Sports Business and Multisided Markets: Towards a New Analytical Framework? (Long Version)

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Abstract

Despite still being younger than a decade, the theory of multisided markets has offered numerous valuable insights for the analysis of industries in which a supplier serves two distinct customer groups that are indirectly interrelated through externalities. Examples include payment systems, matching agencies, commercial media, and software platforms. However, professional sports markets have largely been neglected so far in this kind of research although they possess the characteristics of multisided markets. This conceptual paper contributes to filling this gap by describing the platform elements of professional suppliers of sports events and conceptually outlining issues where an application of this theoretical framework is likely to provide valuable insights and to add to the existing knowledge. Among these problems are integrative pricing strategies of sports clubs towards such different customer groups like attendees, broadcasters, sponsors, etc., including their welfare and antitrust implications, design decisions of sports associations in order to promote positive feedback loops among the customer groups as well as management strategies to reinforce positive externalities among customer groups and alleviate negative ones.

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1. Introduction

Why do professional sports clubs and their associations sometimes choose to sell broadcasting rights to Free TV despite better offers from Pay TV – like the German football Bundesliga did? Is it – as the sports protagonists claim – because they put the interest of the consumer above their own profit-maximizing? Why, sometimes, do sports clubs offer tickets and broadcasting rights for free – despite an existing willingness-to-pay? Why do sports clubs and associations engage in specific forms of commercialization while leaving out other obvious options? For instance, why are Formula One Grand-Prix broadcasts interrupted by commercials while U.S. football and basketball have introduced media-friendly additional breaks – and European soccer games do neither? These, and many more comparable questions of sports management and organization, have puzzled and motivated researchers in this field. We will not answer them comprehensively in this paper but we will discuss a new analytical framework that might help to obtain a better understanding of strategic decisions in sports markets, namely the theory of multisided markets.

During the last decade, the theory of multisided markets has been developed in order to analyse markets that differ from 'ordinary' goods markets in regard to the customer structure. An 'ordinary' goods market is generally modelled as suppliers competing for a definable group of customers. In the case of multi-product firms, this implies that these firms act on more than one relevant market, each of which can be analysed as a distinct (product) market. However, there are some markets in which firms deal with distinct groups of customers despite basically offering only one product. For instance, a magazine supplier deals with 'reader' customers who buy the final magazine as well as with 'advertiser' customers who buy advertisement space in the magazine. The analysis of such kinds of markets with the standard theory tools requires the researcher to construct distinctive markets for each customer group, in the example case a reader market and an advertiser market. Although many important insights about the competitive interactions can be derived by conducting such an analy-

sis, one important aspect becomes neglected: the construction of two distinct markets (i.e. reader market and advertiser market) inherently neglects the indirect interrelation of the two distinct customer groups (i.e. readers and advertisers) and, therefore, tends to overlook several important implications for the competitive strategies of the suppliers on such markets, who will rationally consider these interrelations of their customer groups. Thus, employing the theory of – in the example case – two-sided markets, which basically means to view the supplier and the two distinct customer groups as acting on one and the same market,[1] adds additional insights.

Consequently, the theory of multisided markets has and still generates manifold valuable insights to the analysis of markets like credit cards, media, software platforms, brokerage, and many more. However, it has yet to comprehensively enter into the analysis of professional sports markets[2] although we will argue in the following that they also possess the typical characteristics of multisided markets. We attempt to fill this gap by outlining some potentials of this analytical concept for sports markets. In doing so, we first provide an overview on important elements of the theoretical concept and its previous applications (section 2). Then, we redesign professional sports markets as multisided markets in order to demonstrate the applicability of the concept (section 3). Eventually, we outline some implications for the analysis of sports business (section 4). Finally, section 5 concludes.

1 The name ‚two-sided' market was originally chosen to characterize the two sides of demand (customer groups) a supplier on such a market must deal with. However, since every market consists of 'two sides' in a different sense (supply and demand), the adequateness of this name is subject to controversy (e.g. *Evans & Schmalensee* 2007). Next to the simple enhancement towards cases of more than two distinct customer groups ('multisided' markets), the term 'platform' markets is preferred by some. Yet, 'two-sided' or 'multisided' respectively seem to be the established terms, wherefore we will use them in the following.

2 Notable exemptions include *Hartwich* (2007), *Bae & Kwon* (2008), *Dietl & Duschl* (2009), *Lyons* (2009), and *Dietl* et al. (2010).

To illustrate the idea of multisided markets, consider a professional soccer[3] club playing in, for instance, the German premier league (Bundesliga). In sports economics, a long tradition of reasoning views professional sports clubs (like premier league soccer clubs) as resembling profit-maximizing firms (individual clubs) or industries (leagues) (*Rottenberg* 1956; *Hoehn & Szymanski* 1999; *Fort & Quirk* 2004) rather than non-profit (serving the public good) sports clubs (as they often prefer to view themselves; somewhat supported e.g. by *Madden* 2008). Notwithstanding this controversy, it can still be assumed that their primary objective is to score victories. On the one hand, as clubs compete for players, titles, and coaches, profits and financial strength can be considered as derived objectives and necessary conditions for sportive success. On the other hand, sportive success can be viewed as a prerogative for profit maximization. Most likely, the 'typical' professional sports club (owner) possesses a non-trivial objective function that includes profit maximization elements as well as sportive success elements (*Zimbalist* 2002; *Sloane* 2006; *Szymanski* 2006; *Storm* 2010). For the purpose of the following discussion, however, it is not necessary to distinguish the dominating causality direction between 'creating revenues' and 'winning' (*Noll* 2007: 410).

2. Sports Markets as Multisided Markets

2.1. A Brief Introduction

The genesis of the more general theory of multisided markets was inspired by economic expert analysis into the market for payment cards in the course of antitrust proceedings (*Rochet & Tirole* 2002; *Schmalensee* 2002), in particular challenging the business behaviour of VISA and MasterCard (*Evans* 2003: 27-30, 62-64). However, it was soon realised that the particular features of multisided markets encompass more industries and, therefore, a comprehensive general concept was developed by seminal contributions (*Caillaud & Jullien* 2003;

3 Throughout this paper, when referring to European football we will use the U.S. term 'soccer' and the European term 'football' interchangeably.

