

Marketing Automation

Educational sheet

Title of the Teaching Unit	Marketing Automation
Teaching Unit Code	22MMK16-A
Cycle	Master
Number of credits	5 ECTS
Semesters	1
Site	Anjou
Language of instruction	English
Teacher	Claire Deventer

1. General presentation

Automation technologies, including Artificial Intelligence (AI), are profoundly transforming marketing and service management. It creates unprecedented opportunities to personalize customer experiences, support decision-making, and create value. At the same time, it raises major challenges: bias, exclusion, transparency, and societal impact.

This course explores the technical foundations of different marketing automation implementations (rule-based systems, machine learning, generative AI, agentic AI) and their applications in marketing and services. You will learn how to apply these techniques in practical cases while developing a critical and ethical perspective on their use.

2. Course Objectives

By the end of the course, you will be able to:

- 1) Understand and explain the fundamental concepts of marketing automation.
- 2) Analyze and evaluate different marketing automation techniques.
- 3) Implement marketing automation solutions.

The section below details these three goals:

Objective 1: Understand automation concepts and mechanisms in marketing.

1.1 Define the key characteristics and concepts related to artificial intelligence and automation in marketing (e.g. maturity model, martech and legal landscape).

1.2 Explain the different technical mechanisms underlying AI (e.g., rule-based systems, machine learning, generative AI, agentic AI) and how they influence customer experience and marketing practices.

Level in Bloom's taxonomy: Remember and understand. This means that you must be able to explain the concepts seen in class in your own words and illustrate key characteristics of AI and their implications for marketing.

Transversal ICHEC skills activated: Critical thinking, Decision-making.

Objective 2: Analyze and evaluate the use of automation in marketing.

2.1 Analyze the suitability of various AI approaches for specific marketing problems, considering both technical strengths and business constraints.

2.2 Evaluate how AI implementations may introduce risks (e.g., bias, exclusion, misuse of data) and compare how these risks vary across contexts and technologies.

Level in Bloom's Taxonomy: Analyze, Evaluate. This means that students must be able to compare alternative approaches, assess their suitability for specific marketing problems, and critically examine their technical, managerial, and ethical implications

Transversal ICHEC skills activated: Critical thinking, Decision-making, Designing desirable futures.

Objective 3: Implement marketing automation solutions.

3.1 Apply different automation techniques to address marketing challenges (e.g., email automation, customer nurturing, customer service personalization, orchestration).

3.2 Test and refine automation workflows by interpreting their outputs, assessing their performance and limitations, and adjusting the implementation accordingly.

Level in Bloom's Taxonomy: Apply. This means that you must be able to implement simple analytical workflows, interpret results, and assess strengths and weaknesses, both ethically and managerially.

Transversal ICHEC skills activated: Self-development, Designing desirable futures, Critical thinking, Decision-making, Entrepreneurship, Communication, Collaboration.

3. Prerequisites

No mandatory prerequisites. Introductory knowledge of machine learning and marketing is an asset.

4. Course Content

1. Introduction: Managerial Challenges, Strategy and Maturity

Introduction to the role of AI and marketing automation in marketing and consumer experience. This section of the course introduces marketing automation's impacts on consumer experience, the MarTech ecosystem, marketing automation maturity, and regulatory considerations.

2. Rules-Based Automation and Workflow Engines

Introduction to rule-based AI fundamentals, rules engines, workflow automation, technical vocabulary, and key concepts. Use cases and practical applications include email automation, automated sequences, lifecycle triggers, and behavioral events. The strengths and limitations of rule-based approaches are also examined.

3. Judgment Automation: Supervised Machine Learning and Customer Nurturing

Introduction to supervised machine learning, predictive modeling, model training, and performance evaluation. Marketing applications include customer scoring, propensity modeling, and automated customer nurturing. The course also examines the suitability and limitations of different models for marketing decisions.

4. Generative AI

Introduction to generative AI, including its vocabulary, methods, and underlying technology. The course covers techniques such as API access, retrieval-augmented generation (RAG), as well as applications including automated customer service and chatbots. Particular attention is given to limitations and managerial considerations such as privacy, hallucinations, bias and environmental costs.

5. Agentic AI and Cross-Channel Orchestration

Introduction to agentic AI through its key concepts, use cases, marketing applications, limitations, and practical considerations. The course connects AI agents with journey orchestration and touchpoint coordination. Human oversight and responsible implementation are addressed throughout.

5. Teaching methods

The course consists of two types of activities:

- Lectures: presentation of the fundamental concepts of marketing automation and artificial intelligence in marketing, illustrated with concrete examples.
- Thematic exercise sessions: hands-on practice of the notions covered in class through case studies and guided discussions. You will apply different automation approaches, analyze their relevance, and evaluate their ethical and managerial limitations.

6. Evaluation methods

Formative Assessments (not graded)

In-class discussions: allow you to check your understanding of automation technologies concepts and practice identifying their marketing implications.

Thematic exercises: self-assessment based on the resolution of case studies and collective analysis, with instructor feedback to guide critical and ethical reflection.

Certification evaluations (graded)

- Individual written exam: includes multiple-choice questions and case studies. It assesses your understanding of concepts, your ability to analyze marketing situations involving AI and automation, and to evaluate their managerial and ethical implications.

7. Use of generative AI

The use of generative AI tools or unauthorized digital devices is strictly forbidden during the written exam.

In all other contexts of this course, the use of generative AI tools is permitted, provided it is done responsibly and transparently:

- You may use AI as a support tool to clarify concepts, reformulate ideas, explore directions, or check their understanding, similar to a discussion with a peer or instructor.
- AI may not replace personal or group work: all analyses, ethical reflections, and creative outputs must remain the students' own work.
- Any substantial use of AI must be explicitly acknowledged in the assignment or report, e.g., by adding a note specifying the tool used and how it was used.
- You remain fully responsible for the quality, accuracy, and originality of your work.

8. Materials and references

Slides and documents available on Moodle. All material shared during the course.