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# How to develop an integrated performance measurement system for a soccer club

A conceptual framework to measure and track sporting and financial performance in soccer clubs

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# Soccer clubs need a comprehensive performance system to meet various strategic objectives

## Significance of soccer in the economy

Over the last decades, soccer has gained significance in the sports industry worldwide. It is characterized by an **increased amount of popularity among fans which is further translated into large investments and expenditures** for player transfers and salaries, TV rights, or advertisements by sponsors (Dimitropoulos, 2010). The figures for transfers of players as well as revenues of soccer clubs have reached record sums, indicating the competitive character of the soccer business (Zülch et al., 2017; Elberse, 2020).

## Competitive environment

In order to survive and perform in this competitive environment, soccer clubs need to focus **on strategic objectives that foster efficiency, effectiveness, competitiveness, and sustainability**. A comprehensive system to measure and manage performance is therefore of utmost relevance (Coskun & Tetik, 2013).

## Various stakeholders and objectives

A soccer club needs to meet the expectations of various stakeholders, such as fans, players, employees, media, sponsors, and legal authorities. Consequently, soccer clubs need to be managed professionally, and **follow multidimensional strategic objectives to satisfy all stakeholders** (Pache and Santos, 2010; Coskun & Tetik, 2013; Carlsson-Wall et al., 2016).

## Soccer clubs as businesses

Soccer clubs' financial flows become comparable to many other industries. As such, soccer is an option for investment, leaving the sport managers of clubs responsible for growth and attractiveness for investors and sponsors (Kulikova & Goshunova, 2016). The so-called football companies have been increasingly incentivized to **focus on long-term financial stability, rather than only on sportive performance** (Zülch et al., 2020). With this transformation of soccer clubs to businesses (Galariotis et al., 2017), the core factor of success is constituted by the effective optimization of available resources (Miragaia et al., 2019).

# Literature analyses mostly large clubs and merely one dimension of performance

## Relevance of performance measurement systems

- Assessment of management quality, specifically in its ability to meet strategic objectives is relevant. In the past, such performance measures have been **mostly financial in nature, which was criticized** also in terms of the traditional company (Zülch et al., 2020)
- In sports, **rating or ranking systems to evaluate players and respectively teams** are used by clubs, opponents as well as fans (McHale et al., 2012)
- The main objective of such a performance measurement system is to **rationalize decision making internally as well as to inform external stakeholders** of the status quo (Carlsson-Wall et al., 2016)

## Interdependencies of sport and financial success

- After a successful sporting season, clubs theoretically benefit financially (Carlsson-Wall et al., 2016; Zülch et al., 2017). **Increased revenues allow clubs to make investments** in the team's squad, or youth development in turn (Zülch et al. 2020). This spiral can go upward and downward (Carlsson-Wall et al., 2016; Galariotis et al., 2017)
- **Sporting success** can be represented by winning championships, advancing in the national league, or **winning important games** (Foster et al., 2006)
- **Financial success** follows objectives similar to the ones of **non-sport organizations** (Smith & Stewart, 2010)

## Concepts and frameworks in literature

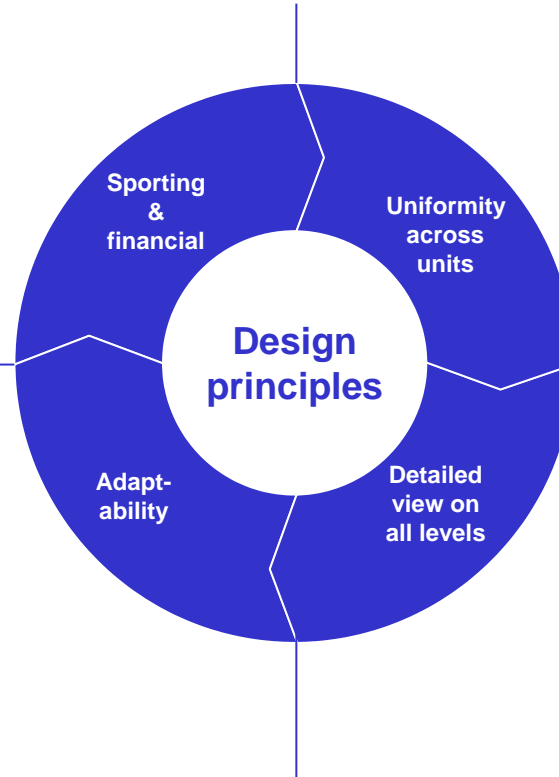
- Systems covering **only one logic**, i.e. the financial or the sporting perspective (Solntsev & Osokin, 2018; Vierimaa, 2012)
- **Repurposed systems from non-sport organizations** proving suitable and efficient from a strategic perspective within traditional companies (Vinck, 2009)
- **Balanced Scorecard** (BSC) offers an adequate framework for sport clubs as it captures financial and non-financial activities within four categories: Financial Perspective, Customer Perspective, Internal Business-Process-Perspective, and Learning and Growth Perspective (Kaplan & Norton, 1996)



