

POLITECNICO
MILANO 1863

Master of Science in Management Engineering Stream Industrial Management

Academic Year 2019-2020

Scenario and Market Needs

What is Industrial Management about?

Purchasing

Production

Delivery / distribution

Customer Service

Planning

Quality management

New Product/Service Development

Engineering

Safety

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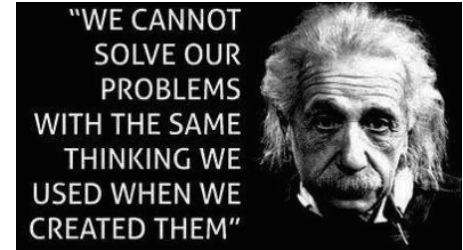
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Products & Services

Scenario and Market Needs

Five phenomena are reshaping the contemporary competitive arena:

- **Globalisation** of markets and production facilities
- **Customisation** of products and services
- **Faster Technology** development and Digitalisation
- **Competition** for securing access to critical resources
- **Higher competence level** for all workers, as a significant opportunity to exploit



The development and interaction of these factors make the design and running of manufacturing and service businesses, **much more complex** than in the past, thus creating the need of **a new type of managers** who are not specialized in any single company area, but **are experts in bringing together different competences and in coordinating them: the Chief Operating Officers**

Building on the wide competences developed during the first year, the Industrial Management educational project aims at developing managers who build **sustainable competitive advantage** through **innovative production and service operating models**.

The IM stream provides students with competences, methodologies, tools, and real world experience to make them able to:

- run a Company site, or group of sites, in an effective and efficient way
- set up new sites and new initiatives - from the idea to the realisation - e.g. strategic investments for the Company's competitive advantage in the long run
- define operating processes, direct investment in new technologies, develop people competences and assets

Learning Outcomes

Typical decisions that graduates in the IM stream will take in their positions are:

- **Deciding on the investment in new facilities/sites** in different part of the world.
- **Adopting of Best Available Technologies** and set technology radical changes as leading an **INDUSTRY 4.0** transformation.
- **Deciding, planning and executing operations improvement** projects.
- **Establishing and managing** the realization and delivery of products and services for satisfying customer needs.
- **Planning, executing and recovering large strategic projects** (manuf & serv).
- **Managing the lifecycle of all physical assets** of the company.
- **Developing human capital** by the enhancement of employees' competences and providing safe working conditions and efficient working environment.
- **Making decisions under uncertainty** and selecting mitigation strategies (risk management).

Stream Architecture: many choices

The stream you can customise !

Pos	ECTS	ECTS	Courses	Sem
7	15	10	Industrial Management Lab	Either 1 OR 2 at your choice
		5	Industrial Management toolbox (models and tools)	
8	10	10	Asset Life Cycle Management	1
		10	Industrial Project Management A	1
9	5	5	Operations Risk Management and Resilience	1
		5	Quality Management	1
10	5	5	Additive Manufacturing	1
		5	De-manufacturing	1
		5	Digital Business Innovation	2
		5	International Distribution	2
		5	Product Life Cycle Management	2
		5	Safety Engineering and Management	1
		5	Purchasing and Supply Management	1
		5	Teoria dei Sistemi (Dinamica non Lineare)	1
	14	14	FREELM	1 or 2
	15	15	Master Thesis	