Evans 2003; *Rochet & Tirole* 2003; *Armstrong* 2006) as well as by paradigm-consolidating surveys and progress reports (*Roson* 2005; *Rochet & Tirole* 2006; *Armstrong* 2007; *Evans & Schmalensee* 2007). Two of the pioneers, *Rochet & Tirole* (2006) provide the following definition: "A market is two-sided if the platform can affect the volume of transactions by charging more to one side of the market and reducing the price paid by the other side by an equal amount; in other words, the price structure matters, and platforms must design it so as to bring both sides on board." More generally, a multisided market requires (*Evans & Schmalensee* 2007)

- the existence of at least two *distinct* (i.e. clearly distinguishable and delimitable) customer groups,

- which are indirectly connected by indirect network effects (*externalities*), and

- these externalities cannot be sufficiently internalised (for instance, side-payments and arbitrage do not work because of *transaction costs*).

This framework has been applied to several different markets (see table 1 and *Evans* 2002; *Roson* 2005; *Armstrong* 2007; *Evans & Schmalensee* 2007). Notably commercial media that is at least partly financed by advertising has been one of the prime applications (*Anderson & Coate* 2005; *Anderson & Gabszewicz* 2006; *Kaiser & Wright* 2006; *Kind* et al. 2007; *Dewenter & Haucap* 2009). Due to their relative closeness to the multisided phenomena on sports markets, we will use insights from advertising-revenue financed media for the purpose of illustrating the more general implications of the multisided markets framework. Let us assume that a magazine is partly financed through the price that readers pay and partly through advertising revenues. Thus, the first distinct customer group, A, might be the readers and group B the advertisers. If the magazine publisher increases the price of the magazine, the demand from readers will probably decrease (standard demand reaction). However, with fewer

readers, the magazine loses attractiveness for advertisers who want to reach as large of an 'audience' as possible. In other words, there is a positive externality from the degree of 'participation' of the customer group readers (A) towards the benefit for the customer group advertisers (B). It can be called an indirect network effect since – in contrast to direct network effects – the network effect refers to the other customer group ('the other side'). Yet, this relation is not necessarily the same the other way around. More advertisement (equals higher 'participation' from group B) might well make the magazine less attractive for customers who feel distracted by the dominance of advertising. This would represent an indirect network effect in the form of a negative externality from B towards A. Whether the externalities are positive or negative and whether they are the same in both directions (like with payment systems or matching agencies) or not depends on the industry in question (see the overview in tab. 1) and does not change the nature of a multisided market and its basic implications driven by the *existence* of indirect network effects (*Evans* 2002; *Anderson & Coate* 2005; *Anderson & Gabszewicz* 2006; *Rochet & Tirole* 2006; *Armstrong* 2007; *Dewenter & Haucap* 2009; *Lyons* 2009).

The special characteristic of multisided markets is that firms facing at least two distinct customer groups for their product experience reactions on both market (demand) sides if they change the price (or other conditions) for one of the customer groups. A rational, profit-maximizing entrepreneur will take the interaction of the distinct customer groups into account and, accordingly, behave differently compared to an 'ordinary' goods market. A platform supplier experiences incentives to manage the externalities between the customer groups by setting special pricing structures and market design decisions – and these special strategies can promote the benefit of all customer groups (procompetitive strategies with respect to consumer welfare) or allow the supplier to increase its own benefits at the expense of at least some customer groups (anticompetitive strategies). However, the distinction between pro- and anticompetitive strategies will differ from the usual understanding in 'ordinary' goods markets.

Table 1: Examples of Multisided Markets

Industry	Distinct Customer Groups	Externalities (exemplary)
Transaction Systems, like credit cards (etc.)	a. merchants (accepting the card as payment) b. consumers (paying with card)	If participation of a increases, then participation of b will c.p. increase (a ↑ ➔ b ↑). b ↑ ➔ a ↑
Matching Agencies, like employment agencies and dating agencies (or travel agencies, etc.)	a. unemployed / male singles b. companies with vacancies / female singles	a ↑ ➔ b ↑ b ↑ ➔ a ↑
Brokers, like estate agents (or: stock markets, auction houses, etc.)	a. estate owners wanting to sell b. potential buyers of estate	a ↑ ➔ b ↑ b ↑ ➔ a ↑
Media Markets, like magazines (or newspapers, commercial TV, commercial radio, etc.)	a. readers b. advertisers	a ↑ ➔ b ↑ b ↑ ➔ a ↓
Software Platforms, like operating systems	a. application software developers b. users	a ↑ ➔ b ↑ b ↑ ➔ a ↑
Video Games	a. game developers b. players	a ↑ ➔ b ↑ b ↑ ➔ a ↑

2.2. Does Sports Business Face Multisided Markets?

In order to apply the multisided framework to sports business, the platform supplier and its distinct customer groups must be identified. Naturally, (profes-

sional)[4] sports markets differ remarkably, with one of the major differences being League sports (organized as games between pairs of teams, such as football, basketball, baseball, etc.) and Championship sports (where a series of tournaments is combined to a championship, like in golf, tennis or motor racing).[5] In order to illustrate the multisided character of sports markets, we focus in the following on European-style football (sometimes labelled soccer).[6]

2.2.1 Distinct Customer Groups in Sports

So, what are the market participants (supply and demand) in a premier national football league like, for instance, the German Bundesliga? A Bundesliga football club offers its product (the games of its team) to several groups of customers:[7] (1) fans buying tickets to watch a match live in the stadium ('attendees'), (2) TV channels (and other media) buying broadcasting rights ('media'), (3) advertisers and sponsors buying advertisement space within the arena or 'on the players' ('sponsors'),[8] (4) firms or other actors renting the stadium for other purposes than football matches ('other arena users'), and eventually (5) fans

4 Our focus on professional sports should not imply that amateur or voluntary sports clubs do not face a multisided 'market'.

5 Sometimes the championship consists of a single event like the Olympic Games or the athletics world championship.

6 We believe that the general characteristics can be transferred to other sports disciplines but, of course, details will differ.

