensive critical literature study, sound scientific methods of analysis as well as a discussion of the research’s value and contribution in the light of previous knowledge.

Considerations

When discussing the application form during its preparatory meeting, the panel had the impression the programme was more practice directed than research oriented in the sense that it did not offer many opportunities for students wishing to pursue research on graduation. The applicant conceded that the proposed MSc SCM is not a research master, but also mentioned that the basics in research methods are (re)addressed in the research clinic that is part of the thesis trajectory. Moreover, the electives - and to some extent also the core courses - are mostly developed from the research teaching staff is involved in. Some faculty also explicitly offers specific theory-orientated thesis projects to students, in line with their ongoing research. Students who wish to pursue a PhD will nonetheless still have to do some additional course work, as this is a compulsory part of any PhD trajectory. There is no obstacle for MSc SCM graduates, however, to enter such a programme.
The additional clarifications and the discussions with students and alumni during the site visit have convinced the panel that the programme is quite successful in turning students into hands-on professionals with an appropriate academic toolkit. While not a research master, the programme offers students who wish so the opportunity to prepare for a research career while it also prepares other students in becoming useful professionals that are able to solve inter- and multidisciplinary issues.

Notwithstanding the clear fulfilment of all requirements for this standard, the panel would like to mention one issue that may lead to considerable tension in future: while the corporate contacts were all very satisfied with the quality of both students and graduates, the examination committee emphasised during the site visit that it only evaluates the academic quality of the courses and theses. The panel therefore calls upon the programme management to adopt in future a clear and consistent position regarding on the one hand the applied research methodology (often adopted when pursuing in-company research) and on the other hand the academic quality of the thesis.

**Conclusion**
The panel assesses the standard 1.3 ‘Academic orientation’ as **satisfactory**.

**4.1.4 Concluding assessment of Theme 1 ‘Aims and objectives’**
The panel assesses all three standards ‘Subject/discipline-specific requirements’, ‘Master level’ and ‘Academic orientation’ as satisfactory. The overall assessment of theme 1 ‘Aims and objectives’ is therefore **positive**.
4.2 Curriculum

For a description of the programme, see above, chapter 3.3.

4.2.1 Requirements for academic orientation (standard 2.1)

The proposed curriculum meets the following criteria for academic orientation:

- The students develop their knowledge through the interaction between education and research within the relevant disciplines
- The curriculum corresponds with current developments in the relevant discipline(s) by verifiable links with current scientific theories
- The programme ensures the development of competences in the field of research
- Where appropriate, the curriculum has verifiable links with the current relevant professional practice.

Outline of findings

The domains and concepts studied in SCM theory lie in the two broad, partially overlapping, perspectives of SCM system alignment and SCM process/execution/outcomes, as presented on page 10 of the application form.

<table>
<thead>
<tr>
<th>A. SCM system alignment</th>
<th>B. SCM process/execution/outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intra- and inter-organisational networks</td>
<td>1. Process improvement and information</td>
</tr>
<tr>
<td>2. Contracting and incentive design</td>
<td>2. Trade-off analysis for service and costs</td>
</tr>
<tr>
<td>3. Revenue/risk sharing and partnerships</td>
<td>3. Exploiting economies of scale and scope across entities, activities, geography and time in the supply chain (logistics)</td>
</tr>
</tbody>
</table>

While centring on a particular business, the SCM system alignment perspective views the supply chain as a system of networked goods and information flows involving multiple stakeholders such as suppliers, outsourcers, customers and logistics service providers. The issue then is to induce the stakeholders into behaviour that promotes supply chain performance. The SCM process/execution/outcomes perspective attempts to identify patterns for coordination of stakeholder planning and operations plus the necessary infrastructure (facilities, equipment, decisions support) needed for the supply chain operating at the efficient frontier of the costs-service trade-off. The combined perspectives offer specific theories and methods of analysis for achieving time and place utility of products and services. Among the more formal methods used in these analyses are inventory theory, queuing theory, and integer-linear optimisation.

In addition to an introduction to core supply chain methods and theories the MSc programme discusses theories developed and issues studied in the following research themes, which are part of the ERIM LIS programme: supply chain optimisation and planning; closed-loop supply chain management; terminal optimisation; transportation management; and smart business networks.

The thesis challenges the student and develops his/her talents into performing independent set-up and execution of a research project, thereby integrating and extending methods and theories introduced in the programme’s courses. The majority of the students combine their
thesis with an internship in a company, thereby reinforcing the links with the current relevant professional practice.

Considerations
On the basis of the information provided in the application form and fine-tuned during the site visit, the panel acknowledges the academic orientation of the proposed MSc SCM. The teaching staff has good credentials as researchers in areas that are relevant for the programme. Moreover, the interaction between education and research is supported structurally through the thesis project, which all students have to complete successfully. The course descriptions annexed to the application form convince the panel that the courses are well designed. The literature lists indicate that students will be introduced to up-to-date state-of-the-art academic materials.

In order to ensure the basic methodological research knowledge for all students, the programme is organising a research clinic (RC). This RC is structured around the fundamental choice between practice-oriented thesis projects (often but not always in the form of an internship) and theory-oriented thesis projects (offered by RSM professors in line with their ongoing research). All master students need to follow the entire RC and are required to write an essay reviewing two existing RSM theses of choice; one being practice-oriented and the other theory-oriented. In that way, all students are aware of the differences between the two types of projects, and can make an informed choice.

While such RC could be highly useful, the panel is not entirely convinced about the way the RC is organised now. The timing at the beginning of block two seems rather late and the time it takes appears to be too short. The thesis is an important element of the programme (and the most important stumbling block for graduation). According to the panel, the RC should put the thesis in the wider framework of the study and be very explicit about the knowledge and skills students need to have before they start the thesis. One way of doing so could be to have a series of RC sessions spread throughout the year dealing with research preparation, literature review, data, report drafting.

The panel has reviewed the 15 most recent theses, which the programme had put at disposition during the site visit: most theses are good but basic and do not give the impression that students dispose of all research methodological skills. The programme should therefore decide whether the RC should offer students a proper introduction into all relevant methodological approaches or rather an individualised but in-depth introduction to those approaches that are needed for students to deliver adequate research theses. Furthermore, although the area of SCM is inter-disciplinary and is supposed to cross borders between organisational units and between firms, the thesis topics appear to be mono-disciplinary and falling within the more traditional single firm approach. Also in this sense, the panel recommends the programme to be clearer about the programme objectives and how these should be reflected in the thesis topics.

