

Budzinski, Oliver; Satzer, Janina

Working Paper

Sports business and the theory of multisided markets

MAGKS Joint Discussion Paper Series in Economics, No. 2008,11

Provided in Cooperation with:

Faculty of Business Administration and Economics, University of Marburg

Suggested Citation: Budzinski, Oliver; Satzer, Janina (2008) : Sports business and the theory of multisided markets, MAGKS Joint Discussion Paper Series in Economics, No. 2008,11, Philipps-University Marburg, Faculty of Business Administration and Economics, Marburg

This Version is available at:

<https://hdl.handle.net/10419/30118>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

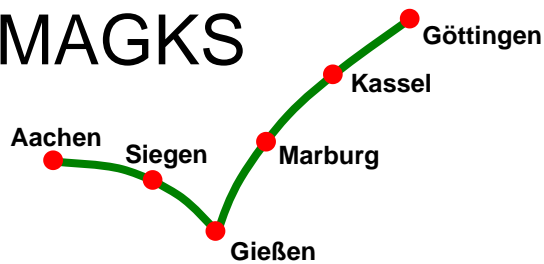
Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

MAGKS



**Joint Discussion Paper
Series in Economics**

by the Universities of
Aachen · Gießen · Göttingen
Kassel · Marburg · Siegen

ISSN 1867-3678

No. 11-2008

Oliver Budzinski & Janina Satzer

Sports Business and the Theory of Multisided Markets

Oliver Budzinski
Philipps-University Marburg
Faculty of Business Administration and Economics
Am Plan 2, D-35032 Marburg
Tel: ++49-6421-282 3080 Fax: ++49-6421-282 8974
Email: budzinski@wiwi.uni-marburg.de

Janina Satzer
Philipps-University Marburg
Faculty of Business Administration and Economics
Am Plan 2, D-35032 Marburg
Tel: ++49-6421-282 3913 Fax: ++49-6421-282 8974
Email: satzer@wiwi.uni-marburg.de

This paper can be downloaded from
http://www.uni-marburg.de/fb02/makro/forschung/magkspapers/index_html%28magks%29

Coordination: Bernd Hayo • Philipps University Marburg • Faculty of Business Administration &
Economics • Universitätsstr. 24, D-35032 Marburg
Tel: ++49-6421-2823091, Fax: ++49-6421-2823088 e-mail: hayo@wiwi.uni-marburg.de

Sports Business and the Theory of Multisided Markets

Oliver Budzinski & Janina Satzer⁺*

Abstract: Despite still being younger than a decade, the theory of multisided market 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.

JEL: L83, L82, L13, M21

Keywords: sports economics, two-sided markets, multisided platforms, professional sports business, pricing strategies, broadcasting rights

* Visiting Professor of Institutional and International Economics, MACIE – Marburg Center for Institutional Economics, Philipps-University of Marburg, Department of Economics & Management, Barfußertor 2, D-35037 Marburg, email: oliver.budzinski@staff.uni-marburg.de.

⁺ Research Assistant, Chair for Institutional and International Economics, Philipps-University of Marburg, Department of Economics & Management, Barfußertor 2, D-35037 Marburg, email: Satzer@wiwi.uni-marburg.de.

1. Introduction

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 group of costumers. In case of multiproduct firms, this implies that these firms act on more than one relevant markets, each of which can be analysed as a distinct market. However, there are some markets in which firms deal with distinct groups of costumers despite basically offering only one product. For instance, a magazine supplier deals with ‘reader’ costumers who buy the final magazine as well as with ‘advertiser’ costumers who buy advertisement space in the magazine. The analysis of such kinds of markets with the standard theory tools implied to construct distinctive markets for each costumer group, in the exemplary case a reader market and an advertiser market. Despite any important insights about the competitive interactions can be derived by doing such an analysis, one important aspect becomes neglected: the construction of two distinct markets (i.e. reader market and advertiser market) inherently neglects the interrelation of the two distinct costumer 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 exemplary case – two-sided markets, which basically mean to view the supplier and the – here: two – distinct customer groups to act on one and the same market¹, 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 not yet comprehensively entered the analysis of professional sports markets² although they also possess the typical characteristics of multisided markets. We attempt to fill this gap by outlining the potential 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 sports business (section 4). Finally, section 5 concludes.