7 Note that some of these customer groups do not actually 'buy' from the club due to specific institutional arrangements like a centralized sale of broadcasting rights through a sports association (acting on behalf of the individual clubs) or a stadium that is not owned by the club (for instance, sold and released). We tend to neglect this in the following because by describing the 'pure' market we uphold the possibility to analyse these institutional arrangements as strategic reactions to the multisided character of the market.

8 We will call advertisers that place advertisement in the arena/stadium or on the tricots of the players as 'sponsors' in order to distinguish them from advertisers that place commercials on TV broadcasts. Note that the latter do not belong to this customer group because they buy their product (advertisement space) directly from media (TV channels, etc.).

who buy merchandising-products ('merchandise demand').[9] The issue at hand is whether the above-listed customer groups qualify as distinct.

(1) Attendees: attendees of a soccer match who buy tickets and watch the match live in the arena represent the first distinct customer group. They consist of consumers who seek to experience an event. Their interest is to enjoy the match, the atmosphere of a live event, and to be part of a common (homogeneous) fan group.

(2) Media: the broadcasting TV channels qualify as the second distinct customer group of soccer clubs. This group can be subdivided into Pay TV (financed directly by the viewers) vs. Free TV (financed by revenues from advertisements) as well as private TV channels vs. public ones (financed by tax revenues or special fees).[10] Private Pay TV or Free TV channels can obviously be assumed to be profit-maximizing enterprises. This may be more difficult with public TV that usually serves some societal interests (education of the public, preservation of cultural identity, etc.).[11] For the seasons 2006/07-2008/09 the German Soccer League (DFL),[12] acting in the name of the participating clubs, sold the licence for broadcasting matches live to the Pay-TV channel *Arena/Premiere*. The German public and free TV station *ARD* acquired the authorization to broadcast a brief summary of all matches shortly after their end. Whereas *Arena/Premiere* is solely financed by subscription, at least half of *ARD*'s revenues are generated by advertisements. As far as soccer matches are

9 An additional dimension might come into play if stock market football clubs, like Borussia Dortmund GmbH & Co. KGaA are considered (*Stadtmann* 2004).

10 For a comprehensive discussion of the interrelations between different types of TV channels in regard to the demand of sports broadcasting rights see *Noll* (2007).

11 Often, public TV channels are financed by a mixture of revenues from advertisers and public fees. This is usually accompanied by a mixture of targets – some combination of public interests (revenues from fees) and profit-maximization (revenues from commercials).

12 The DFL is a profit-maximizing association of all 36 premier and second league soccer-clubs being in charge of centralized media marketing.

concerned, broadcasting is (said to be) entirely financed by advertisements.[13] Despite their differences, both types of TV channels seek to maximize the amount of viewers in order to maximize their revenues either generated by subscriptions or commercials.[14]

(3) Sponsors: the profit maximizing customer group arena advertisers and sponsors, consisting of business companies from almost every industry, aims to (i) maximize its media presence and (ii) connect the image of its products to the image of the sports club brand in order to increase the demand for their goods and services (*Grohs* et al. 2004). They can promote their products and brands on items that are visual via TV, such as the players' shirts and perimeter advertisements, or on items that are visual only at the location, i.e. promotion that is placed outside or within the arena like billboards or acoustic adverts. Sponsors are clearly distinct from the first two customer groups. Tricot sponsoring alone amounted to about € 130 million for the 18 Bundesliga clubs during the season 2008-2009 with the German T-Com (Bayern München) and Volkswagen (VfL Wolfsburg) as well as the Russian Gazprom (FC Schalke 04) being the leading sponsors with an annual volume of about € 20 million each. The leading industries were energy and transport & logistics, each sponsoring 4 clubs, followed by information and computer technologies representing 3 of the main tricot sponsors.[15]

(4) Other arena users: furthermore, soccer clubs can rent the stadium to companies for other purposes than for soccer-based events.[16] If so, clubs diversify and

13 Obviously, there is scope for conflicts of interests. However, this is beyond the scope of this paper.

14 Note that commercial TV channels themselves can be modelled as a platform for another multisided market where advertisers and viewers interact (e.g. *Anderson & Gabszewicz* 2006).

15 http://szenenapplaus.de/2008/08/20/bundesliga-20082009-sponsoren-analyse/

16 It is obviously a precondition for this customer group to come into consideration that the club actually owns the facilities. If the facilities are owned by an unrelated company (i.e. are not in ownership of the club) or public actors (like the city), then the following discussion is void. In reality, both models (club-owned facilities vs. public- or unrelated-business-owned facilities) exist.

actively take part in other branches like concert and event management. Concert and event management companies try to find an appropriate location for every occasion; therefore, they will take into account considerations about infrastructure, maximum capacity, and convenience. On the one hand, they can be qualified as a distinct consumer group. However, on the other hand, they do not 'buy' the product 'professional football game'. Instead, they 'consume' merely a smaller part of the overall product – namely the arena facilities.

(5) Merchandise demand: one could argue that fans who buy merchandizing products sold by their favourite club could be a potential additional customer group. However, it seems doubtful whether this group qualifies as distinct since it seems plausible that the group 'attendees' has a significant overlap with the group 'merchandise demand'. Fans who buy tickets most likely are the same who buy merchandizing products in order to demonstrate their affiliation to the club and a homogenous group of fans. Thus, regarding attendees and merchandise customers the concept of a multiproduct firm seems to be more appropriate.

2.2.2 Indirect Network Effects among the Customer Groups

To meet the characteristics of a multisided market the customer groups of a Bundesliga football club have to be indirectly connected by externalities which cannot be sufficiently internalized. In other words, positive or negative externalities between the different sides of a sports market affect the utility of each market side indirectly. What kind of such indirect network effects can a football club expect to exist among each pair of customer groups?