Although not required by the programme, students very often perform an internship period during which they gather some professional practice while collecting (and processing) data for their practice-oriented thesis project. The panel acknowledges the potential advantages of such internship period, but finds the current position of the programme towards such internships not appropriate: the programme should decide whether or not to include such research-oriented internship (be it at a private company or in a research institution) as a
compulsory part of the curriculum, and if so, guide, control and follow-up the internship-based research more closely.

The panel is convinced that there is sufficient flexibility within the programme to consider its suggestions and possibly adopt these in the near future.

Conclusion
The panel assesses the standard 2.1 ‘Requirements for academic orientation’ as satisfactory.

4.2.2 Correspondence between the aims and objectives and the curriculum (standard 2.2)

| The intended curriculum, the educational concept, the study methods and the learning assessments reflect the intended learning outcomes. |
| The intended learning outcomes have been adequately transferred into the educational goals of (parts of) the intended curriculum. |

Outline of findings
The appendices 1a (courses, educational goals and learning outcomes) and 1b (courses and educational goals) on pages 29 and 31 of the application form stipulate how each educational goal of each course in the SCM curriculum contributes to one or more of the learning outcomes. They also illustrate how the entire curriculum covers the various content, skills and attitude related learning outcomes.

Furthermore, the following overview, which is taken from page 12 of the application form, shows the varying study methods and assessments so as to fit the contents, skills and attitudes of the learning outcomes and educational goals:
<table>
<thead>
<tr>
<th>Course</th>
<th>Study methods</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction Supply Chain Management</td>
<td>(Computerized) simulation game, case presentation, field trips</td>
<td>Group assignment (case)</td>
</tr>
<tr>
<td>Designing and Managing the Supply Chain</td>
<td>Front lectures, case discussions, presentations, (computerized) games</td>
<td>Both individual and group assignments, take-home exam, class participation</td>
</tr>
<tr>
<td>Global Logistics and Information Technology</td>
<td>Front lectures, case discussions</td>
<td>Group and individual assignments, class participation</td>
</tr>
<tr>
<td>Facility Logistics</td>
<td>Front lectures, case discussions, field trips</td>
<td>Groups assignment, case reports (connected to field trips), class participation</td>
</tr>
<tr>
<td>Distribution Networks</td>
<td>Front lectures, (computerized) games</td>
<td>Written exam (open book), group assignments</td>
</tr>
<tr>
<td>Managing Uncertainty in Supply Chains</td>
<td>Lectures, case-discussion, computer practical (Arena)</td>
<td>Group assignments, consultancy report (including oral defence), presentations</td>
</tr>
<tr>
<td>Strategic Sourcing</td>
<td>Front (including guest) lectures, case discussions, exercises, company visits, presentations</td>
<td>Individual assignments , group case assignments, real-life case, participation, oral exam</td>
</tr>
<tr>
<td>Business Networks and Inter-organisational Systems</td>
<td>Front lectures, case discussions, computerized game, seminar</td>
<td>Group assignments, paper, case-based exam (closed book)</td>
</tr>
<tr>
<td>Business Process Excellence</td>
<td>Front (including guest) lectures, assignments, group discussions, company visits, field studies</td>
<td>Group case assignments, mini research report, class participation</td>
</tr>
<tr>
<td>Closed-Loop Supply Chains</td>
<td>Front (including guest) lectures, case discussions, student presentations</td>
<td>Written exam, group case assignments, research report</td>
</tr>
</tbody>
</table>

Asked about the pedagogical methodology, i.e. a particular approach in didactics for the SCM curriculum, the applicant indicated that all RSM programmes work with the idea of ‘critical thought, practical action’. This concept refers to multidisciplinary academic content and research (critical thought) on the one hand and to exposure to real business life on the
other hand (practical action). There are numerous ways in which the programme incorporates practical aspects for students, such as company cases, internships, business projects, guest lecturers, case competitions and so on. There is a general policy of working in small scale groups (to allow interaction) and of working with diverse teaching methods, circumstances permitting. In contrast to problem based learning, RSM uses conventional knowledge based learning, combined with intensive interaction and a variety of teaching methods.

Considerations
The panel recognises the qualities of the current curriculum and acknowledges the relevance of the adopted educational concept, study methods and learning assessments for the intended learning outcomes. The discussions with students, alumni and the professional field, moreover, emphasised that students appreciate the courses, the attention to cases and the variety of practice-oriented insights. Professionals indicated that they are looking for graduates who do not only have a SCM background, but also have specific social skills, notably for negotiation and conflict resolution.

While overall, learning outcomes have been adequately transferred to the educational goals of the intended curriculum, the panel sees some room for further improvement. First of all, it is difficult to see how certain learning outcomes are concretised in the programme: this is particularly the case for leadership skills (IIB3) and recognising one's cultural limitations and restrictions (III2). Secondly, the programme does not seem to prepare for a future cohort that is more diverse in terms of background: if there will be a bigger external intake, then there will be need for finding common ground and bringing all students as soon as possible up to speed with the basic SCM developments. An introductory course focusing on content rather than getting to know each other could be an option. Because skills and attitude are important features of a successful SCM graduate, there is need for more structural skills training, all the more so in view of more heterogeneous student groups (including more engineers).

Conclusion
The panel assesses the standard 2.2 ‘Correspondence aims and curriculum’ as satisfactory.

4.2.3 Consistency of the curriculum (standard 2.3)
The contents of the curriculum are internally consistent.

Outline of findings
The programme is presented in the previous chapter. Other tables in the application form (and in part copied in this report) show how learning outcomes, Dublin Descriptors, educational goals, courses, study methods and assessments are inter-connected.

The central object of the curriculum is supply chains: they can be wide and long, but the basic principles for its management have great similarity and analogy for varying supply chain segments and contexts, thereby creating a foundation for common approaches and methods to its management and study. This is reflected in the curriculum’s lay-out with courses.
The curriculum is not new, but the one currently offered as SCM specialisation in the MSc BA programme. It consists of two core blocks (10 EC each), one compulsory master elective focussing on SCM (10 EC), one master free elective (10 EC), and a thesis project (20 EC). In total at least 50 of the 60 EC therefore focus on SCM topics. The modules in a core block having a size of 5 EC, which makes it possible to have the programme contents reflected in more detail in the list of courses. The electives are currently set up as mini-programmes, but the applicant is moving towards applying the model for the core courses also to the electives, which would consist of two courses identified as such. The applicant also sees opportunities for modifications of the curriculum after becoming independent of the Business Administration structure.