¹ The name ‘two-sided’ market was originally chosen to characterize the two sides of demand (costumer 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), this 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 costumers groups (‘multisided’ markets), the term ‘platform’ markets is preferred by some. Yet, ‘two-sided’ or ‘multisided’ respectively seems to be the established terms, wherefore we will use them in the following.

² Exemptions include *Hartwich* (2007) and *Bae & Kwon* (2008).

2. The Theory of Multisided Markets

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; 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). One 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 delineatable) customer groups,
- which are indirectly connected by *externalities*, and
- these externalities cannot be sufficiently internalised (f.i. 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 2003; 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 & Gabszewicz 2006; Kaiser & Wright 2006; Kind et al. 2007; Dewenter & Haucap 2008). 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 market framework.

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 \uparrow \rightarrow b \uparrow). b \uparrow \rightarrow a \uparrow
Matching Agencies, like employment agencies and dating agencies (or travel agencies, etc.)	a. unemployed / male singles b. companies with vacancies / female singles	a \uparrow \rightarrow b \uparrow b \uparrow \rightarrow a \uparrow
Brokers, like estate agents (or: stock markets, auction houses, etc.)	a. estate owners wanting to sell b. potential buyers of estate	a \uparrow \rightarrow b \uparrow b \uparrow \rightarrow a \uparrow
Media Markets, like magazines (or newspapers, commercial TV, commercial radio, etc.)	a. readers b. advertisers	a \uparrow \rightarrow b \uparrow b \uparrow \rightarrow a \downarrow (?)
Software Platforms, like operating systems	a. application software developers b. users	a \uparrow \rightarrow b \uparrow b \uparrow \rightarrow a \uparrow
Video Games	a. game developers b. players	a \uparrow \rightarrow b \uparrow b \uparrow \rightarrow a \uparrow

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 and B) interacts with each other. If a supplier increases the price for A-customers, then demand from A-customers decreases (standard demand reaction assumed). However, due to the externality between the two customer groups, B-customers will also be affected. Assume that there is a positive externality, i.e. B-customers as a group benefit from the relative participation of A (i.e. quantity of A-demand). Thus, B-demand will decrease as a consequence of the decrease of A-demand. If the positive externality runs into both directions, then the decrease of B-demand decreases utility of A-customers wherefore a further decrease of A-demand as a consequence of the decrease of B-demand might come into play – and so forth (positive feedback loop; self-reinforcing development).

However, even if the first step – B-demand decreasing as a consequence of decreasing A-demand – exists, this does not necessarily imply that customer group A also benefits from customer group B. Let us assume a magazine that is partly financed through the price that readers pay and partly through advertising revenues. Group A might be the readers, group B the advertisers. If the magazine publisher increases the price for the magazine, the demand from readers will probably decrease. However, with fewer readers, the magazine loses

attractiveness for advertisers who want to reach as much ‘audience’ as possible. In other words, there is a positive externality from the ‘participation’ of the customer group readers (A) towards the benefit for the customer group advertisers (B). Yet, this must not necessarily be the same the other way around. More advertisement (= higher ‘participation’ from group B) might well make the magazine less attractive for costumers who feel distracted by the dominance of advertising. This would represent a negative externality from A towards B.

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

$$(1) \quad Q_A = D_A(P_A, Q_B)$$

$$(2) \quad Q_B = D_B(P_B, Q_A)$$

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

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

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

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

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

$$(5) \quad E_{Q_B, Q_A} = - \frac{\partial D_B}{\partial Q_A} \frac{Q_A}{Q_B}$$

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

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

- 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.