(I) Attendees – Sponsors

Sponsors prefer platforms that attract a high amount of attendees. The more fans watch a match in the stadium, the better the reach of the advertisement. Thus, there is a positive externality from attendees to sponsors: a larger participation of the customer group 'attendees' increases the participation of the cus-

tomer group 'sponsors'. However, there is not necessarily a positive feedback loop as the positive externality is not likely to run into both directions. The question is whether attendees value sponsor activity in the arena. While it can be reasonably assumed that a low level of advertisement activity within the arena might not exert any considerable effect on fans' utility, an increasing level of advertisement can lead to a reduction of attendees' utility. Empirical evidence indicates that fans tend to develop a strong disfavour when the intensity of promotion rises beyond certain thresholds of advertisement perception (*Turco* 1996; *Pyun* 2006; *Manaï* 2008; with a rather narrow perspective also *Dees* et al. 2007).[17] For instance, a significant negative effect can be ascertained for perimeter advertising, particularly with regard to electronic soccer boards (*Hartwich* 2007).[18] Thus, it might be reasonable to assume a negative relationship between the amount of advertisement and the attendees' benefit.[19]

(II) Attendees – Media

The relationship between the customer groups 'attendees' and 'media' (predominantly TV channels) is quite complex. The effect of a large participation of the customer group 'media' (i.e. comprehensive broadcasting) on the participation of the group 'attendees' looks somewhat ambivalent. On the one hand, attendees might view watching soccer matches (live) on TV and attending the stadium to be substitutes (inter alia *Allan & Roy* 2008). Then, the existence of accessible and prompt broadcasting (for instance, live-broadcasting in Free TV) would decrease demand for tickets (negative externality from TV channels towards attendees). It can be viewed critically, though, whether a re-construction

17 In sports markets, an additional element might be that sports fans tend to disfavour the commercialisation of the sport, symbolised by higher frequencies and a stronger presence of advertising (*Fort* 2005: 1-12).

18 With electronic soccer boards flashing and see-sawing adverts in the display change every few seconds which can negatively affect the attention paid to the match.

19 Drawing on media economics, the general presumption is that audience and readers suffer from advertisements, at least if the frequency of commercials exceeds certain thresholds (inter alia *Evans* 2003; *Anderson & Gabszewicz* 2006). However, while this seems to be generally correct, some studies find a positive value of some advertising on audience/readers (e.g. *Kaiser & Wright* 2006).

of this phenomenon as being multisided adds much insight compared to a simple model of alternative distribution chains (fans 'buying' the game either directly from the producer or indirectly through the 'retailer' TV channel).

While this seems rather plausible for live-broadcasting, other features of the interrelation of attendees and media represent a stronger argument for analysing indirect network effects. For instance, a negative externality is not unambiguous for time-delayed broadcasting since it might well benefit attendees as they can see especially entertaining sequences again and in slow motion, from different angles and so on. On the other hand, programmes that summarize all games of a matchday by showing extracts are probably viewed to be complements to going into the arena and, thus, produce a positive indirect network externality on attendees. The latter will generally be interested in not missing the best scenes from alternative matches. A better 'participation' of the customer group 'media' in this regard might increase the 'participation' (ticket demand) of the customer group 'attendees' (indirect network effect). In summary, it seems plausible to assume that the bigger the time lag is between the end of the matches and the (full-length) broadcasting time on (Free) TV, the higher the demand for tickets will be *c.p.* Summarizing programmes, on the other hand, should exert a positive influence on the demand by attendees.

The other way around, the participation of attendees produces an indirect network effect (in the form of a positive externality) on TV channels since the popularity of a sports discipline matters for the channels' business strategy. Large crowds in stadiums support popularity, enhance the experience character of the match ('must attend') and, moreover, create an atmosphere that also improves the broadcasting. A broadcast from an arena that is crowded and full of enthusiastic fans is more attractive to the customers of TV channels than a broadcast from an empty stadium – and more likely to create a commonality effect.

(III) Attendees – Other Arena Users (OAU)

Attendees could cause positive externalities for OAUs if a high average demand for tickets, i.e. a high number of (weekly) attendees, result in investments in, for instance, a better technical endowment or an improvement in the infrastructural environment of the arena that also benefits concert and event managers. Those improvements and modernizations may attract more people for concerts or events. However, it can be seriously questioned whether this indirect network effect is anything more than rather weak or even insignificant. Therefore, we will not go into it in the following.

On the other side, however, empirical evidence shows that attendees value pure football arenas significantly more than multifunctional stadiums (*Feddersen & Maennig* 2009), so that a negative externality from OAUs towards attendees can be suspected. According to *Feddersen & Maennig* (2009), multifunctional stadiums reduce the demand for tickets by about 10 percent.

(IV) Media – Sponsors

Consumers of goods and services can be more widely reached by TV commercials than through any other medium (like print, internet etc.). Therefore, advertisers in the arena and sponsors of soccer teams will indirectly profit from clubs selling extensive broadcasting rights to TV channels (positive externality from media towards sponsors; *Grohs* et al. 2004). Sponsors will tend to invest more if they know that their arena or tricot promotion will be seen on TV. These positive externalities for arena advertisers and sponsors will even increase if matches are repeatedly broadcasted by Pay TV, private and public TV channels. As a consequence, arena advertisers and sponsors increase their utility because of a better 'participation' of the customer group 'media' (without bearing higher costs since they do not have to compensate any TV channels for causing positive externalities).

TV channels, on the other hand, may be harmed by extensive arena advertisements and club sponsors due to cannibalization effects. Companies placing ad-

vertisement in the arena might view this as a substitute for buying advertisement space on TV (placing commercials) and, thus, refrain from doing the latter. Therefore, extensive advertisement in the arena, on players' tricots, etc. tends to reduce the media's willingness-to-pay for broadcasting rights since it aggravates the re-financing for commercial media by selling airtime for TV ads and commercials. From the perspective of the sports club, an indirect network effect between the customer groups 'sponsors' and 'media' (negative externality from sponsors towards media) must be considered.

