STRATEGY MAPS: EXPLORING CASE STUDY METHODOLOGY THROUGH MART (MÁLAGA RACING TEAM)

MAPAS ESTRATÉGICOS: EXPLORANDO A METODOLOGIA DE ESTUDO DE CASO POR MEIO DO MART (MÁLAGA RACING TEAM)

MAPAS ESTRÁTEGICOS: EXPLORANDO LA METODOLOGÍA DE ESTUDIOS DE CASOS A TRAVÉS DE MART (MÁLAGA RACING TEAM)

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ABSTRACT
This paper presents the experience developed in the course entitled Organisational Management of the second year of the Degree in Marketing and Market Research at the University of Malaga focused on the development of the strategy map of MART (Malaga Racing Team) for the 2022/23 season. MART, a multidisciplinary team made up of more than eighty students from twenty different undergraduate and postgraduate disciplines at the University of Malaga, participates globally in Formula Student. The proposal is based on the case analysis methodology, encouraging students in this subject to carry out a preliminary diagnosis of MART, define its strategic framework (mission, vision and values), and identify and represent a series of strategic objectives grouped by perspectives (economic-financial, customer-market, internal and learning-growth), together with their corresponding causal relationships. This teaching-learning methodology contributes to the achievement of specific and complementary goals of the subject, providing students with the opportunity to apply the knowledge acquired in a practical environment.

Keywords: Strategic planning; strategy map; MART (Malaga Racing Team).

RESUMO
Este artigo apresenta a experiência desenvolvida no curso intitulado Gestão Organizacional do segundo ano da Graduação em Marketing e Pesquisa de Mercado da Universidade de Málaga, com foco no desenvolvimento do mapa estratégico da MART (Málaga Racing Team) para a temporada 2022/23. A MART, uma equipe...
multidisciplinar composta por mais de oitenta alunos de vinte diferentes disciplinas de graduação e pós-graduação da Universidade de Málaga, participa globalmente da Fórmula Student. A proposta se baseia na metodologia de análise de casos, incentivando os alunos dessa disciplina a realizar um diagnóstico preliminar do MART, definir seu quadro estratégico (missão, visão e valores) e identificar e representar uma série de objetivos estratégicos agrupados por perspectivas (econômico-financeira, cliente-mercado, interna e aprendizado-crescimento), juntamente com suas relações causais correspondentes. Essa metodologia de ensino-aprendizagem contribui para o alcance dos objetivos específicos e complementares da disciplina, proporcionando aos alunos a oportunidade de aplicar os conhecimentos adquiridos em um ambiente prático.

**Palavras-chave:** Planejamento estratégico; mapa estratégico; MART (Málaga Racing Team).

**RESUMEN**
El presente trabajo presenta la experiencia desarrollada en la asignatura Administración de Organizaciones de segundo curso del Grado en Marketing e Investigación de Mercados de la Universidad de Málaga, centrada en la elaboración del mapa estratégico de MART (Málaga Racing Team) para la temporada 2022/23. MART, un equipo multidisciplinar formado por más de ochenta estudiantes de veinte disciplinas diferentes de grado y posgrado de la Universidad de Málaga, participa a nivel global en la Formula Student. La propuesta se basa en la metodología de análisis de casos, animando al alumnado de esta asignatura a realizar un diagnóstico previo de MART, definir su marco estratégico (misión, visión y valores), e identificar y representar una serie de objetivos estratégicos agrupados por perspectivas (económico-financiera, cliente-mercado, interna y aprendizaje-crecimiento), junto con sus correspondientes relaciones causales. Esta metodología de enseñanza-aprendizaje contribuye a la consecución de los objetivos específicos y complementarios de la asignatura, proporcionando al estudiantado la oportunidad de aplicar los conocimientos adquiridos en un entorno práctico.