Let us illustrate this by looking at commercial media markets, for instance the markets for magazines or newspapers: if the supplier sets the price towards the customer groups readers below marginal costs, this c.p. increases number of readers. Therefore, advertising in this magazine becomes more attractive and the demand for advertisement space increases. As a consequence, the price for the customer group advertisers can be increased (auctioning of the

scarce advertisement space). Standard welfare analysis assuming ‘ordinary’ markets would yield

→ $P_{\text{READERS}} < MC$ → predatory pricing, and

→ $P_{\text{ADVERTISERS}} > MC$ → market power (exploitation of customers).

This can be even more drastic if one considers the market for commercial TV that is offered free-to-air and financed by revenues from advertising. Thus, the price towards the customer group ‘audience’ is zero (or sometimes even below zero if money is distributed among viewers like some radio stations do), whereas the price towards the customer group ‘advertisers’ must be set above marginal cost in order to be profitable. Once again, standard analysis concludes

→ $P_{\text{AUDIENCE}} < 0$ → predatory pricing, and

→ $P_{\text{ADVERTISERS}} > MC$ → market power.

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 audience / readers by ‘subsidisation’ in order to maximise revenue from advertisements might represent a procompetitive strategy because incentives exist to provide the audience/readers with a preference-conformal product (→ welfare increase) while, at the same time, the marginal willingness-to-pay of the advertisers equals their marginal utility (→ no loss in efficiency)! In summary, competition on two-sided markets differs from competition on ‘ordinary’ markets. Suppliers in multisided markets face complex interrelations between prices, quantities and costs. Up to date, 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*: suppliers in multisided markets attempt 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 commercial TV, a supplier (TV program) might conjecture that audience wants a comfortable and undisturbed access to the programmes and ‘unwanted’ commercials will interfere with these preferences. However, instead of reducing the ‘bad’ commercials (in order to attract more ‘participation’ from the customer group audience), the supplier experiences incentives to integrate commercials in a way so that the audience cannot escape them (f.i. by switching channels during commercial breaks) – and, ideally, does not get disturbed by them. One possibility is to integrate advertisement into the programme (product placement, surreptitious advertising) or to introduce sponsoring of special programmes (movie X is presented by company Y). In other words, the supplier might want to bundle or tie content and commercials in order to make them inseparable for consumption. Despite the

audience becomes harmed (decrease of utility) on one hand, it benefits on the other hand since the supplier can attract more advertisers and, thereby, improve the price-performance-relation of the programmes. As a consequence, bundling and tying strategies that are viewed to be harmful in ‘ordinary’ markets must be assessed differently in multisided markets.

A third set of implications refers to the *regulation of the externalities*. 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 commercial media this might involve efforts to improve the (positive) consumption reaction of audience/readers to commercials or to minimise the disruptive factor of commercials on audience/readers. However, it should be made very clear that it is not trivial to combine these incentives. In particular, every multisided industry experience specific externality structures. Thus, it is difficult to draw general conclusions. Instead, case-by-case analysis of the respective industries against this theoretical framework seems to be more fruitful – at least in the current status of the underlying concepts. So, we now want to demonstrate that professional sports markets fit into the framework of multisided markets.

3. Sports Markets as Multisided Markets

To illustrate the idea of multisided markets, consider a professional soccer club playing in the, for instance, German premier league. In sports economics, a long tradition of reasoning views professional sports clubs (like premier league soccer clubs) to resemble 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 like to view themselves; somewhat supported e.g. by *Madden 2008*). Notwithstanding this, it can still be assumed that their primary objective is to score victories. On 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*). For the purposes of the following discussion, however, it is not necessary to distinguish the dominating causality direction between ‘creating revenues’ and ‘winning’ (*Noll 2007: 410*).