# Specific performance measurement system for soccer clubs follows several design principles

Sporting performance proves to influence financial success, with a tendency of rising revenues following seasons with good sporting results, literature (Coskun & Tetik, 2013; Parganas et al., 2017; Cornwell et al., 2001) and management perspectives urge **to look at both together and as interlinked** (Miragaito et al., 2019)

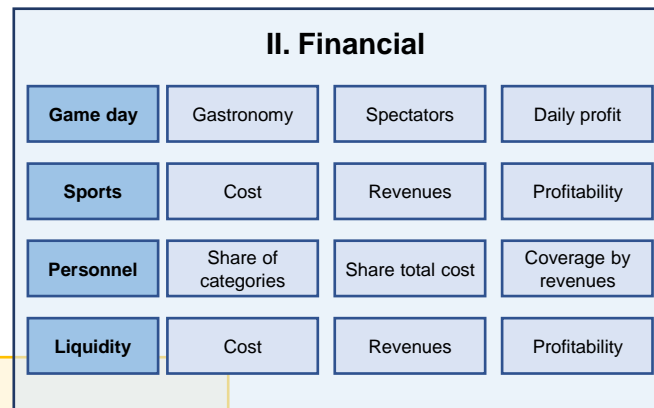
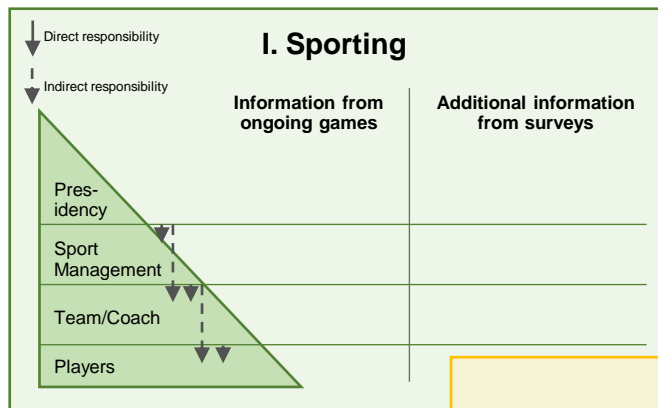
Besides sporting success, financial performance is also dependent on further factors that are not fully controllable, such as the economy, sponsors, commitment of fans, etc. Hence, the performance measurement concept needs to be **organized in a way to enable adaptation of eventual changes, including future growth** (Miragaia et al., 2019)



Concept should be the same across all business units (men, women, youth) to **allow for comparability, efficiency, and knowledge as well as practice sharing** (Coskun & Tetik, 2013)

The aim of the performance measurement system is to provide an informed and data-driven basis for decision making. Hence, the KPIs need to have a **high relevance for the decision makers at each level, allowing for a detailed view and enabling a targeted set of measures**. KPIs should therefore be designed at all sporting levels, namely individual players, the team/coaches, and sporting management

# Framework enables a holistic and integrated view on the club's entire performance



*Detailed function and KPIs in the following*

# I. Sporting: Performance measurement on the pitch is defined by three governing thoughts



## Individual player performance data as the basis of sporting performance measurement

- Player performance is a significant **input factor for the performance of all higher-level perspectives**
- Key performance indicators on the player level are **derived from games and practice**
- Support coaches and sport managers in **various aspects of decision making**, such as forming the draft, evaluating development needs, lack of skills, or preparing for transfer negotiations of players



## Increasing level of data aggregation contributes to performance perspectives of coaches and sport managers

- Team and respective coach view is derived through the **aggregation of player data and general game statistics**
- Sport manager perspective is comprised by further **aggregation giving a view on necessary transfers and quality of players**. Information about scouting and efforts in sourcing talent are added
- Two-folded purpose of each perspective: First, support each of the groups in their daily work and **help making data-backed decisions**. Second, **assessment of their performance** by the higher-level group