The first core courses tend to spend more time on knowledge and understanding of SCM system alignment, while the later core courses place more emphasis on knowledge and understanding of SCM process/execution/outcomes. The master programme electives include more elements from cognitive, intellectual, and practical skills. The added value of the thesis is in the development and application of cognitive, intellectual and practical skills.

One elective can be chosen freely from among other master programs offered at RSM. Examples of courses are strategic control, customer relationship management, innovation in services, next generation web information systems, new business development, etc. SCM relates to several other business areas and the programme wishes to give students some latitude in exploiting that knowledge. Until now, students more often than not choose their free elective from among their master programme electives. As an alternative to the electives, students can follow SCM-related courses at an exchange university. Until now about 10% of the SCM students take part in an exchange programme.

In principle the programme electives are open to all MScBA students. In practice, the percentage of non-SCM students in the courses is small, ranging up to a maximum of around 20% for strategic sourcing. If not for the SCM students the courses would not be given. About 10% of non-SCM students attend the core courses.

Many theses concern design-oriented research, a majority of which extract data (case study, interviews, questionnaires, databases) from an internship within a company to build the analysis on. Internships are currently not a compulsory element in the curriculum, and it is not the programme’s intention to make it so. The programme nevertheless is pleased that the majority of students see the benefits of doing an internship, to gain practical experience and/or to gather research data for their thesis. The programme stimulates and facilitates students to pursue one (through the Career Services office). Foreign students are likewise supported in their choice but experience shows that most foreign students are eager to keep their (time) investment limited to 12 months. With respect to internships there exist general requirements and standard contracts.

Annually, the programme is reviewed and discussed with the chair and the academic. This review is also based on input from student evaluations on both courses and overall programme. Moreover, programme faculty regularly meets to discuss programme contents. The most recent meeting was dedicated to the thesis and included a proposal to enhance the efficiency and effectiveness of the thesis pathway through the RC.
Considerations

At its preliminary meeting the panel listed a number of issues related to the curriculum and its consistency that required clarification. The written replies provided additional information which was further refined during the discussions at the site visit. The panel considers that the building blocks for a good quality programme are definitely present and that the individual courses are of good quality. The interconnection between learning outcomes, Dublin descriptors, educational goals, courses, study methods and assessments is also a clear indication that the programme has been well conceived. While the panel is pleased to hear that the applicant has plans to use the opportunities for differentiation of the curriculum after becoming independent of the Business Administration structure, it would have preferred to see this differentiation presented already in the curriculum that is submitted for initial accreditation.

The panel, however, does not share the opinion of the applicant with regard to the equal division of study points among core and elective courses. According to the panel, the attention to core courses should be more explicit: certainly in view of a bigger external intake, it will be important to ensure that as many students as possible have as much common knowledge as possibly, leaving some room – but less than is the case now - for individual specialisation in electives. The intended move towards more modular elective courses is positive, but not sufficient yet.

The applicant has emphasised during the site visit that the programme has its roots in two departments who know each other very well and that the ownership of the programme remains equally with both units. While the panel has no reason to doubt the positive atmosphere among the departments, there is some concern that the programme is organised to serve the (teaching) interests of the respective units rather than to optimise the coverage of the SCM domain. The panel for instance did not receive a clear answer on how the follow-up would be organised in case certain courses and/or staff had to be removed from the programme. The panel, moreover, noticed that part of the curriculum seems to be push-oriented, meaning that courses are organised (or not) based on the availability of staff, like it seems to be the case with IT related courses. This may also be a factor in the high proportion of electives. Asked about this, the applicant conceded for instance that IT is only a small part of the curriculum, but that a number of IT developments are included in the discussions.

Conclusion

The panel assesses the standard 2.3 ‘Consistency of curriculum’ as satisfactory.

4.2.4 Workload (standard 2.4)

The intended curriculum can be successfully completed within the set time, as certain programme-related factors that may be an impediment to study progress are eliminated where possible.

Outline of findings

Students can complete the curriculum of 60 EC within twelve months: blocks 1 and 2 run from September to December and comprise the compulsory core courses for a total of 20 credits; blocks 3 and 4 run from January until the end of May, during which the elective courses are taken for a total of 20 credits and the thesis project is prepared in the RC. The
remainder of the curriculum year is used for the production of a master thesis, which is worth 20 credits, as well.

In general a 5 credit core course has two-three weekly plenary sessions of 2-3 hours each. Much of the time spent by students will however be on plenary, group or individual discussions, preparations and assignments. Electives require more time for cases or assignments. The applicant is not in a position to put a precise number of hours spent on each type of activity, but is monitoring how students experience the work load. Until now, the workload is perceived as too high rather than too low and further evaluations will be used to study, fine-tune and where necessary adapt the workload.

One of the two aims of the RC is to help improve timely graduation. In collaboration with the thesis coordinator, RC staff is now identifying possible alternative timelines for thesis projects. Students are told how and where to maximise their chances of graduating within 12 months and as of this academic year (2009-2010), a structure of "back-to-campus" meetings is set up for thesis students. These meetings aim at sharing experiences, exchanging ideas with other staff than the supervisor, and creating some "peer pressure" to improve the throughput times of the thesis projects. For those students opting for a thesis in combination with a company internship, the aim is for graduation in December, after 16 months.

**Considerations**

According to the panel, there is quite some room for improvement with regard to the workload. While the panel understands very well the issues presented by the applicant (timely graduation is the exception rather than the rule in Dutch master programmes, the internship can boost the professional career of the individual student, courses can only be given during certain periods of the year), it cannot accept from a principle point of view that a programme organises a twelve-month curriculum but then states that graduation is after 16 months, in case students want to follow the most relevant pathway. The distribution of workload during the year is also experienced as uneven by the students. The period in which electives take place is considered as calm, while the first semester is experienced as quite heavy.