**Palabras clave:** Planificación estratégica; mapa estratégico; MART (Málaga Racing Team).

1. Introduction

Qualitative methods, advocated by Eisenhardt (1989), Maxwell (1998), Alvesson and Sköldberg (2000) and Yin (2009), allow a type of analysis with sufficient depth and access to first-hand information. In the social sciences, qualitative methods have provided significant opportunities to increase the knowledge available about organisations (Patton, 1990; Maxwell, 1996).

The case study, within the framework of qualitative research methods, is a directed technique that allows the phenomenon under study to be studied in its real context, using multiple sources of evidence. The case study is therefore one of the most appropriate methods for getting to know the reality of a situation, for
making detailed profile descriptions and for studying an essentially complex
phenomenon (Villareal and Landeta, 2007).

The strategy map is a planning tool developed by Kaplan and Norton
(1992) that seeks to graphically capture the priority strategic objectives and the
causal relationships between them, always looking for interrelationships and
complementarities in order to achieve the vision set by the organisation. This
strategic tool, made up of a series of components such as: (1) the strategic
objectives; (2) the perspectives (economic-financial, customer-market, internal
and learning-growth), which seek to create clusters between the objectives; and
(3) the cause-and-effect relationships, which seek to find a link or balance
between the different objectives; helps to understand the strategy as a sequence
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objectives; (2) the perspectives (economic-financial, customer-market, internal
and learning-growth), which seek to create groupings between the objectives;
and (3) the cause-and-effect relationships, which seek to find a link or balance
between the different objectives; helps to understand the strategy as a sequence
of objectives.

This paper describes the experience made in the context of the subject
Organisational Management with second year students of the Degree in
Marketing and Market Research at the Faculty of Commerce and Management
(University of Malaga). The teaching-learning proposal consisted of the students,
once the case study had been selected, using several sources of evidence that
would allow them, for the 2022/23 season, to carry out a diagnosis of the situation
of MART; to define the strategic framework of this organisation (mission, vision
and values); to identify, reach consensus and present on a strategy map a
compendium of objectives grouped by perspective (economic-financial,
customer-market, internal and learning-growth) together with their corresponding
causal relationships.
MART is a racing team made up of more than eighty students from twenty different undergraduate and postgraduate courses at the University of Malaga, which promotes the entrepreneurial spirit by bringing together the academic and professional worlds. The students who make up this team design and build a single-seater car to compete in the Formula Student, an automobile championship with more than forty years of history that brings together university teams from all over the world. It is held in many countries, such as Germany, the United Kingdom, the Netherlands, Japan, Brazil, Australia, etc.

The results of this experience show that the level of satisfaction of the students is very high, as it allows them to apply the knowledge acquired in a real context. Moreover, this initiative contributes to the achievement of the objectives of one block of the subject, in this case the application of the strategy map as a planning tool in specific business contexts, while allowing the achievement of complementary objectives, both at the individual level (development of communication skills, autonomy and responsibility) and at the group level (teamwork, cooperation and shared vision).

The paper is structured in the following sections. Section two reviews the theoretical framework, focusing mainly on the two main axes of the proposal: case studies and strategy maps; section three details the methodology used, taking into account the context in which the experience was applied and its main objectives. Section four presents the results obtained. Finally, section five presents the conclusions drawn from the experience.

2. Literature Review
2.1 The Case Study

Qualitative methods, endorsed by Eisenhardt (1989), Maxwell (1998), Alvesson and Sköldberg (2000) and Yin (2009), allow a type of analysis with sufficient depth and access to first-hand information. In the social sciences, qualitative methods have provided significant opportunities to increase the knowledge available about organisations (Patton, 1990; Maxwell, 1996).

The case study, within the framework of qualitative research methods, is a directed technique that allows the phenomenon under study to be studied in its
real context, using multiple sources of evidence. The case study is therefore one of the most appropriate methods for getting to know the reality of a situation, for making detailed profile descriptions and for studying an essentially complex phenomenon (Gerring, 2004).