Soccer clubs largely fund themselves through sponsoring, merchandizing, licensing television broadcasts, ticketing, and renting the stadium occasionally for purposes other than soccer.³ Thus it appears that a professional soccer-club acts as a supplier for several groups of customers: (1) soccer-fans buying tickets to watch a match live in the stadium (‘attendees’), (2) TV-channels buying broadcasting rights, (3) advertisers and sponsors buying advertisement space within the arena or ‘on the players’, (4) firms or other actors renting the stadium for other purposes than soccer matches, and eventually (5) fans who buy

³ Note that some of these areas of revenues are actually managed by sports associations on behalf of the individual clubs. We tend to neglect this in the following since it does not change our reasoning substantially.

merchandising-products offered by the clubs. The issue at point is whether the above-named customer groups qualify as distinct in terms of the underlying definition.

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 an experience. Their interest is to enjoy the match, the atmosphere of a live-event, and to be part of a common (homogeneous) fan-group.

The broadcasting TV channels again classify as a distinct customer-group of soccer clubs. We can distinguish Pay TV (financed directly by the viewers) from Free TV (financed by revenues from advertisements) as well as private TV channels from public ones (financed by tax revenues or special fees).⁴ Private Pay TV or Free TV channels can obviously be assumed to be profit-maximizing enterprises. This might be more difficult with public TV that usually serves some societal interests (education of the public, preservation of cultural identity, etc.).⁵ For the seasons 2006/07-2008/09 the German Soccer League (DFL)⁶ sold the licence for broadcasting matches live to the Pay-TV channel “Arena/Premiere”. The German public free TV station “ARD” acquired the authorization to broadcast a brief summary of all matches shortly after their end. Nevertheless, the profit-maximizing strategies of these two TV stations basically differ. Whereas “Arena/Premiere” is solely financed by subscription, at least half of the public TV channel “ARD”’s revenues are generated by advertisements. As far as soccer matches are concerned, broadcasting is (said to be) entirely financed by advertisements.⁷ 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.⁸

The profit maximizing customer group “advertisers and sponsors”, consisting of business companies from almost every industry, needs to maximize its media presence to increase the demand for their goods and services. To do so they have got several options; besides the usage of print media advertisement they can promote their enterprise on items that are visual via TV, like the players’ shirts and perimeter advertisement, or on items that are visual only on location, i.e. promotion that is placed at the outside or within the arena like billboards or acoustic adverts.⁹

Furthermore, soccer clubs can rent the stadium to companies for other purposes than soccer. If so, clubs diversify and actively take part in other branches like concert and event

⁴ 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)*.

⁵ 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).

⁶ The DFL is a profit-maximizing association of all 36 premier and second league soccer-clubs being in charge of centralized media marketing.

⁷ Obviously, there is scope for conflicts of interests. However, we do not want to discuss this issue more detailed.

⁸ 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*).

⁹ We will call advertisers that place advertisement in the arena/stadium as ‘arena advertisers’ in order to distinguish them from advertisers that place commercials on TV broadcasts.

management. Concert and event management companies try to find an appropriate location for every occasion; therefore, they will take considerations about infrastructure, maximum capacity and convenience into account and can be qualified as a distinct consumer group.

One could argue that fans who buy merchandizing products sold by their favourite club could be a potential additional consumer group. Furthermore, sports suppliers could benefit from more people practising this sports discipline in their spare time and, thus, buy the necessary discipline-related equipment.¹⁰ However, it seems doubtful whether this group qualifies as distinct since it seems plausible that fans who buy tickets are most likely the same who buy merchandizing products in order to demonstrate their affiliation to the club and a homogenous group of fans.¹¹

To meet the characteristics of a multisided market the customer groups of a soccer 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. To realize the optimal profit ratio a utility-maximizing soccer club has to attract audience (attendees), TV channels, advertisers, and tenants simultaneously. What kind of externalities a soccer club can expect to exist among each pair of customer groups?