## Two streams of information ensure a comprehensive set of data: ongoing game information & additional surveys

- Main sporting information derives from **ongoing operations of the soccer club** (e.g. practice, games, scouting activities)
- Additional data is provided through the **survey assessment of players' and coaches' competence, character, and mentality** conducted by the performers themselves as well as by the respective coach or sport manager on a quarterly basis
- Sport manager view is **enriched by strategy and finance information**, prepared on a quarterly basis and discussed with the presidency

# I. Sporting key performance indicators

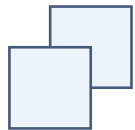
	Information from ongoing games	Additional information from surveys
Pre-presidency Sport Management Team/Coach Players	<ul style="list-style-type: none"> <li>– <b>Scouting data</b> (number/rate from tryouts, sighting successes)</li> <li>– <b>Aggregated player data</b> (number/clubs of transfers, minutes played/goals/assists of new players, number of selection players)</li> <li>– <b>Game data</b> (statistics on final results, development of table position)</li> <li>– <b>Aggregated player data</b> (percent injured, average training attendance, total goals)</li> <li>– <b>Key data</b> (position, transfer, injuries, selection)</li> <li>– <b>Statistics</b> (squad, minutes played, Y/R cards, goals, assists, training attendance)</li> <li>– <b>Game rating</b> (tackles, goal chances, shots, passes)</li> </ul>	<ul style="list-style-type: none"> <li>– <b>Strategy and financial indicators</b> (international/national competitions, friendly matches, training camps, co-operations, partnerships, marketing, budget management)</li> <li><b>Coach</b> evaluation sheet:               <ul style="list-style-type: none"> <li>– <b>Competence</b> (knowledge, practice design, skill transfer)</li> <li>– <b>Character</b> (ambition, identification with club, team player, excitement for job, player trust)</li> <li>– <b>Mentality</b> (self-confidence, motivation of players, integration of new players, empathy)</li> </ul> </li> <li>Aggregated player data – no additional survey</li> <li><b>Player</b> evaluation sheet:               <ul style="list-style-type: none"> <li>– <b>Competence</b> (technique, tactics, physical skills)</li> <li>– <b>Character</b> (empathy, caring, honesty)</li> <li>– <b>Mentality</b> (self-confidence, motivation)</li> </ul> </li> </ul>

## II. Financial: Performance assessment using various angles and combinations



**Key income and cost drivers are organized in four categories: game day, sports, personnel, liquidity**

- Depending on the soccer club's needs and availability of data, these **categories can be adapted**
- Game day financials contain KPIs measuring success from **gastronomy, spectators, and general profitability**
- Sports category measures sustainability and **efficiency of the core business, namely the operations on the pitch**. Revenues and cost for players, coaches or medics as well as development subsidies or prize money are covered
- Within the personnel category the **efficiency of staff in all teams**, (sports) -administration and medical personnel is measured. Moreover, it is assessed which proportion personnel cost take compared to sponsoring and ticketing revenue
- Liquidity category offers a **close view on cost**, revenues, and profitability



**Key performance indicators allow for a variation of insights to immediately recognize levers for improvement**

- With a limited set of input measures, defined by the available and most useful data of the soccer club, **various combinations of KPIs** can be defined
- The detailed set of indicators allows for an **immediate assessment of specific issues** at hand and respective counter actions for improvement
- **Input measures** are revenues and cost from gastronomy, number of and revenues from spectators, overall revenues and cost from game days, revenues and expenditures from sports, cost of all personnel categories, total revenues and cost