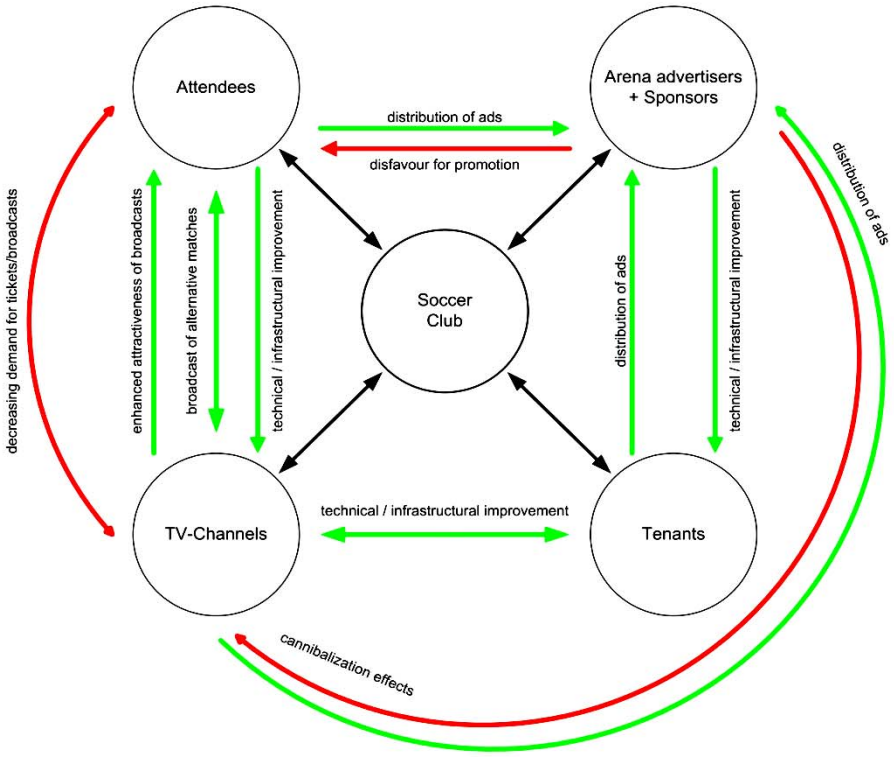
(V) TV channels – Other Arena Users

The underlying rationale is similar to that brought up for attendees and OAUs. TV channels may cause positive externalities for OAUs if broadcasting soccer matches results in e.g. a better technical endowment or an improvement in the infrastructural environment. In addition, an increase of a stadiums' popularity via broadcasting could again yield a higher demand for concert tickets. One could argue here that people may become less reluctant to attend an arena they already know from TV, in other words, a stadiums' popularity can even enhance the probability to join an event due to familiarity reasons. Once again, these bi-directional positive externalities are likely to be rather weak and perhaps even insignificant, so we will refrain from getting in to this as well.

(VI) Sponsors – Other Arena Others

Arena advertisers may profit from concert and event managers renting a stadium provided that perimeter advertising, billboards, and other types of promotion will not be removed for occasions other than soccer matches. However, it is difficult to see any relation in the other direction. Generally, the same reservation as in (III) and (V) holds.

Figure 1: Externalities among different consumer groups of soccer clubs



From this example discussion of a Bundesliga professional soccer club, it can be seen that sports markets can be interpreted as possessing the characteristics of multisided markets. But what are the implications of viewing sports markets as being multisided?

2.2.3 Some Basic Strategy Implications

The first set of typical implications from analyzing markets as being multisided concerns the *price structure*. Any supplier in such a market faces at least two distinct customer groups and his price-setting towards the two customer groups – say A (attendees) and S (sponsors) – interacts with each other. If a supplier decreases the price for A-customers, then demand from A-customers increases

(standard demand reaction assumed).[20] However, due to the indirect network effect between the two customer groups, S-customers will also be affected. Assume that according to the reasoning in the preceding section there is a positive externality, i.e. S-customers as a group benefit from the relative participation of A (i.e. quantity of A-demand). Thus, S-demand will increase as a consequence of the increase of A-demand. If the positive externality runs into both directions, then the increase of S-demand increases utility of A-customers, wherefore a further increase of A-demand as a consequence of the increase of S-demand might come into play – and so forth (positive feedback loop; self-reinforcing development). However, the discussion in the preceding section shows that beyond a certain perceptibility threshold A-customers might be harmed by S-customers: too much arena and tricot advertisement may reduce fan interest (negative externality). Consequently, even if the first step – S-demand increasing as a consequence of increasing A-demand – exists, this does not necessarily imply that customer group A also benefits from customer group S (A↑ → S↑ but S↑ → A↓).

When setting prices towards the two customer groups, a rational manager will take into account these interrelations between his customer groups. Instead of the 'ordinary' case, he faces the modified demand functions

(1) $Q_A = D_A(P_A, Q_S)$

(2) $Q_S = D_S(P_S, Q_A)$

Relevant elasticities for profit-maximizing price setting include the partial own-price elasticities

(3) $(I = A, S) : E_{Q_I, P_I} = -\frac{\partial D_I}{dP_I}\frac{P_I}{Q_I}$

20 See *Fort* (2006) for a survey on ticket demand analysis for sports markets.

(if price for customer group A (S) increases, then c.p. demand quantity from A (S) decreases (effects on other customer groups ignored)) and the 'cross-quantity' elasticities, for instance

$$(4) \quad E_{Q_A,Q_S} = \frac{\partial D_A}{\partial Q_S}\frac{Q_S}{Q_A}$$

for the case if demand quantity from customer group S increases, then c.p. demand quantity from customer group A also increases (price effects ignored), or

$$(5) \quad E_{Q_S,Q_A} = -\frac{\partial D_S}{\partial Q_A}\frac{Q_A}{Q_S}$$

for the case if demand quantity from customer group A decreases, then c.p. demand quantity from customer group S increases (price effects ignored).

A similar reasoning could be established with a view to inelastic ticket pricing (critical overview: *Fort* 2006). This widespread practice seems to counter a profit-maximizing strategy by the club owners. However, a multisided market approach might be helpful to identify certain rationales behind inelastic ticket pricing in addition (and not as a replacement) of those discussed in the existing sports economic literature (summarized in *Fort* 2006). If a full, largely sold-out arena exerts an indirect network effect on other customer groups (media and sponsors, see section 2.2), then pricing attendees below the (isolated) optimum can be profit-maximizing as it increases the 'participation' by and thus the revenues from other customer groups.[21]

Considering this special price-setting situation for the supplier yields two important implications of multisided markets theory:

21 Note that the basic mechanism described here is not necessarily new (roughly similar: *Heilmann & Wendling* 1976). However, the framework of multisided markets may offer a more comprehensive and more systematic concept to enlarge our knowledge about such phenomena.