The panel finds the current position of the applicant towards internships not appropriate: the programme should decide whether or not to include such research-oriented internship (be it at a private company or in a research institution) as a compulsory part of the curriculum, and if so, guide, control and follow-up the internship-based research. If the internship becomes compulsory, then it should be accommodated in such a way that the curriculum can still be finished within 12 months. If the internship is not compulsory, then the programme should ensure that sufficient practice-oriented and theory-oriented thesis projects are available in-house in order to offer the opportunity for students to finish their course programme and thesis within 12 months. A more even workload distribution over the year would probably also contribute to a more timely graduation.

The panel understands from its meetings during the site visit that – subject to some reorganisation in planning - there are possibilities to organise the MSc SCM programme in twelve months. According to the panel, it is of the highest importance – notably for the reputation of the applicant – that all students are treated equally and that in particular international (non-EU) students have the same opportunities also with regard to internship.
based research as their local (EU) colleagues: the curriculum needs to be structured in such a way that timely graduation after twelve months is possible for all.

**Conclusion**
The panel assesses the standard 2.4 'Workload' as **unsatisfactory**.

### 4.2.5 Admission requirements (standard 2.5)

The structure and contents of the intended curriculum are in line with the qualifications of the incoming students: a bachelor's degree and possibly a selection (with a view on contents of the discipline).

**Outline of findings**
Presently the disciplinary admission criteria of the MSc BA and therefore of the specialisation SCM is an academic bachelor degree in business administration. This degree should be comparable to RSM's bachelor degree, or equivalent. Students with a professional bachelor degree in business should first follow the RSM pre-master programme. The MScBA is a consecutive master and RSM students will be admitted automatically. External students need to meet additional criteria. Being one degree programme, it is not possible to differentiate the admission requirements according to the specialisation, which in turn limits external intake. The wish to formulate admission criteria that are more in line with the structure and content of the curriculum is a driving force behind this application for initial accreditation.

For the stand alone programme MSc SCM the following admission criteria are formulated: a university bachelor degree in the following areas (or equivalent): Business Administration; Economics / Economics & Business; Engineering, such as Mechanical Engineering, Industrial Engineering, Systems Engineering, etc. Operations management, business statistics, and quantitative methods must have been part of the bachelor curriculum. Applicants also need to have acquired elementary knowledge of accounting methods in their university bachelor programme. Because it is the firm intention of the applicant that the new programme remains a consecutive master, the same additional criteria for external students will apply: GPA of 70 % of all available marks; GMAT score of > 600, and an English language test (if applicable).

The applicant expects that the new master programme will be followed by students with a greater variety in preliminary training or education. The rigorous admission requirements will reportedly ensure that incoming students form a sufficiently homogeneous group in terms of knowledge and academic competence.

**Considerations**
From a formal point of view, the admission requirements are correct and therefore the panel has to give a positive assessment.

Nevertheless, the panel thinks that much more could have been done in terms of admission requirements if one really wants to set up a high quality programme. This is all the more true according to the panel when taking into account that the applicant goes through the effort of requesting a separate initial accreditation for a curriculum that is already accredited on the assumption that it wants to attract a more diverse intake through the admission
criteria. To be interesting for a more varied population of bachelors from economics, business and engineering, it is necessary to formulate more precise admission requirements.

The main reservation of the panel is related to the fact that the requirements are unbalanced: they are too easy for the RSM students and too difficult for other students. It remains to be seen if the additional criteria for external students would pass a thorough examination on equality of access and opportunities. While the applicant is probably afraid to lose its own students when the new SCM programme would not be a consecutive master, it is rather discriminatory to ask only external students to pass tests which as such have nothing to do with the curriculum and from which RSM students are exempted. If these additional requirements, which as such are perfectly reasonable according to the panel, would also apply to RSM students, then this would send a strong message with regard to the quality of the programme while it would probably make no major difference with regard to the intake of RSM students.

Conclusion
The panel assesses the standard 2.5 ‘Admission requirements’ as satisfactory.

4.2.6 Credits (standard 2.6)

The programme meets the legal requirements regarding the range of credits for an academic master's programme (wo-master): a minimum of 60 credits.

Outline of findings
The programme is conceived as a one-year full-time programme of 60 EC. The courses and their respective credits are clear.

Considerations
The panel acknowledges that the MSc SCM programme fulfils the formal criteria.

Conclusion
The panel assesses the standard 2.6 ‘Credits’ as satisfactory.

4.2.7 Concluding assessment of Theme 2 ‘Curriculum’

The panel assesses the standards ‘Requirements for academic orientation’, ‘Relationship between objectives and programme’, ‘Curriculum consistency’, ‘Admission requirements’ and ‘Credits’ as satisfactory, while the standard ‘Study load’ is deemed unsatisfactory. Given that only one standard gets a negative assessment and that the panel clearly sees room for improvement on this standard, its concluding assessment of the theme ‘Curriculum’ is positive.
4.3 Staff

4.3.1 Requirements for academic orientation (standard 3.1)

The programme meets the following criteria for the deployment of staff for a programme with academic orientation (wo): Teaching is principally provided by researchers who contribute to the development of the subject/discipline.

Outline of findings
RSM staff is engaged in teaching, research and in the case of tenured faculty, also managerial tasks. In principle, faculty spends 40% of their time on teaching, 40% on research and 20% on administrative or managerial tasks. In addition to the actual delivery, teaching also includes developing new and redesigning existing courses. Staff at RSM is academically qualified: all full and associate professors and 96% of the assistant professors have a doctoral degree. All staff teaching in the SCM programme has a doctoral degree.

Although there is no chair in SCM as such, all chairs directly focus on different sub-areas within SCM, such as logistics and operations management, operations management and technology, operations research and information sciences, quantitative logistics, purchasing and supply management. SCM related research interests include among others closed-loop SCM, warehousing, facility logistics, retail logistics, human factors in logistics decision making, people logistics, passenger transport and scheduling, ICT applications in logistics, etc.

Considerations
The panel is aware that the faculty is of high academic quality. All teachers are involved in research which is pertinent to the topic of SCM.

Conclusion
The panel assesses the standard 3.1 ‘Requirements for academic orientation’ as satisfactory.