Stream Architecture

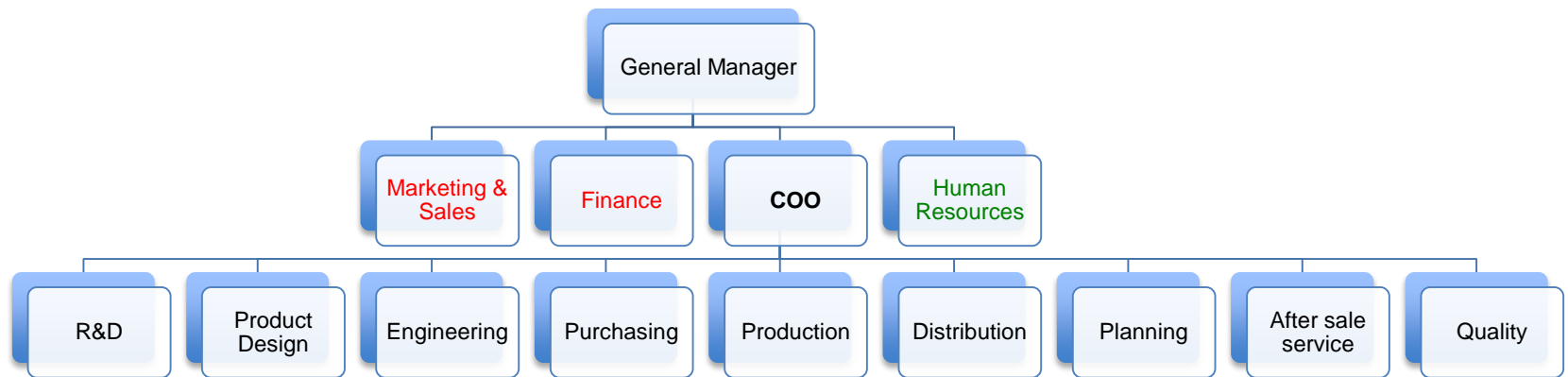
Key characteristics of the Stream

- **Multidisciplinarity:** Integrates different areas
- Strongly customised
- **Faculty and Managers:** jointly delivered with companies
- **Coaching:** soft skills clearly addressed
- **Problem solving:** different learning approach
- Broader working opportunities (builds competences for more than one function)

MAKE ENJOY LEARN

Job opportunities

The IM stream is shaping future Chief Operating Officers



COO => SPECIALISED IN INTEGRATING AND COORDINATING

Broad job opportunities because you can start with a job in any of the areas that refer to the Chief Operating Officer, and then scale up!

Tim Cook was COO of Apple before being appointed CEO

The Industrial Management Lab

The LAB is jointly delivered by POLIMI and Manufacturing or Service Companies, in order to build on the strengths and capabilities of these two Actors to **shape the managers of the future.**

*A Bridge between
Academia and Companies
to help your career*

The Industrial Management Lab

Students work in groups (2-3 people) on a problem given by the Company and approved by POLIMI.

Each group works on an **intense CONSULTING project in a company** (250h per person):

- **a Company Tutor and a Methodological Tutor**
- weekly meetings

During the semester, at the University, groups attend sessions on

Methodology

- Analytical tools
- Modelling tools
- Problem Solving tools

Soft skills

- Change management
- Negotiation
- Conflict resolution

Entrepreneurship

Teamwork

Communication

The Industrial Management Lab

Examples of projects

- Implementing **INDUSTRY 4.0** in a manufacturing company
- Implementing **LEAN** in low volume-high variety production company
- Increasing quality and efficiency in a food production plant
- Opening a **new plant** in USA
- Re-defining the **products portfolio**, and their allocation to plants
- Fraud data: understanding and preventing frauds in a **Bank**
- **Digital opportunities**: improving the customer journey in an Insurance company
- All tablet: **digitalising the logistic** activities
- Applying **IoT** (Internet of Things) in the manufacturing Area
- **Inbound and outbound logistics** and strategy optimization
- Reducing manual wasteful activities and improving service level using **Robotic Process Automation** (RPA)

Projects abroad also! Up to now: 4 in Germany 1 in Lithuania

The Industrial Management Lab

A Few Feedback from the past years

“Real application of concepts and models studied during past courses...my best course!”

“An opportunity to demonstrate my value”

“Opportunity to work like a real consultant!”

“I felt myself important and part of the company”

“Real involvement in companies working life, and so a lot of responsibilities and trust from managers!”

“An opportunity to get known and been hired!”

Contacts

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