According to Pérez-Serrano (1994), the main characteristics that define case studies are as follows:

- They are particularistic, i.e. they cover only one specific reality or problem, which makes them very effective techniques for analysing unique and concrete situations.
- They are descriptive, as they allow an exhaustive and qualitative description of a specific situation or condition.
- They are heuristic, which means that they discover new aspects of a given subject or confirm those already known.
- They are inductive, in the sense that hypotheses can be developed on the basis of inductive reasoning and new relationships can be found from one or more specific cases.

Traditionally, the development of a case study is divided into five distinct phases. According to Rovira-Salvador (2018), these phases are as follows.

Phase 1. Case selection.

Before embarking on any type of research, it is necessary to consider what needs to be studied, so that an appropriate and relevant case can be selected. It is a priority to determine the contribution of the case to the achievement of the research objective (Pérez-Aguilar and Martínez-Núñez, 2013).

Phase 2. Developing the questions.

Once the subject of the study has been identified and the case to be studied has been selected, it is necessary to design a set of questions that determine what is to be found out at the end of the study.

Phase 3. Finding sources and collecting data.

Through observation techniques, interviews with the subjects or by carrying out various tests, it is possible to obtain most of the information needed to answer the questions posed in the research.

Phase 4. Analysing and interpreting the information and results.

The next step is to analyse and interpret the information gathered from the
various sources of evidence. From this, a set of findings are obtained and a decision can be made as to whether or not they can be applied to other similar situations or cases.

Phase 5. Writing the report.

Finally, a clear and comprehensible report is written, detailing the main conclusions drawn from the case study.

2.2 Strategy Maps

The strategy map is presented as a typical business methodological technique based on a tool that allows organisations to synthetically capture the ways to achieve value. It consists of a systems model that details, graphically, the strategy of a company through a set of perspectives, setting specific objectives in each of them, as well as the cause-effect relationships between them, seeking complementarity for the achievement of the overall vision in a given period of time (Kaplan and Norton, 1992). The comprehensive nature of this tool, together with its simplicity, makes it a particularly useful communication device between the different stakeholders involved in this task.

Kaplan and Norton (1996a and 1996b) propose a methodology centred on a series of steps, through which the construction of the strategic map is pursued, one of the key elements being the determination of the processes through which value is generated, based on a series of intangibles, which favour the achievement of the proposed vision.

A first step, which is necessary to specify the paths that guide the strategy, consists of initially defining a set of elements and carrying out a diagnosis of the initial situation. In this sense, a strategic framework must be established to help the organisation to set the objectives and guide it in the actions to be carried out subsequently. This framework is made up of the mission, vision and values, as well as the analysis of the stakeholders involved and the geographical environment in which it is framed (Kaplan and Norton, 1996b).

The organisation's mission provides the starting point, defining why it exists. It is, in short, a concise statement of its raison d'être, the basic purpose towards which its activities are directed and the actions that guide its agents.
The vision represents a picture of the future that clarifies the direction of the strategy and helps stakeholders understand why and how they should support it - in essence, a concise statement of medium and long-term goals.

The strategy map is underpinned by a set of values that constitute its basic pillars. They are a set of principles, beliefs and rules, which symbolise the guidelines for organisational behaviour, providing an effective and appropriate structure, allowing different types of objectives to be brought together and regulating the way in which the main objective is achieved. They also have another main function within the organisation, as they are the essential support for the climate in which they are developed.

Freeman and Read (1983) define stakeholders as the set of individuals, groups or collectives, internal or external, who are directly or indirectly affected by the activities or decisions of organisations and who, therefore, can also directly or indirectly affect the development of these organisations. These stakeholders can be contextualised on the basis of the analysis of the organisations.