4.3.2 Quantity of staff (standard 3.2)

Sufficient capacity is made available to be able to start the proposed programme
Sufficient capacity is made available to be able to continue the proposed programme

Outline of findings
RSM has invested in strengthening and expanding its faculty. Seven lecturers from each of the two departments DIS and MTI are currently teaching in the SCM programme. In the new programme, RSM will build on this capacity and extend somewhat the number of lecturers.

The staff:student ratio for the current programme is an estimated 1:17, based on a calculation explained in the application form. Early 2009, approximately 4.3 fte were available for teaching related research connected to the SCM programme. The ratio for the specific SCM programme will be around 1:15, given that additional lecturers will be involved. Staff will not be increased because of accreditation. However, the portfolio of competences will be broadened and additional faculty will be hired, which in turn will give the opportunity to offer a wider range of elective topics.
In addition to the academic faculty there is professional and dedicated supporting staff. The Educational Office resorts under the Dean BSc & MSc Programmes and provides management and support services for all pre-experience programmes. Each programme has a dedicated programme manager. A number of service centres, such as the international office, study advisors, etc. look after specific aspects. The EQUIS Peer Review Report of 2009 mentioned that “The number of core faculty [for the whole school] is still relatively low compared to the number of students, but it seems to be compensated by an efficient support system for the faculty, which allows for an efficient use of the core academic resources”

Considerations
The panel considers the planned student:staff ratio to be good. The increase in staff covering a wider variety of topics will moreover be beneficial to the programme. While this was not obvious to notice, the panel acknowledges the positive assessment in the EQUIS Peer Review Report with regard to the efficient use of supporting staff.

There is room for improvement, though, when it comes down to gender diversity in faculty. About one fourth of the students are female, while there is only one female teaching staff. The applicant is aware of this and takes gender into account when recruiting staff. The share of female PhD students, who frequently assist in courses, is reportedly higher. On the other hand, there is diversity in terms of the nationality of teaching staff.

Further to a question from the NVAO panel on the programme’s ownership, the applicant clarifies that this formally rests with the programme management, i.e. the Dean of the BSc and MSc programmes. The effective, day-to-day ownership rests jointly with faculty from the departments of DIS and MTI. There is commitment to the new programme because the two departments are to a substantial extent dependent on the teaching in the MSc courses and because all faculty is involved in SCM through their research.

Conclusion
The panel assesses the standard 3.2 'Quantity of staff' as satisfactory.

4.3.3 Quality of staff (standard 3.3)

Outline of findings
Nearly each RSM teaching staff holds a doctoral degree and 99% of the faculty has a research voucher from the Erasmus Research Institute of Management (ERIM). All RSM research takes place within ERIM and is organised in five main themes: (i) Business Processes, Logistics and Information Systems; (ii) Organisation; (iii) Marketing; (iv) Finance and Accounting; (v) Strategy. Faculty is awarded different levels of research vouchers based on rigorous research output criteria. The accreditation committee of the Association of International Business Schools (AACSB) concluded in 2008 that ERIM is a unique strength, and has resulted in significantly enhanced research productivity since its formation.
Every faculty member is subject to an annual performance appraisal conducted by his or her managing director. It focuses on research output, course evaluations, administrative tasks, academic and industrial exposure, and involvement in obtaining external funding.

Since 2007 RSM is implementing a tenure track programme that offers potential assistant professors positions for a maximum of six years. In addition to the annual appraisal, there is also a mid-term evaluation and a second assessment after five years. According to the EQUIS Peer Review Report in 2009, “RSM has an extremely talented and diversified faculty, competitive with the best in Europe. RSM has managed to attract a highly qualified, loyal and energetic group of young faculty. The new tenure track system will further enhance this development.”

RSM offers a programme aimed at providing faculty with the necessary pedagogical skills to develop and deliver academic programmes. This basic teaching qualification is a modular programme, which can take up to 250 hours to complete, has been developed in cooperation with the EUR expertise centre on education (RISBO) and is compulsory for assistant professor level and up. To acquire, retain and deepen knowledge and skills needed to support RSM’s mission and long-term strategy, RSM has developed a career and mobility policy which aims to stimulate academic staff to shape their own careers by switching careers or deepening functional knowledge.

Considerations
According to the panel, the quality of staff is excellent. RSM is very well equipped to meet the aims and teaching objectives of the MSc in SCM.

Conclusion
The panel assesses the standard 3.3 ‘Quality of staff’ as **satisfactory**.

### 4.3.4 Concluding assessment of Theme 3 ‘Staff’

The panel assesses the standards ‘Requirements for academic orientation’, ‘Quantity of staff’ and ‘Quality of staff’ as satisfactory. Its concluding assessment of the theme ‘Staff’ is therefore **positive**.
4.4 Services

4.4.1 Facilities (standard 4.1)

Intended housing and facilities are adequate to achieve the learning outcomes.

Outline of findings

RSM is located on the Woudenstein campus of the EUR, together with most other faculties of the University. The pre-experience programmes are housed in the T-building, which is equipped with all modern facilities and hosts most of the classrooms. Its size and layout is sufficient to serve the needs of over 1,200 new first-year students annually, and 6,500 students in total.

Currently, Blackboard is used throughout the portfolio of all RSM programmes. In addition, many of the courses are recorded and available online, not only for use in normal classes but also in special general electives that involve teams of students based in different locations throughout the world. For the pre-experience programmes SIN-Online (Student Information Network) is used throughout the Erasmus University. SIN-Online offers a number of communication tools to get in contact with students and acts as their primary source of information.

The central university library contains around 800,000 books and 5,400 periodicals and has access to more than 200 online databases and CD-ROMs in the fields of economics, business administration, public administration, law, social sciences, political science, arts, history and philosophy. The library’s catalogues can be accessed on-line from a remote computer that is connected to RSM’s computer network. This provides staff and students with the opportunity to access the library from home via the Internet. The Business Information Centre (BIC) is the reference library of RSM with an extensive collection of books and journals, working papers, staff publications, student theses, and annual reports of 900 Dutch and international companies. The BIC has on-line connections to relevant host organisations, databases and search facilities offering online access to libraries containing journals, business, company, financial and news information. As of June 2008, master theses are submitted electronically and stored in a dedicated repository.

Considerations

The facilities are adequate for the different specialisations of the MSc BA and seem appropriate for the needs of the proposed MSc SCM. The applicant confirmed the panel’s assumption that there are no specific facilities (planned) for the new master programme as all facilities are arranged at the level of RSM.