- the rule ‘price equals marginal cost’ is usually not optimal for competitive suppliers; the rule ‘marginal revenue equals marginal cost’ is usually not optimal for monopolists, and

- prices below marginal costs for one customer group can be efficient and in line with competition; they do not necessarily represent (anticompetitive) predatory pricing.

From a management perspective, this implies that a club reducing ticket prices may increase the number of attendees, which in turn will make advertising in this stadium and on the players more attractive (positive externality). Consequently, the demand for advertisement space increases, so that the prices for the customer group “sponsors” can be increased, too. Put differently, clubs may subsidize the ticket prices (attendees) by the prices for advertisement (sponsors).

Ignoring the other customer groups (like media; see section 3) might allow for a rational and competitive strategy where attendees are priced below marginal costs (MC) and sponsors above marginal costs. Standard analysis of ‘ordinary’ markets would yield

→ $P_{ATTENDEES} < MC$ ➔ predatory pricing,[22] and
→ $P_{SPONSORS} > MC$ ➔ market power (exploitation of customers).

From the perspective of multisided markets, however, such a price-setting represents a procompetitive business strategy and does not necessarily imply welfare losses. Maximising the (relevant) customer group ‘attendees’ by ‘subsidisation’ in order to maximise revenue from arena advertisements and sponsors might represent a procompetitive strategy because incentives exist to provide

22 In a more radical scenario, it could be perfectly competitive to allow attendees to join the arena for free ($P_{ATTENDEES} = 0$) in order to create a better ‘participation’ (higher revenues) from the customer group sponsors.

the attendees with a preference-conformal product (→ welfare increase) while, at the same time, the marginal willingness-to-pay of the sponsors equals their (due to the larger crowd increased) marginal utility (→ no loss in efficiency)! However, the optimization problem is not trivial since too much arena and tricot advertisement may reduce fan interest (negative externality).

In summary, competition in multisided markets differs from competition in 'ordinary' markets. Suppliers in multisided markets face complex interrelations between prices, quantities, and costs. At present, only few general conclusions can be derived from this very young research concept and much (still) depends on case-by-case analyses.

A second set of implications refers to (market) *design decisions* and *the regulation of externalities* (*Evans & Schmalensee* 2007). Business in multisided markets attempts to attract customers on all sides of the market. In order to achieve this, suppliers try to stimulate the interaction between the two customer groups if a positive externality is conjectured and to reduce it if a negative externality is conjectured. Referring to our example of attendees and sponsors of a professional football club, the club might conjecture that the audience in the arena wants comfortable and undisturbed access to the 'pure' game and 'unwanted' commercial breaks and distractions will interfere with these preferences. However, instead of reducing the amount of advertising within the arena (in order to attract more 'participation' from the customer group attendees), the club experiences incentives to integrate advertising in such a way that the fans cannot escape them (for instance, by ignoring it or temporarily leaving the stadium during commercials in the break) – and, furthermore, the disturbance from them is minimized. Name sponsoring (*Leeds* et al. 2007), like the re-naming of the traditional Volksparkstadion as IMTECH Arena[23] in Hamburg or the naming of fan sections ('Langnese Familienblock') is one possibility, the integration of advertisement with desired information (for instance on the electronic score-

23 From 2001-2007, the name was AOL Arena; from 2007-2010, it was named HSH Nordbank Arena.

boards) another one. A third one is having companies as presenters of information, like ‘company X is presenting today’s number of attendees’. In other words, the supplier might want to bundle or tie product and advertising in order to make them inseparable for consumption. Despite the fans becoming harmed (decrease of utility) on the one hand, it also benefits them on the other hand since the supplier can attract more advertisers and, thereby, improve the price-performance-relation of its product, for instance buying better players (better talent), or improving facilities. As a consequence, bundling and tying strategies that are viewed to be harmful in ‘ordinary’ markets must be assessed in a more differentiated way in multisided markets.

Attempts to regulate or influence the strength of the existing inter-customer groups’ externalities are related to such kinds of design decisions and often complement them. In general, suppliers in multisided markets experience incentives to artificially increase positive externalities among the customer groups and/or artificially decrease negative externalities among the customer groups. Regarding our example football club this might involve efforts to improve the (positive) consumption reaction of fans to arena advertising and sponsor perception or to minimise the disruptive factor of commercialization on the fans, for instance by trying to influence the ‘public’ opinion about it. Vice versa, professional sports club are interested in increasing the awareness of potential sponsor industries about the positive marketing effect of financing sports.

3. Can It Be Helpful to Analyze Sports Markets as Being Multisided?

After having laid out how sports markets can be interpreted and modelled as being multisided markets, we now want to outline how this framework can help to address problems and interesting phenomena in sports markets. Due to the character of this article as a more programmatic essay, the following section does not attempt to provide rigorous and full-blown analyses of the discussed

issues. This would indeed require further research and stand-alone papers on these issues. We 'merely' want to outline that analysing problems of sports business with the theoretical framework of multisided markets offers potential for explanation and policy conclusions that complements existing wisdom. Therefore, we only sketch some implications and attempt to motivate further research.[24]

3.1. Pricing Strategies

On multisided markets, the existence of multiple groups of consumers affects the suppliers' pricing strategy because of complex interrelations between prices, quantities, and costs. Hence, suppliers have to take into consideration that setting prices for one customer group influences demand quantities of the other customer group(s). Therefore, the amount of transactions made depends on the prices on each market side. As a result, it can be efficient to set a price below marginal costs, or even a zero-price, to subsidize one or several groups of consumers by other ones.

