

The importance of market size in the consumer service professional football: the Belgian case

Trudo Dejonghe[†]

August 2008

Abstract

The problem with Belgian football competition is that in the long run, and as reality shows us in the short term, the contemporary situation will lead to market failures and the elimination of some of the clubs. The solution proposed in this paper is the creation of a new professional competition with fewer teams combined with territorial exclusivity in a centre with a potential number of consumers that reach a certain absolute or relative threshold.

JEL Classification Codes: L83

Keywords: sports economics, soccer

Paper presented at the 6th Annual IASE Conference in Athens, Greece, May 2004

[†]Lessius Hogeschool (KULeuven) Department Business Science, Korte Nieuwstraat 33, 2000 Antwerpen, Belgium, Trudo.dejonghe@lessius.eu

The importance of market size in the consumer service professional football: the Belgian case

Trudo Dejonghe
Department Economy, Lessius Hogeschool Antwerpen,
Korte Nieuwstraat 33 2000 Antwerpen,
trudo.dejonghe.pandora.be; trudo.dejonghe@lessius-ho.be

1. The changing environment of professional football

In Europe, prior to the 1990s, the objective of the (professional) football club was to provide entertainment by achieving playing success while remaining solvent and not to maximise profit. Sloane(1971) indicated that profit-making clubs in Europe has been the exception and not the rule. Chairmen, directors and patronages with a controlling function in the football clubs first reached success in other business fields. Their motives to invest in sport were more a desire for prestige, power or sporting enthusiasm and can be seen as a form of philanthropy. They get the best seats and a chance to mix with people in similar positions as themselves. Profit seems unlikely to be a motivation factor. The pursuit of playing success is the main objective and the clubs can be defined as a win (utility) maximisation oriented subject to some financial constraints. The changing structure of European professional football made that most of the European top clubs no longer have the structure of the SSSL model. The rising impact of television and media companies and the emerging interest of multinationals corporations on professional football gave rise to a professional management approach, but did not bring financial stability. Another change was the use of the ability of the new investors to mobilize additional funding for further growth. According to Andreff & Staudohar(2002:31-33) the new owners implemented forms of vertical integration in the industry and created synergisms as a result of the interaction between business and sport. The result is an evolution from the SSSL model to the more global oriented *Media-Corporations-Merchandising-Markets* or MCCM-model.

2. The economic geographical dimension of professional football

Professional football has been transformed to a person-related immaterial consumer-oriented service with a short-term utility and an economic function. (Dejonghe, 2001: 289-293). The consequence is that a "professional football club" can be described as a central place function with a high threshold, a minimum absolute or real number of potential consumers. This definition implies that only densely populated locations combined with a rate of centrality can sustain a professional club. This transition implies that clubs in countries and cities with a small population have a competitive disadvantage. Market orientation, as a main causation in the extent of an economic product, leads to a situation of cumulative cycles. High attendance leads to more income from sponsors and media, that can be invested in players which in turn leads to better results and higher attendance,... The long-term success of professional football can be seen as an endogenous demand-oriented growth model based on Myrdalls' cumulative causation process.

Figure 1: The endogenous growth model (Dejonghe 2001:301)

These tendencies imply that clubs should be run as a business with a future policy perspective in a free market environment. They have to transform their "service" to maximise the attractiveness, their total economic value. The economic objective is that total gate receipts, income from advertising, commercial inflow, television and other media earnings have to be maximised for the economic product "the league. In Belgium where there were no major changes in the governance structure of football in the 1990's, the SSSL-model still dominates the league.

The market of a professional football club and its league has to be located and defined in the tertiary sector. The clubs can be seen as heterogeneous, which refers to the potential product differentiation between the clubs with their individual club-specific characteristics and the necessity of a long-term budget to sustain the club results in the creation of a monopolistic competitive market structure, which is co-ordinated by one internationally recognised national football association. The number of clubs playing in the first league is determined by the central bureaucratic association and is not connected to the demand in the national market. The endogenous limit of the number of football clubs in the first division and the necessity of co-operation result in the creation of a producer's cartel. The purpose of such a cartel is the striving for profit-maximisation by limiting mutual competition combined with supply optimisation. The substitution of the term firm by professional football club and total costs by budget is a rather good description of a top-competition. Dejonghe(2001:p.296) described the market of the product "professional football league" as a coalition in a near-cartel competition of heterogeneous interdependent oligopolic football clubs, which is organised by the international recognised football association.