(I) Attendees – arena advertisers

Advertisers prefer platforms that attract a high amount of attendees; the more fans watch a match in the stadium the wider the distribution of the advertisements is. This positive effect for arena advertisers can have a negative impact on the demand for tickets though. (An increase in) advertisement can lead to a reduction of attendees' utility if these develop disfavor while the intensity of promotion rises. Thus, it might be reasonable to assume a negative relationship between the amount of advertisement and the attendees' benefit.¹² A significant negative effect can also be ascertained at least for perimeter advertising, particularly with regard to electronic soccer boards (*Hartwich* 2006).¹³ If this is the case the demand for tickets will decrease which again will cause a negative feedback on the demand for advertisements and so forth (negative feedback loops).¹⁴ A club reducing ticket prices may

¹⁰ Think in particular about sports disciplines that require very specific equipment plus the existence of business interrelations between equipment producers and sports suppliers.

¹¹ Although we have to note that not all people who buy merchandizing products go to see matches live we consider these two consumer groups not to be clearly distinguished and delineated.

¹² Drawing on media economics, the general presumption is that audience and readers suffer from advertisement, 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). In sports markets, an additional element might be that sports fans tend to disfavor the commercialisation of the sport, symbolised by higher frequencies and a stronger presence of advertising.

¹³ 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.

¹⁴ Obviously, a market can also exhibit positive feedback loops if customers' benefit from attending a match rises due to advertisements. This would imply that the adverts contain useful information for attendees. One may doubt knowing that perimeter advertising is limited to naming the advertisers.

increase the number of attendees which in turn will make advertising in this stadium more attractive. Consequently the demand for advertisement space increases, so that the prices for the customer group “arena advertisers” can be increased, too. Put differently, clubs may subsidize the ticket prices (attendees) by the prices for advertisement (advertisers).

(II) Attendees – TV channels

Different externalities can be analysed in regard to the interrelationship of the customer groups attendees and TV channels. Attendees might view watching a soccer match on TV and attending the stadium to be substitutes. Thus, the existence of accessible and prompt broadcasting (for instance, live-broadcasting in Free TV) can decrease demand for tickets (negative externality from TV channels towards attendees). While this seems rather plausible for live-broadcasting, a negative externality is not unambiguous for time-delayed broadcasting since it might well benefit attendees as they can see specially entertaining sequences again and in slow motion, from different angles and so on. Programmes that summarize all games of a matchday by showing extracts probably produce a positive externality on attendees as they will generally be interested in not missing the best scenes from alternative matches. 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.* With summarizing programmes, this seems to be more complex.

The ‘participation’ of attendees produces 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 a 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.

(III) Attendees – tenants

Attendees could cause positive externalities for tenants 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. Additionally, one could even think of soccer fans being more willing to join an event taking place in the stadium they know and like due to familiarity reasons.¹⁵ Thus, bi-directional positive externalities between attendees and tenants can be identified – however, they might be rather weak or even insignificant.

(IV) TV channels – arena advertisers

Consumers of goods and services can be more widely reached by commercials than through any other medium (like print, internet etc.). Therefore, advertisers in the arena and sponsors of

¹⁵ Of course this argument works the other way around as well.

soccer teams will indirectly profit from clubs selling extensive broadcasting rights to TV channels (positive externality from enhanced broadcasting towards sponsors and arena advertisers). Sponsors will invest more if they know that their promotion will be seen on TV as this will enhance the degree of popularity and, hence, the probability to sell. 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 may increase their utility 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 advertisement in the arena might view this as a substitute for buying advertisement space on TV (placing commercials) and, thus, refrain from doing the latter. Thus, extensive advertisement in the arena, on tricot, etc. tends to reduce demand (and revenues) from advertisers for commercial TV (negative externality from arena advertisers/sponsors towards TV channels).

(V) TV channels – tenants

The underlying rationale is similar to that brought up for attendees and tenants; TV channels may cause positive externalities for tenants 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 might be rather weak and perhaps even insignificant.

(VI) Arena advertisers – tenants

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. On the other hand, advertisement may lead to a better infrastructure tenants would benefit from. The same reservation as in (V) holds.