Conclusion

The panel assesses the standard 4.1 ‘Facilities’ as satisfactory.
4.4.2 Tutoring (standard 4.2)

There is adequate staff capacity to provide tutoring as well as information provision for students, and these are adequate in view of study progress.

Outline of findings

Tutoring and student counselling are with the Educational Office and provided for all RSM BSc and MSc programmes. The Educational Office is also a contact point for internships and international exchange. All students can call upon the student counsellor for information, help or advice. In addition, the University has a central department hosting professional counsellors and psychologists for students.

On the panel’s questions whether the SCM programme envisaged specific tutoring and/or counselling services that go beyond the existing services at faculty level, it was answered that the current SCM tutoring system consists of: (1) a research clinic; (2) thesis coaching (coach and reader); and, starting spring 2010 (3) “back-to-campus” discussion meetings on thesis progress. General services with respect to student counselling are shared at the level of RSM.

Considerations

The panel is convinced that the existing structures at RSM level are adequate to perform proper student tutoring. The existing and forthcoming arrangements with regard to counselling the research project are also appropriate.

According to the panel, there is nevertheless some room for a more active follow-up of students at the level of the individual programme, in this case the proposed MSc SCM. For instance, students have indicated during the site visit that the small scale of the programme was one of the criteria for choosing this programme. The panel thinks that this particular feature of the programme has not received sufficient attention from the applicant yet. Moreover, a more diverse intake with more external (and thus hitherto unknown) students requires a more pro-active follow-up from staff, which should not be left solely to the central educational office of RSM. Finally, the applicant seems to expect students to take charge of their tutoring, while this is essentially not primarily a student’s task.

The panel therefore proposes to appoint a mentor to the cohort, which follows-up all (and in particular the external) MSc SCM students and plays a coordinating role with regard to skills and attitude development (see under 4.2.2) and the research clinic (see under 4.2.1)

Conclusion

The panel assesses the standard 4.2 ‘Tutoring’ as satisfactory.

4.4.3 Concluding assessment of Theme 4 ‘Services’

The panel assesses the standards ‘Facilities’ and ‘Tutoring’ as satisfactory. Its concluding assessment of the theme ‘Services’ is therefore positive.
4.5 Internal quality assurance system

4.5.1 Systematic approach (standard 5.1)

A system of internal quality assurance is in place, which uses verifiable objectives and periodical evaluations in order to take measures for improvement.

Outline of findings
The internal quality assurance system (IQAS) of RSM is becoming a balanced, cyclical and long term endeavour. Different performance indicators indicate the quality level in the different areas and the possible need for quality improvement. External audits by bodies such as AACSB, EQUIS and NVAO are important for the development and evaluation of programmes and for identifying strengths and weaknesses. NVAO accredited the pre-experience programmes in 2006. In 2008 AACSB reaccredited RSM and its programmes. In 2009 EQUIS visited the school and produced a very positive peer review report on RSM.

The IQAS at RSM integrates with the activities of the QA working group at university level, in which RSM participates.

The most common performance indicators for RSM are systematic and cyclical evaluations covering a variety of aspects, such as programme design, content and implementation; realised academic and professional objectives, and HRM policies.

Since 2002, there is an extensive digital evaluation system. After each course, students are given standard questions with regard to issues such as quality of education, testing, level of difficulty of the material, etc. These evaluation results are used in the annual performance appraisal carried out with all lecturers. Since 2008 students complete a programme evaluation upon graduation. This exit evaluation concerns the programme coherence, the thesis pathway and the graduation ceremony. All evaluations are reviewed once per year.

Considerations
The panel considers the existing IQAS to be well established and of good quality. However, the panel is concerned that all arrangements are made at central level (RSM), whereas the new programme may be different (more diverse) from the current one. The panel therefore suggests that the applicant rethinks part of the IQAS and make it more specific to the needs of the MSc SCM students. The panel is very supportive of the applicant’s intention to set up a specific SCM Advisory Committee consisting of both students and practitioners.

Conclusion
The panel assesses the standard 5.1 ‘Systemic approach’ as satisfactory.

4.5.2 Involvement (standard 5.2)

Staff, students, alumni and the relevant professional field will be actively involved in the internal quality assurance system.

Outline of findings
All stakeholders are involved in the RSM IQAS. There is one Examination Board consisting entirely of staff members for all BSc and MSc programmes and one Programme Committee
in which both students and staff are represented. This committee addresses concerns general to all programmes, hence the need for a more direct and regular input from both students and staff. All newly accredited programmes will set up a Programme Advisory Committee (PAC).

Students are asked to evaluate each course they participate in through a digital evaluation system. Moreover, students participate in (semi-)formal bodies such as the Faculty Council, the Programme Committee, the (new) Programme Advisory Committees (master) and the Student Representative Body (bachelor).

Alumni are involved by means of the alumni network and the yearly Alumni Monitor. With regard to the specific SCM programme, alumni provide important feedback during all kinds of activities such as alumni conferences, master classes, thematic receptions, workshops and company visits.

The professional field is indirectly involved through its contacts with the career services office, the corporate and alumni office and the international advisory board.

The SCM programme has different evaluation moments and evaluation activities each year. All SCM courses and exams are evaluated each year and all SCM graduating students are asked to fill out an exit evaluation. Yearly performance interviews with all (SCM) faculties have become standard practice.

**Considerations**

The panel is aware that all stakeholders are involved in the IQAS and will continue to do so in future. However, none of the above standard procedures and examples are exclusively for the existing (or new) SCM programme. The quality circle is standard for all programmes and will remain so in future.

The panel nevertheless thinks that an external advisory body is needed for the specific programme. For instance the corporate contacts the panel met during the site visit were all dedicated ambassadors to the programme. They could already have been involved in designing the new SCM programme, and by doing so might have pointed to some relative weaknesses, which now need to be addressed during programme implementation.

**Conclusion**

The panel assesses the standard 5.2 ‘Involvement’ as **satisfactory**.

### 4.5.3 Concluding assessment of Theme 5 ‘Internal quality assurance system’

The panel assesses the standards ‘Systematic approach’ and ‘Involvement of staff, students, alumni and professional field’ as satisfactory. Its overall assessment of the theme ‘Internal quality assurance system’ is therefore **positive**.
4.6 Conditions for continuity

4.6.1 Graduation guarantee (standard 6.1)

Outline of findings
RSM will ensure that its students can complete the programme. This is underlined by the fact that this programme has been in existence as a specialisation since 2003.