3.1.1 Profit-maximizing Broadcasting Revenues

To illustrate possible effects on quantities and prices charged, let us firstly stick to the example of German soccer clubs. In 2005, for instance, the DFL sold broadcasting-rights (encompassing the years 2006-2009) to the Pay TV channel *Arena* for € 240 million total per annum, although the competing Pay TV channel *Premiere* offered the much higher amount of € 300 million. At first glance, this does not seem to be a rational, profit-maximizing decision made by the 36 clubs of the first and second German soccer division. This impression does change, however, as soon as we take suppliers' strategies on multisided markets explicitly into account (*Hartwich* 2007). Besides the amounts of money paid by the channels, the offers include restrictions concerning the broadcasting times

24 Accordingly, we waive comprehensive reviews of the existing (non-multisided market) literature on these matters.

in Free TV. *Premiere*'s € 300 million bid restricted the free TV channels to begin broadcasting before 10 p.m. whereas *Arena* authorized for broadcasts starting at 6 p.m. offering no more than € 240 million, though. The minor offer for this latter option seems reasonable as a free and immediate summary will decrease the demand for subscriptions (Pay TV channels' main source of income) and, therefore, channels' revenues. Nevertheless, the DFL presented its choice as a fan-friendly decision, taking care of soccer fans, keeping them able to watch at least a free summary of all matches promptly after their end (let us refer to this as the 'charity-approach').

If we think of the multiple consumer groups of soccer clubs, their interrelations, and existing indirect network effects, a more differentiated view than the 'charity-approach' evolves. Soccer clubs face a trade-off between revenues generated by selling broadcasting licences and those generated by other customer groups. In Germany, traditionally, most professional soccer games take place on Saturdays between 3:30 p.m. and 5:15 p.m., and Free TV traditionally offers a very popular summary on Saturday somewhere between 6 p.m. and 8 p.m. If this type of free accessibility of a TV summary in due course after the games have been finished represents an important asset for arena visitors and, furthermore, contribute significantly to audience building (attracting new fans – younger ones, family members, etc. – that subsequently will visit games, buy merchandise, and so on), it can be a profit-maximizing strategy to reinforce the positive externality between TV broadcasts and attendees. In a similar vein, an easily accessible and widespread Free-TV broadcast enhances the willingness-to-pay from arena advertisers and sponsors because they can reach a broader audience by their advertisements (that are also seen on TV and not only by the attendees). In the case of the DFL, an alternative explanation to the 'charity-approach' might be that the *Arena* offer was the profit-maximizing bid if the combination of price for broadcasting rights and influence on positive externalities between Free TV broadcasts and attendees / popularity of soccer as well as arena advertisers / sponsors is considered.

Interestingly, the negotiations of the follow-up contract brought a very different result. In 2008, the DFL chose the absolute highest offer that included the abolishment of early Saturday evening summaries in Free TV and, instead, entailed a far-reaching shifting of soccer broadcasting to Pay TV with extensive exclusivity rights. The association of professional soccer clubs agreed to sell licences for live broadcasting exclusively to a company named *Sirius*. *Sirius* had offered € 500 million per annum for a six-year deal and intended to resell most of the broadcast rights to *Premiere* (Pay TV), an amount that doubled the previous price and clearly offset offers with larger Free TV involvement. Particularly, the clubs agreed to Premiere's demand that summaries of the matches should not be shown on Free TV before 8 p.m. Does this imply that (i) the DFL gave up on its 'charity approach', or (ii) it had no other possibility to uphold the international competitiveness of German soccer clubs (as the DFL claims),[25] or (iii) the externalities between TV channels and attendees / popularity of soccer have changed wherefore a different pricing strategy towards the distinct customer groups has become profitable?

Focusing on the third line of explanation – for the purpose of this paper – one could think about the influence of the World Cup and the European Football Championship that took place in the meantime. In particular, the World Cup in Germany in 2006 (to a lesser extent also the European Championship in Austria and Switzerland 2008) caused an unexpected boom in the popularity of soccer (that was somewhat stagnating or even slightly declining – admittedly from a high level – before), which implies that the positive externality between close-to-the-matches Free TV summary broadcast and attendees / popularity might have been alleviated to some extent. The own-price elasticity of ticket (and merchandise) demand might have become more inelastic (stronger fan basis) as well as the cross-quantity elasticity (reduction of the positive externality). This

25 The clubs claim that broadcast revenues are very important especially for small clubs to survive and to stay competitive especially regarding international contests like the UEFA Cup or the Champions League. More money is said to be needed in order to be able to contract valuable players even in the future (Manager-magazin, 18.7.08 ; Sportsillustrated, 24.8.08).

would imply a shift in the optimal pricing strategy of the sports association towards a higher pricing of broadcasting rights and less regard to accessibility of broadcasting – which exactly is what happened. An explanation along these lines would require and deserve more research as it promises a valid explanation of the observed strategy change of the DFL.

Next to explaining such a change in business strategy, the theory of multisided markets might also help to assess whether this strategy switch justifies public intervention. The Federal Cartel Office (FCO) of Germany most recently prohibited the DFL-*Sirius* deal (*Bundeskartellamt* 2008). Centralised marketing of broadcasting rights by a sports association represents a cartel of suppliers of soccer games (the clubs), something that is generally prohibited according to competition law (§ 1 German Act against Restraints of Competition ARC). Exemptions are only possible if – among some other conditions – consumers (i.e. fans; not intermediate customers like the TV channels) benefit from the cartel (§ 2 ARC). The FCO argued, however, that the new model did not go far enough in protecting the rights of consumers. It effectively prohibited the deal demanding that the highlights of most of the matches must be available to a broad population and need to be shown before 8 p.m. A later broadcast would lure people to Pay TV leading to higher prices for consumers.[26] A sound economic foundation of such reasoning by referring to the theory of multisided markets would fit into the 'more economic approach' that is currently promoted in European competition policy.[27] Analysing the DFL-*Sirius* contract against the background of multisided markets theory could, of course, on the one hand lead to a better economic fundament of the prohibition decision but, on the other hand, also to the finding that there actually is no significant competitive harm in regard to consumers.

26 Noticeably, the FCO accepts that centralized marketing of broadcasting rights can, in principle, improve consumer welfare. This is controversial in sports economics as for instance *Noll* (2007) derives generally negative welfare effects of centralized broadcasting.

27 However, the Commission's industry-specific competition policy towards sports business has also not yet embraced the multisided market or platform competition aspects (*Budzinski* 2011).