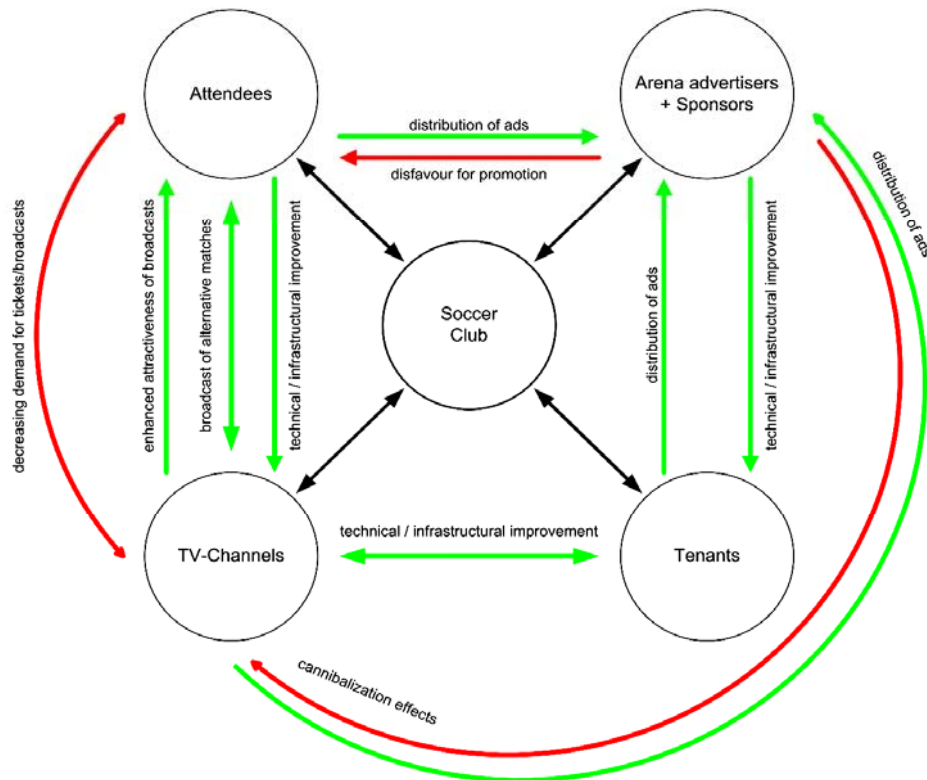


Figure 1: Externalities among different consumer groups of soccer clubs

From this exemplary discussion of a premier league professional soccer club, it can be seen that sports markets actually possess the characteristics of multisided markets. This assessment does not fundamentally change if one considers other professional sports like (US) baseball, football and basketball or tennis, golf as well as Formula One (premium motor sports). In the latter case, for instance, basically the same customer groups can be identified: audience at the race circuit buying tickets, TV channels buying broadcasting rights, circuit advertisers buying trackside advertisement space and sponsors buying on-car advertisement space as well as event management companies organizing e.g. open air rock concerts. However, Formula One differs from our soccer example in terms of the supplier structure. In the ordinary soccer league, it is a good proxy to model the club as the basic supplier as he (i) provides the team, (ii) owns or has rented the arena, and (iii) forms together with the other clubs of the league the relevant sports association. In contrast, in Formula One several supplier groups have to be distinguished (in addition to the distinct customer groups): (i) the teams (dominated by car manufacturers), (ii) the circuit owners, (iii) the sports association FIA, and (iv) the

commercial association FOA. None of the 2008 circuits is owned by a team or manufacturer. The FIA (Fédération Internationale de l'Automobile) is not an association of participants (teams/manufacturers), instead it consists of national motor sports clubs and associations. The FOA (Formula One Administration Ltd.) is a company owned by Bernie Ecclestone and private investors. FOA has bought the exclusive rights to market the product "Formula One World Championship" from FIA in a long-run contract. This, admittedly rather special, supply structure points towards a missing dimension in the multisided markets framework: while complex customer interactions are addressed, complex supplier interactions (not competitor interactions!) are not yet included. Notwithstanding this, applying the multisided markets framework offers interesting and valuable insights for the analysis of professional sports markets as we outline in the following section.