Considerations
The panel takes note of the letter from the president of the EUR management board (College van Bestuur) to the NVAO in which the graduation guarantee is confirmed.

Conclusion
The panel assesses the standard 6.1 ‘Graduation guarantee’ as satisfactory.

4.6.2 Investments (standard 6.2)

Outline of findings
There are reportedly no investments needed because the content of the MSc programme is already in existence. Investments will take place as and when needed as they have done in the past. For example, the two departments involved have recently recruited 4 new members of staff, partly replacements and partly additions, to fulfil planned research and teaching requirements, but unrelated to the change in status of the SCM master programme.

Considerations
According to the panel all formal and financial arrangements look fine on paper. The RSM representatives and in particular the managers of the two departments that constitute the SCM programme seem to have organised everything very carefully.

Nevertheless, there is a tension between the objectives of the overall programme (and its management) and the ambitions of the specific MSc SCM, between the expectations of the two departments (allocate staff to SCM courses) and the requirements of the SCM curriculum (an optimum coverage of SCM topics). According to the panel, tensions may be limited as long as everything goes well, but it is unclear what will happen in case of a major crisis, like for instance a dramatic drop in student numbers. At that point in time, it would be very important to know who takes the lead, who takes decisions and who assumes responsibility.

Conclusion
The panel assesses the standard 6.2 ‘Investments’ as satisfactory.
### 4.6.3 Financial provisions (standard 6.3)

| The financial provisions to cover the projected deficit are sufficient to cover the initial losses. |

#### Outline of findings

Given the current situation that the programme is already up and running, there will be no projected deficit for the MSc programme. Asked how the new SCM master will be accounted for in the bookkeeping system of the university/RSM when it becomes a separate programme, the applicant mentioned that the RSM is organised as a matrix organisation with on one side of the matrix the departments and on the other side programme clusters. Programme clusters lead, control the budgets and act as the demand side. They play a crucial role in the development and implementation of their respective programmes and the allocation of budgets, whereas the departments are responsible for personnel management. Programme clusters make agreements with departments on the nature and quality of services to be delivered and on the budgets allocated and staff members needed to perform these services.

Programme management will continue to 'buy' courses from the department. All overhead costs for operations and marketing are taken care of by Programme Management. The programme as such is not a unit in financial terms, and therefore does not need to balance income and expenditure.

#### Considerations

The panel is convinced that the financial provisions are organised adequately and understands that the new programme will not require any specific investment or provision.

#### Conclusion

The panel assesses the standard 6.3 ‘Financial provisions’ as **satisfactory**.

### 4.6.4 Concluding assessment of Theme 6 ‘Conditions for continuity’

The panel assesses the standards ‘Graduation guarantee’, ‘Investments’ and ‘Financial provisions’ as satisfactory. Its overall assessment of the theme ‘Conditions for continuity’ is therefore **positive**.
5 Overview of the assessments

The panel presents its assessments per theme and per standard, as outlined in chapter 4, in the following table.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Y / N</th>
<th>Standard</th>
<th>Y / N</th>
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<tbody>
<tr>
<td>1 Aims and objectives</td>
<td>Y</td>
<td>1.1 Subject-/ discipline- specific requirements</td>
<td>Y</td>
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<td></td>
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<td>1.2 Master level</td>
<td>Y</td>
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<td></td>
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<td>1.3 Academic orientation</td>
<td>Y</td>
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<tr>
<td>2 Curriculum</td>
<td>Y</td>
<td>2.1 Academic orientation</td>
<td>Y</td>
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<td></td>
<td></td>
<td>2.2 Correspondence objectives and curriculum</td>
<td>Y</td>
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<td></td>
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<td>2.3 Consistency of the curriculum</td>
<td>Y</td>
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<td>2.4 Workload</td>
<td>N</td>
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<td></td>
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<td>2.5 Admission requirements</td>
<td>Y</td>
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<td></td>
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<td>2.6 Credits</td>
<td>Y</td>
</tr>
<tr>
<td>3 Staff</td>
<td>Y</td>
<td>3.1 Requirements for academic orientation</td>
<td>Y</td>
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<tr>
<td></td>
<td></td>
<td>3.2 Quantify of staff</td>
<td>Y</td>
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<tr>
<td></td>
<td></td>
<td>3.3 Quality of staff</td>
<td>Y</td>
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<tr>
<td>4 Services</td>
<td>Y</td>
<td>4.1 Facilities</td>
<td>Y</td>
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<td></td>
<td></td>
<td>4.2 Tutoring</td>
<td>Y</td>
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<tr>
<td>5 Internal QA system</td>
<td>Y</td>
<td>5.1 Systematic approach</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.2 Involvement of staff, students and alumni</td>
<td>Y</td>
</tr>
<tr>
<td>6 Conditions continuity</td>
<td>Y</td>
<td>6.1 Graduation guarantee</td>
<td>Y</td>
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<tr>
<td></td>
<td></td>
<td>6.2 Investments</td>
<td>Y</td>
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<tr>
<td></td>
<td></td>
<td>6.3 Financial provisions</td>
<td>Y</td>
</tr>
</tbody>
</table>

Y: satisfactory

N: unsatisfactory
Annex 1: Composition of the panel

Prof. dr. J. Wijngaard (The Netherlands), chair
Jacob Wijngaard studied mathematics at the Free University of Amsterdam and obtained a PhD in Operations Research from the Eindhoven University of Technology. From 1991 to 2007 he was professor of production management at the University of Groningen. During this period at Groningen University he has been scientific director of the research school SOM, dean of the faculty Management and Organisation and coordinator of the Centre for Research in healthcare organisation and innovation. Jacob Wijngaard’s research interests include supply chains, information systems for operations management and planning and control of healthcare systems.

Prof. dr. J.A.A. van der Veen (The Netherlands), member
Jack van der Veen graduated in Econometrics at the University of Groningen in 1986 and completed his PhD in Combinatorial Optimisation in 1992. From 1990 to 2009 he worked at Nyenrode Business Universiteit, where he was Director of Nyenrode’s Center for Supply Chain Management in 2000-2001. He now is professor of Supply Chain Optimisation at the University of Amsterdam and director of Executive Programmes of the Amsterdam Business School. Jack van der Veen’s areas of interest include operations research, production & logistics management, optimisation models and supply chain management.