3.1.2 Broadcasting Rights, Ticket Prices, and Negative Prices

Moreover, one could also think of clubs subsidizing ticket prices by charging higher prices for broadcasting rights. Ticket prices have an effect on TV channels' demand to purchase broadcasting rights, which becomes all the more true if we take broadcasting time into account. Potential attendees can choose to subscribe to a Pay TV channel, watch matches live or see brief summaries on Free TV. It seems plausible, though, to assume that the bigger the time lag between the end of the matches and the broadcasting time on Free TV, the higher the demand for tickets as well as Pay TV subscriptions and the lower the demand for the Free TV programme will be *c.p.* The allocation of licences can be controlled for by the DFL with regard to ticket prices and prices of broadcasting licences, simply by varying the prescriptions for broadcasting times. Taking all customer groups into account subsidizing may be a procompetitive strategy for clubs aiming to maximize total revenues.

If we turn to less popular sports disciplines than soccer in Europe, then, besides subsidizing ticket prices (i.e. charging a price lower than the marginal costs), it can even be a reasonable business strategy for a sports association to pay TV channels for broadcasting (i.e. to set a negative price) in order to make the (perhaps largely unknown) discipline more popular among TV viewers, thus attracting audiences in the arenas as well as buyers of merchandise and/or discipline-specific equipment, thus attracting sponsors. In the long run, this might even lead to an upward spiral so that eventually TV is developing a willingness-to-pay for broadcasting rights. The theory of multisided markets offers a natural framework for analysing such types of strategies.

3.2. Design Decisions and Regulation of Externalities

To make pricing strategies even more effective, professional sports associations may change or modify the play in order to attract more participation from one

side of the market (i.e. consumer groups), for instance making the game more TV-friendly by

- introducing extra breaks, in which TV channels with live coverage can place ads. For example U.S. football and basketball have introduced specific time-outs with no other purpose than to accommodate additional commercials but preventing TV viewers from missing important parts of the game (*Leeds & von Allmen* 2008: 88)

- introducing a TV-friendly format. An enhancement of the visibility of action (e.g. coloured Judogi in Judo) may be one example

- modifying the rules i.e. the institutional framework of a game in order to make the sports event more accessible for non-expert viewers (by introducing a more transparent and easier evaluation scheme, etc.). Moreover, professional sports could be made more attractive for TV coverage by increasing the competitive balance or making things more spectacular and thrilling. In the Formula 1 racing rules modified: teams are obliged to use the same sort of tires produced by only one manufacturer during a race. This aims at enhancing the smaller teams' ability to compete with financially stronger and prominent teams. In addition, the rules for the qualifying session (determining the position at the start of the motor race) were changed towards a shoot-out format to make it more exciting, seeking to attract more viewers

- attracting or developing media-friendly protagonists. For instance, clubs may school successful players or athletes in behaviour towards media or allow for TV appearance. The German soccer club Mainz 05 (second division) permitted its popular coach Jürgen Klopp[28] to perform as an expert on TV evaluating the performances of players of the national German

28 In 2008 he was appointed as the new coach of Borussia Dortmund, which is the current leader of the German premier devision (February 2011). He still works for German television, though.

soccer team – a role in which he somewhat achieved star status. Additionally, sports associations might promote athletes with the 'right' geographical and national background or such with natural attractiveness for fans, etc. The best female racer in U.S. single-seater motor sports, the attractive Danica Patrick, is rumoured to be advantaged by series organisers. We do not know whether this is true, however, such a strategy would fit into this explanatory framework and be rational for series organisers[29]

- varying the distribution of sport events. German soccer clubs seek to adapt the number of matches played on every match day (Friday, Saturday, and Sunday) to increase attendance. One idea is to start Sunday matches earlier than 5 p.m. to make it easier for fans to attend away games. Currently fans may have problems to get home on the same day, being forced to stay overnight (depending on the distance of their hometown). As far as the Formula 1 is concerned, starting times of overseas races account for the time shift in order to attract a maximum of viewers in the most important European market.

Furthermore, clubs may try to alleviate negative attitudes of attendees towards arena advertisement and sponsors (negative externality from advertisers on attendees). One possibility could be the usage of screens and electronic perimeters for visualizing sweepstakes accomplished for attendees in breaks or before the beginning of a match. Thus, fans may get the impression that they can experience a benefit from added advertising space, even if this effect might be weak. Sports clubs and their associations could try to promote the dependency of media on broadcasting soccer matches (premium content). However, it might be doubtful whether this can actually be done. In general, approaches may be ef-

29 Going to the extremes, the combination of (media) customer-oriented rules and format as well as an accompanying influence on the results of sportive competition can explain the emergence of 'sports imitations' like Wrestling. However, since in most sports disciplines fans prefer – at least to some minimum extent – 'true' and 'fair' sports competition (the 'best' shall win), suppliers of professional sports events usually seek a balance between attracting new fans through a stronger participation of the customer group 'media' and preventing to annoy 'old' fans by introducing too much 'show'.

fective if clubs achieve to increase welfare by supplying attendees with a preference-conformal product, while, at the same time, equalizing the marginal willingness-to-pay of advertisers or TV channels with their marginal utility. The latter condition needs to be fulfilled or else efficiency-losses would appear.

All these issues, and many more, deserve an in-depth treatment and the framework of multisided markets theory represents a promising tool for such analyses.

4. Conclusion

Despite still being younger than a decade, the theory of multisided markets has offered numerous valuable insights for the analysis of non-ordinary industries in which a supplier serves two distinct customer groups that are indirectly interrelated by externalities. Examples include payment systems, matching agencies, commercial media, and software platforms. However, professional sports markets have largely been neglected so far in this kind of research although they possess the characteristics of multisided markets. We contribute to filling this gap by describing the platform elements of professional suppliers of sports events and outlining problems where an application of this theoretical framework is likely to provide valuable insights and to add to the existing knowledge. Among these problems are integrative pricing strategies of sports clubs towards such different customer groups like attendees, broadcasters, sponsors, etc., including their welfare and antitrust implications, design decisions of sports associations in order to promote positive feedback loops among the customer groups as well as strategies to reinforce positive externalities among customer groups and alleviate negative ones.

This paper can only outline some of the interesting and challenging fields that could be rewarding for introducing the theory of multisided markets into sports economics. We do not provide full-blown, in-depth analyses of the sketched problems and insights. However, we describe a new framework for research

that offers potentials to complement and deepen (not replacing) the existing literature in sports economics and management. It is the main goal of this conceptual paper to stimulate further research in the analysis of sports markets and business.

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