4. Some Implications for Sports Business and Regulation

The following section does not attempt to provide rigorous and full-blown analyses of the discussed issues. This would be subject to 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.¹⁶

4.1 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 the marginal costs or even a zero-price to subsidize one or several groups of consumers by other ones.

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 Euros total per annum although the competing Pay TV channel "Premiere" offered the much higher amount of 300 million Euros. At first glance, this might seem not 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 in Free-TV.

¹⁶ Accordingly, we waive comprehensive reviews of the existing (non-multisided market) literature on these matters.

“Premiere’s” 300 million Euros-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 Euros, 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 externalities 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 such a 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 easy 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; *Hartwich* 2007). 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 choose 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 Euros 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)¹⁷, or (iii) the externalities between TV channels and

¹⁷ 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

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 and European soccer championships that took place in the meantime. In particular, the soccer world championship in Germany in 2006 caused an unexpected push 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 fanship) as well as the cross-quantity elasticity (reduction of the positive externality). This 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. She 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.¹⁸ A sound economic foundation of such reasoning by referring to the theory of multisided market would fit into the ‘more economic approach’ that is currently promoted in European competition policy. Analysing the DFL-Sirius contract against the background of multisided market 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 of no competitive harm in regard to consumers.

money is said to be needed in order to be able to contract valuable players even in future (Manager-magazin, 18.7.08 ; Sportsillustrated, 24.8.08).

¹⁸ 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.

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 to 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 audience 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.

4.2 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 avoiding that TV viewers miss 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 within 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 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' famous coach Jürgen Klopp to perform as an expert on TV evaluating the performances of players of the national German 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.¹⁹
- varying the distribution of sport events. German soccer clubs seek to adapt the number of matches played on every matchday (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 the on same day, not being forced to stay over night (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. So fans may get the impression that they can experience a benefit from the addition of 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 effective 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.

¹⁹ 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 disattract 'old' fans by introducing too much 'show'.

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

5. Conclusion

Despite still being younger than a decade, the theory of multisided market 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. This is due to further research and it is the main goal of this paper to stimulate further research in the analysis of sports markets and business.

References

- Anderson, Simon P. & Gabszewicz, Jean J. (2006), *The Media and Advertising: A Tale of Two-Sided Markets*, in: *Handbook of the Economics of Art and Culture*, Vol. 1, Amsterdam: Elsevier, pp. 567-614.
- Armstrong, Mark (2006), *Competition in Two-Sided Markets*, in: *Rand Journal of Economics*, Vol. 37 (3), pp. 668-691.
- Armstrong, Mark (2007), *Two-Sided Markets: Economic Theory and Policy Implications*, in: Jay P. Choi (ed.), *Recent Developments in Antitrust: Theory and Evidence*, Cambridge Mass.: MIT Press, pp. 39-59.
- Bae, Sang Hoo & Kwon, Jiyong (2008), *Two-sided Network Effects and Competitive Balance in Professional Team Sports*, <http://ssrn.com/abstract=1094821>.
- Bundeskartellamt (2008), *Zentralvermarktung der Verwertungsrechte der Fußball Bundesliga ab dem 01. Juli 2009*, Bonn 2008-07-24,

http://www.bundeskartellamt.de/wDeutsch/download/pdf/080724_PK_Hintergrundpapier.pdf