Prof. dr. B. Samii (Belgium), member
Behzad Samii is professor of supply chain management in the operations and technology management centre at Vlerick Leuven Gent Management School. Dr. Samii has worked in operations and technology management for over a decade. His educational background includes M.Eng. in logistics and supply chain management from the MIT-Zaragoza International Logistics Program, MBA from Carleton University, and B.Sc. in computer engineering from Sharif University. He received his PhD in logistics and supply chain management from the MIT-Zaragoza International Logistics Program. Behzad Samii’s research interests are supply chain management, capacity allocation mechanisms and inventory rationing.

Ms. G.J. Wijnen (The Netherlands), student member
Geri Wijnen is a student at the Eindhoven University of Technology. She obtained an academic bachelor in “Architecture Building and Planning” and is currently finishing the academic master in Real Estate Management and Development. She did a few student-assistant jobs and participated in the project “From educational vision to housing concept”.

Mr. Mark Delmartino M.A., secretary

Mr. Niek Pronk, policy adviser NVAO
Annex 2: Schedule of the site visit

On 18 February 2010, the NVAO panel visited the Rotterdam School of Management of the Erasmus University Rotterdam, located at the Burgemeester Oudlaan 50 in 3062 PA Rotterdam, for the initial accreditation of the Master of Science in Supply Chain Management. The programme was composed as follows:

09.00h Arrival of the panel – review of additional materials

09.30h Meeting with the Faculty and programme management
- Prof. dr.ir. Jo van Nunen (Supply Chain Management)
- Prof. dr. René de Koster (Supply Chain Management)
- Prof. dr. Eric Waarts (Dean BSc / MSc programmes)
- Ms. Anne van de Graaf (Executive Director MSc BA)
- Ms. Madeleen Vuijk (Programme Manager MSc programmes)
- Ms. Eveline Wijnmaalen (Process Coordinator)

10.30h Meeting with key lecturers of the programme
- Prof. dr. Leo Kroon
- Prof. dr. Finn Wynstra
- Prof. dr. René de Koster
- Dr. Roelof Kuik
- Dr. Albert Veenstra
- Dr. Kees Jan Roodbergen
- Dr. Erwin van der Laan
- Dr. Henk de Vries

12.00h Lunch and internal meeting of the panel

13.00h Meeting with students
- Ms. Sophie Roux
- Mr. Gijs van Dam
- Mr. Edin Mehmedbegovic
- Ms. Rebecca Glier
- Mr. Irving Davelaar
- Ms. Martine Martens

14.00h Meeting with alumni and the professional field
- Ms. Melek Akin (PhD. Student)
- Mr. Guido Smit (alumnus)
- Mr. Laurens van de Rotte (alumnus)
- Mr. Olav Vissers (corporate connection)
- Mr. Lars Bredeveld (corporate connection)
- Mr. Gert Greeve (corporate connection)

15.00h Meeting with representatives of programme committees and the curriculum
- Prof. dr. ing. Teun Hardjono (chair examination board)
- Ms. Carla Dirks van den Broek (secretary examination board)
- Prof. dr. René de Koster (chair programme committee)
- Mr. Jean-Paul Eikelenboom (student member programme committee)
Prof. dr. ir. Jan Dul (research clinic)
Dr. Ad Scheepers (quality control)

16.00h Internal meeting of the panel
17.30h End of the visit
Annex 3: Documents reviewed

*Erasmus University Rotterdam, Rotterdam School of Management, Information file for the accreditation of the MSc in Supply Chain Management* (52 pages):
- Initial accreditation application
- Introduction
- Aims and objectives of the programme
- Curriculum
- Faculty and staff
- Services
- Internal quality assurance system
- Conditions for continuity
- Appendices

*Written answers* to the questions raised by the NVAO (18 pages), including letter from EUR College van Bestuur concerning the graduation guarantee.

*Various materials* put at disposition during the site visit:
- Documents on the organisation of the internship;
- Documents on the preparation of the master thesis (including assessment criteria);
- An overview of the order of the various courses over time (sequential / parallel);
- Examples of master theses;
- Documents on the involvement of the professional field in designing the curriculum;
- Statistics on electives: distribution of students over the electives;
- Education and Examination Regulation;
- Documents on quality assurance: standardised and completed evaluation forms;
- Statistics on job placement: where do SCM graduates end up in the labour market?
- Erasmus Research Institute of Management (ERIM), Mid-Term review 2003-2006.
- CVs of new lecturers in SCM programme;
- Detailed course materials;
- EQUIS self assessment report RSM, January 2009;
- RSM Maintenance of Accreditation report for AASCB, November 2007;
- Brochure ‘MScBA, Supply Chain Management 2009-2010’.
### Annex 4: List of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ba</td>
<td>bachelor</td>
</tr>
<tr>
<td>DIS</td>
<td>Decision and Information Sciences</td>
</tr>
<tr>
<td>EC</td>
<td>European Credits</td>
</tr>
<tr>
<td>ERIM</td>
<td>Erasmus Research Institute of Management</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>EUR</td>
<td>Erasmus University Rotterdam</td>
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<tr>
<td>IQAS</td>
<td>Internal Quality Assurance System</td>
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<tr>
<td>LIS</td>
<td>Logistics and Information Systems</td>
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<tr>
<td>ma</td>
<td>master</td>
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<tr>
<td>MTI</td>
<td>Management of Technology and Innovation</td>
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<tr>
<td>MScBA</td>
<td>Master of Science in Business Administration</td>
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<tr>
<td>NVAO</td>
<td>Dutch-Flemish Accreditation Organisation</td>
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<tr>
<td>RC</td>
<td>Research clinic</td>
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<tr>
<td>RSM</td>
<td>Rotterdam School of Management</td>
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<tr>
<td>SCM</td>
<td>Supply Chain Management</td>
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<tr>
<td>wo</td>
<td>academic education</td>
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</tbody>
</table>
The panel report has been ordered by NVAO for the initial accreditation of the programme Master of Science in Supply Chain Management of the Erasmus University Rotterdam (Rotterdam School of Management).

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Application number: # 3791