## II. Financial key performance indicators

<b>Game day</b>	<b>Gastronomy</b> <ul style="list-style-type: none"> <li>- Cost/Revenue share</li> <li>- Revenue share/Total revenue</li> </ul>	<b>Spectators</b> <ul style="list-style-type: none"> <li>- Revenue game day/Number spectators</li> <li>- Cost game day/Number spectators</li> <li>- Profit game day/Number spectators</li> </ul>	<b>Daily profit</b> <ul style="list-style-type: none"> <li>- Game day profit/Revenue game day</li> <li>- Cost game day/Revenue game day</li> </ul>
<b>Sports</b>	<b>Sports cost</b> <ul style="list-style-type: none"> <li>- Cost of sports (sports operations + sports personnel)/Total cost</li> </ul>	<b>Sports revenues</b> <ul style="list-style-type: none"> <li>- Youth funding/Revenues sports</li> <li>- Association funding/Revenues sports</li> <li>- Prize money/Revenues sports</li> </ul>	<b>Sports profitability</b> <ul style="list-style-type: none"> <li>- Cost sports/Revenues Sports</li> <li>- Cost sport/Total revenue</li> <li>- Sports profit/Non-sports profit</li> </ul>
<b>Personnel</b>	<b>Shares of personnel categories</b> <ul style="list-style-type: none"> <li>- Male team/Total personnel cost</li> <li>- Female team/Total personnel cost</li> <li>- Medical/Total personnel cost</li> <li>- Youth/Total personnel cost</li> <li>- Admin (-sports)/Total personnel cost</li> </ul>	<b>Shares of total cost and total revenues</b> <ul style="list-style-type: none"> <li>- Personnel cost/Total cost</li> <li>- Personnel cost/Total revenue</li> </ul>	<b>Coverage by revenues</b> <ul style="list-style-type: none"> <li>- Personnel cost/Sponsoring</li> <li>- Personnel cost/Ticketing</li> </ul>
<b>Liquidity</b>	<b>Cost</b> <ul style="list-style-type: none"> <li>- Personnel/Total cost</li> <li>- Infrastructure/Total cost</li> <li>- Game operations/Total cost</li> <li>- Depreciation/Total cost</li> <li>- Other cost/Total cost</li> </ul>	<b>Revenues</b> <ul style="list-style-type: none"> <li>- Main sponsorship/Total revenues</li> <li>- Sport revenues + Ticketing + Merchandising/Total revenues</li> </ul>	<b>Profitability</b> <ul style="list-style-type: none"> <li>- Cost/Revenues</li> <li>- Profit/Revenues</li> </ul>

# III. Interrelated measures complement independent sporting and financial dimensions



## Sporting and financial performance need to be measured independently and interlinked

- Most soccer clubs of a certain size are **organized within a business and sporting division**. As such, they have different objectives and tasks. Hence, the presented KPIs within the sporting and financial dimensions need to be used separately
- To allow for an **integrated view of the entire soccer club**, a set of KPIs, consisting of input from both, sport and finances, needs to be applied



## Two categories to measure effectiveness of sports expenditures: game analysis and transfer effectiveness

- Games analysis aims at providing insights in the **cost of the activities on the pitch**, namely the salaries of players compared with the time played and goals achieved
- Transfer effectiveness gives a **view on the success of transfers**, relating expenditures of transfers to the actual play time and the amount of contract offered to youth players

# III. Interrelated key performance indicators

## Key performance indicators

### Game analysis

- Salary/Playing time
- Salary/Number of possible assignments
- Salary/Number of actual assignments
- Salary/Score evaluation sheet
- Total salaries of players on the field/Number of goals in the game
- Total salaries of players on the field/Goal difference in the game

### Transfer efficacy

- Cost transfer/Playing time
- Income transfer/Playing time
- Income transfer/Score evaluation sheet
- Number of contract offers/Number of players in the team (from youth)
- Number of transfers/Players on the team

## Informative value

- Expenditure of player per minute on the field
- Expected spend per effort
- Actual spend per game effort
- Spending for player in relation to rating
- Average spend of a goal per game
- Average spend of win/loss per game

- Effectiveness of purchases
- Impact of visibility and experience on transfer sale
- Impact of performance on transfer sale
- Conversion rate contracts
- Conversion rate transfers

# Contribution to management teams of soccer clubs and researchers

- ✓ **Integrated concept for soccer as well as other sports clubs** to measure and track performance on three levels (players, team/coach, sport managers) and from three perspectives (sporting, financial, interrelated)
- ✓ Specifically, the interrelated dimension enables soccer clubs to view core activities granularly and **apply targeted measures to identified issues**
- ✓ Due to the stepwise description of the concept development, other sports clubs can **customarily adapt their performance measurement system and fill it with the longlist of offered KPIs**. Hence, other soccer clubs can apply the performance measurement system based on their individual needs and available data
- ✓ Bottom-up customarily designed performance measurement framework offers multiple dimensions and perspectives to assess sports clubs, providing researchers with the opportunity to **conduct analyses of soccer performance on a well structured and more detailed level**

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