In addition to the elements that make up the definition of the strategic framework, another step of interest when constructing an organisation’s strategy map is the need to analyse the external and internal context. In this sense, a PEST and SWOT analysis provides a real and close view of the circumstances and characteristics of the organisations under study. Thus, a PEST analysis provides a prior contextualisation of the organisation being analysed, by highlighting some of the most significant features: political-legal, economic, technological or socio-cultural, among others; while a SWOT analysis seeks an adequate diagnosis of the situation, as well as orienting and justifying the objectives and areas of intervention corresponding to the different perspectives that make up a strategy map.

Having considered the process whose elements allow the definition of the strategic framework, the following steps are proposed, following the methodology proposed by Kaplan and Norton (1992 and 1993), which allow the final construction of the strategic map.

Firstly, given that the achievement of the value pursued by the strategy map involves the concatenation of certain perspectives of action, it is necessary to proceed to define them through a series of questions, for which it is necessary...
to take into account the circumstances and conditions of the sector and, in particular, those of the organisation that serves as a reference for the construction of the strategy map.

According to Kaplan and Norton (2004), the perspectives to be considered are the following:

- The economic-financial perspective describes the tangible results of strategy in traditional financial terms. In this case, indicators such as return on investment, shareholder value, profitability, revenue growth or cost per unit show whether an organisation's strategy is succeeding or failing.

- The customer-market perspective defines the value proposition for target customers.

- The internal perspective identifies the processes that are expected to have the greatest impact on the strategy.

- The learning-growth perspective identifies the intangible assets that are most important to the strategy.

Secondly, the objectives corresponding to each of the perspectives must be identified and linked by cause-and-effect relationships. This cause-and-effect architecture linking the four perspectives is the structure around which a strategy map is developed, as it clarifies the strategy, provides correspondence between strategic objectives and converts the objectives into a logical sequence that marks out the concrete path to achieving the established vision.

3. Methodology

3.1 Objectives

The general objective of this experience focuses on promoting new methodologies and good teaching practices, strengthening cooperation and exchanges between the different actors involved in the teaching-learning process.

This general objective is further broken down into a number of specific objectives:
1. To encourage students to use methods that strengthen their research spirit.

2. To promote the achievement of objectives specific to a part of the subject, in this case the use of the strategic map as a business planning tool, the analysis of the interrelationship between the elements that make it up and the application of this tool in a specific real context.

3. To achieve other additional objectives, both individual (development of communication skills, autonomy and responsibility) and group (unified cooperation, shared vision and continuous improvement).

3.2 Context of Implementation

The proposed experience was carried out during the first four months of the 2022/23 academic year in the context of the subject "Organisational Management", a compulsory six-credit course corresponding to the second year of the "Degree in Marketing and Market Research" at the University of Malaga. The course was taught to more than 300 students, divided into five groups. Our experience has been particularly focused on groups B, C and D, in which a total of 180 students have been taught, with an average of sixty students per group. During the current academic year, 2023/24, the experience will continue, on this occasion aimed at all groups.

The course aims to develop a student's basic skills in the processes of business administration in its four phases: planning, organisation, management and control, distributing its contents in the following topics:

1. Introduction to Organisational Management
2. Planning in business I
3. Planning in business II
4. Decisions in the enterprise
5. Organisational systems
6. Organisational design
7. Complex organisational structures
8. Leadership
9. Managerial sub-functions
10. The control process
The experiences described in this communication focus on learning to use strategy maps as a tool for strategic planning, thus corresponding to themes two and three of the thematic programme.

3.3 Method and Schedule

The experience takes place at the Faculty of Commerce and Management of the University of Malaga. This centre concentrates its teaching programme in fifteen weeks per semester, divided into large group weeks (weeks 1, 2, 3, 4, 6, 8, 10, 12 and 14) and small group weeks (weeks 5, 7, 9, 11, 13 and 15). The large group weeks have a total of four hours per week (two sessions of two hours each) and the small group weeks have three hours per week (two sessions of one and a half hours each). The activities carried out during the weeks devoted to the implementation of the experience that is the subject of this work are detailed below.