- Caillaud, Bernard & Jullien, Bruno (2003), Chicken & Egg: Competition among Intermediation Service Providers, in: *Rand Journal of Economics*, Vol. 24 (2), pp. 309-328.
- Dewenter, Ralf & Haucap, Justus (2008), Wettbewerb als Aufgabe und Problem auf Medienmärkten: Fallstudien aus Sicht der Theorie der zweiseitigen Märkte, in: Dirk Wentzel (ed.), *Medienökonomik: Ordnungsökonomische Grundfragen und Gestaltungsmöglichkeiten*, Stuttgart: Lucius & Lucius, forthcoming.
- Evans, David S. (2003), The Antitrust Economics of Multi-Sided Platform Markets, in: *Yale Journal of Regulation*, Vol. 20 (2), pp. 325-382.
- Evans, David S. & Schmalensee, Richard (2007), The Industrial Organization of Markets with Two-Sided Platforms, in: *Competition Policy International*, Vol. 3 (1), pp. 151-179.
- Fort, Rodney and Quirk, James (2004), Owner Objectives and Competitive Balance, in: *Journal of Sports Economics*, Vol. 5 (1), pp. 20-32.
- Hartwich, Tobias (2007), It's Coming Home: die Fußball-Bundesliga und zweiseitige Märkte, in: *Medienwirtschaft*, Vol. 4 (1), pp. 15-25.
- Hoehn, T. & Szymanski, Stefan (1999), The Americanization of European Football, in: *Economic Policy*, Vol. 14 (28), pp. 203-240.
- Kaiser, Ulrich & Wright, Julian (2006), Price Structure in Two-Sided Markets: Evidence from the Magazine Industry, in: *International Journal of Industrial Organization*, Vol. 24 (1), pp. 1-28.
- Kind, Hans Jarle, Nilssen, Tore & Sörgard, Lars (2007), Competition for Viewers and Advertisers in a TV Oligopoly, in: *Journal of Media Economics*, Vol. 20 (3), pp. 211-233.
- Leeds, Michael A. & von Allmen, Peter (2008), *The Economics of Sports*, 3rd Edition, Boston: Pearson.
- Madden, Paul (2008), Price, Quality and Welfare Consequences of Alternative Club Objectives in a Professional Sports League, *Manchester Economics Discussion Paper Series EDP 08-02*.
- Manager-magazin (18.7.2008), *Premiere – Zurück im Spiel*.
- Noll, Roger G. (2007), Broadcasting and Team Sports, in: *Scottish Journal of Political Economy*, Vol. 54 (3), pp. 400-421.

- Rochet, Jean-Charles & Tirole, Jean (2002), Cooperation among Competitors: The Economics of Payment Card Associations, in: *Rand Journal of Economics*, Vol. 33 (4), pp. 549-570.
- Rochet, Jean-Charles & Tirole, Jean (2003), Platform Competition in Two-Sided Markets, in: *Journal of the European Economic Association*, Vol. 1 (4), pp. 990-1029.
- Rochet, Jean-Charles & Tirole, Jean (2006), Two-Sided Markets : A Progress Report, in: *Rand Journal of Economics*, Vol. 37 (3), pp. 645-667.
- Roson, Roberto (2005), Two-Sided Markets: A Tentative Survey, in: *Review of Network Economics*, Vol. 4 (2), pp. 142-160.
- Rottenberg Simon (1956), The Baseball Player's Labor Market, in: *Journal of Political Economy*, Vol. 64 (3), pp. 242-258.
- Schmalensee, Richard (2002), Payment Systems and Interchange Fees, in: *Journal of Industrial Economics*, Vol. 50 (2), pp. 103-122.
- Sloane, Peter J. (2006), Rottenberg and the Economics of Sport after 50 Years: an Evaluation, IZA DP No. 2175.
- Sportsillustrated (24.8.2008), Antitrust stops \$4.7B TV deal for Bundesliga.
- Welt am Sonntag (27.11. 2005), Warum die boomende Poker-Industrie alle Asse in der Hand halt.
- Zimbalist, Andrew S. (2002), Competitive Balance in Sports Leagues, in: *Journal of Sports Economics*, Vol. 3 (2), pp. 111-121.