Week 1.

Session 1. Presentation of the subject and explanation of the grading system.

The teaching staff will present the course programme of the subject and explain to the students the evaluation system, in which the final grade obtained will be divided between two tests as follows: an examination on the main contents of the subject (50%) and the performance of practical activities (50%). In this second block, the experiences described in this paper will have a weight of 40%, while the remaining 10% will correspond to the development of other types of exercises or tasks related to the subject.

Session 2. Explanation of the case study method and presentation of MART.

This session is intended for
- Explanation to students of the integrative phases of the case study technique.
- Formation of the working teams. These teams are made up of ten participants, so that each of the three subject groups (B, C and D) has six teams, making a total of eighteen teams.
- Presentation to the students of the MART team as a case study.  
  Weeks 2 to 4.

  The sessions corresponding to these three large group weeks are dedicated to teaching and learning concepts related to the strategic planning block. The aim of these sessions is to encourage students to acquire the knowledge and skills necessary to develop and implement business planning tools such as the strategy map and the balanced scorecard.

  Week 5. Visit of the MART team.

  Members of the MART team visit the three Management of Organisations groups to explain their project and answer a series of preliminary questions posed by the students of the subject.

  Weeks 6, 8, 10, 12 and 14.

  These large group weeks are dedicated to explaining and working on the content corresponding to the rest of the thematic blocks of the subject.

  Weeks 7, 9, 11, 13 and 15.

  The sessions corresponding to these small-group weeks are designed to help the teams develop the experience that is the subject of this work, which consists of drawing up the MART strategic map for the 2022/23 season.

  The activities planned for these weeks are detailed below:


  Preparation of a protocol which, in addition to the data collection instruments (documentary evidence, direct observation and in-depth interviews), includes the procedures and general rules to be followed when using the case study.

  From this week until week 9, the fieldwork is carried out, which consists of collecting all the information from the different sources of evidence considered. The following will be considered:

  - Documentary evidence, through reports, MART's website, publications referring to MART in different media (press, radio, television, social networks, etc.).

  - Direct observation, through visits to the workshop where MART works.
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- In-depth interviews. An online calendar of scheduled interviews with members of the team and other stakeholders, pre-arranged between students and teachers. Una vez que la fase de recogida de datos se culmina, se procede al registro, clasificación y análisis de la información.

Week 9. Presentation of the results.
Presentation to the class of a report based on the information obtained from the different sources of evidence consulted, including:
- The definition of the strategic framework of MART (mission, vision and values).
- Carrying out an internal and external diagnosis of the University of Malaga team.
- The configuration of MART’s strategic map, including: a set of critical objectives grouped according to the four perspectives established by Kaplan and Norton (1996a, 1996b): economic-financial, customer-market, internal and learning-growth; and the cause-effect relationships between the strategic objectives, which will be essential for the understanding of MART’s strategic map, as they will: determine the strategy, put the objectives in a logical sequence, inform about the correspondence between the objectives, and establish a roadmap to achieve the vision considered for the 2022/23 season.

The documentation provided will be reviewed by the teaching staff and may be subject to changes and/or corrections.

Week 11. Delphi Technique.
Once the strategy map has been designed, the use of the Delphi technique (Linston and Turoff, 1975) is considered in order to ensure objectivity and to evaluate and prioritise the objectives according to their importance. For this purpose, the teachers select a panel of experts made up of professionals with extensive knowledge and experience in the field. As the literature suggests, if the panel is made up of experts with similar characteristics, a panel of 10-15 experts is sufficient to obtain consistent results (Adler and Ziglio, 1996).

From this moment on, the students, following the instructions of the teachers, send the strategic tools to the panel of experts, carrying out an iterative
process of feedback, sometimes requiring several rounds before the final consensus is reached. From this point, the team writes the final report.

   Week 13. First round of presentations.

   During week 13, the eighteen teams (six for each of the three thematic groups: B, C and D) present the final result corresponding to the strategy map linked to MART.

   The main aspects of this final presentation are as follows:

   - Each team has ten minutes to present its strategy map.
   - One week prior to the presentation, the leader of each team must upload a report corresponding to the strategy map in a task set up for this purpose on the virtual campus of the course.
   - The assessment is carried out by the teaching staff of the subject.
   - The assessment is based on rubrics drawn up by the teaching staff of the subject which consider the degree of acquisition and development of competences: ability to organise and plan, ability to make decisions, strategic thinking, ability to work in a team, ability to lead teams, and oral and written communication skills.
   - After the presentation of each team, the teachers have twenty minutes to ask questions and discuss the final results with the team members.

   At the end of the first round of presentations, the teacher will announce the scores of each team. The six teams with the highest scores move on to the second round.

   Week 15. Second round of presentations.

   The second round takes place during week 15. The procedure for this round is exactly the same as in the previous phase, with the exception that the evaluation is carried out by a 360º Commission made up of the following members:

   - Teachers of Management of Organisations in other degree courses at Malaga University.
   - Graduates of the Management of Organisations course.
   - Members of the MART team.
   - Coordinators of MART.
At the end of the second round, the teachers will publish the team with the highest score and the team members will send the final report to MART so that the tool developed can be used by the team for strategic planning for the 2022/23 season.

4. Results

The results derived from the implementation of this experience are grouped into two main blocks:

Results related to the teaching-learning process:
- This methodology encourages students to acquire and develop the general and basic competences of the subject, as well as specific competences, especially those related to the understanding of organisational management processes.
- Students' satisfaction with this experience is very high, as MART allows them to work in contexts that simulate real-life experiences and to combine the academic and professional worlds.
- The implementation of this methodology contributes to the development of the students' spirit of research.
- The use of this teaching and learning method allows students to: integrate and relate concepts from this subject to other subjects in their degree, receive more feedback from the teaching staff, improve the level of communication with their classmates, increase their level of responsibility and allow them to manage time and possible stress arising from possible conflicts between team members.
- Students' motivation is increased as they become more involved in the teaching-learning process.

Results related to teaching organisation:
- The experience promotes good teaching practices in the "Degree in Marketing and Market Research".
- Coordination between the teaching staff of the "Management of Organisations" subject is strengthened.
The involvement of external agents in the 360° committee strengthens the subject's evaluation system, avoiding the subjectivity often inherent in evaluation processes. The experience encourages the use of ICT among students as a support tool in the application of the methodology under consideration.

5. Discussions

The implementation of initiatives of this nature, although it involves a considerable effort on the part of the teaching staff in terms of coordination and management, also represents an important contribution to the implementation of teaching-learning methodologies in the context of undergraduate university teaching and, more specifically, in the field of subjects belonging to the social sciences.

Likewise, the development of the type of activities proposed in the context of the MART project involves a symbiosis of knowledge and experience that leads to satisfactory results for both parties: the students of the Marketing and Market Research Degree and the members of the University of Malaga team.

Finally, the innovations resulting from this experience could be transferred to:

- The teaching programmes of other subjects related to economics and business, due to their transversal nature, lead them to be taught in different undergraduate and postgraduate courses, for example in Engineering, Tourism, Labour Relations, Social Work, etc.
- The Final Degree Projects and Final Master's Projects of different degrees, as they are the subject of the application of the case study method for the configuration and development of strategic planning tools, such as the Strategy Map or the Balanced Scorecard, among others.
- Other Formula Student teams (in Spain alone there are nine university motor racing teams with similar characteristics to MART), which can benefit from the application of knowledge and skills acquired by undergraduate and postgraduate students through experiences similar to the one described in this paper.
Consultancy activities carried out by students during their external placements in business organisations.

REFERENCES