3. The consequences for Belgian football competition

The question that can be asked is "Is there a need for a professional football league in Belgium?" If the answer to this question is affirmative then an economic analysis is necessary. Because of the absence of transparency in the bookkeeping system the sources of revenue for the Belgium competition are not known. The situation today in Belgium is:

- A average attendances of 9,500 spectators in the last few years¹
- 50% of the attendances attend 4 clubs
- Broadcasting rights of €15 million for season 2003-2004
- Lack of international impact and the associated income loss from demand oriented broadcasting rights
- Total budget of the first division (18 teams) is only €133 million²³
- No barriers between professional and amateur football
- Teams on the edge of bankruptcy and heavy debts

The ownership structure of football clubs did change in the nineties. The Belgian league became a secondary competition and a "stepping stone" for players from outside the EU. The minimum wages in Belgium for non-EU players in 1995 was about €25,000. De Decker and Wille, two senators of the Flemish Liberal Party VLD⁴ were the founding fathers of the proposal that raised the minimum wage to €60,424. The existence of the severe restrictions for non-EU players in the UK and the Netherlands⁵ made Belgian clubs interesting for cooperation. The increasing impact of the economic principles on football results, as seen above, in a classification of the

¹For the season 2002-2003: Germany (33,794), Italy(25,474), England(35,464), Spain(28,593), France(19,757) and the Netherlands(16,255). Belgium has an attendance of 9 people per every 1000 inhabitants a higher relative rate than Germany(4.5), England(6.5), France(3.5) and Italy (4.8)

² 2000-2001 season : England €1.5 billion, Italy €850 million, Spain and Germany €700 million (Dejonghe, 2001: 414)

³ This means that the broadcasting rights are 11.2%(€15 million) of the total budget

⁴ The reason for their intervention was the abuse of mostly young African players by their "agents". The commission Internal Affairs decided that a raise of the minimum salary for non-EU players could be used as a wapen against these practices. (Senaat, Persmededeling, 16 juli 2002)

⁵ In the Netherlands was the minimum salary for a 18-19 year old non-EU player 75% of the average salary or €18,246.25 and for 20 years and older 150% or €36,492.50. The Department of Education and Employment(DEE) controls the "quality" of the non-EU players. They demand some proof of the skills of the players(playing in 75% of the official competitive games of the national squad, country has to be in the FIFA top 50,...) to deliver a working permit or visa.(Dejonghe, 2004b:247-249)

clubs in (inter)national and local ones, where for a survival on the long term the economic spatial potentials have to be analysed. The central topic or the necessary minimal conditions are in this case the presence of potential fans and the willingness of the local firms, industry and government to invest in the club and its infrastructure. This concept results in a perception where professional football and the urban hierarchical and spatial structure are interdependent. Belgium is too small a market to support eighteen pro teams. 13 of these 18 teams play in the Flemish market. The other five teams draw their fans from the 4 million French-speaking Belgians. Whenever the future of Belgian football is discussed, two solutions are always brought up:

1. decrease the number of clubs to 16, 14 or even 12
2. make an BENE-league, being an international league with the Netherlands.⁶

The problem being the TV revenues, one can easily calculate how the team revenues would benefit from a bigger TV contract. Decreasing the number of clubs could eventually double the TV revenues for the big market teams, and especially (SC Anderlecht) Brussels (1.6 million euros instead of 0.8 million) would benefit, but would hardly influence the total revenue the way the Champions League does. For the Belgian clubs participating in the CL is crucial and can represent up to 40 % of the yearly revenues. In this contribution we will focus us upon an exogenous decrease to 14 clubs.

4. The competition in space

“ A good location provides the firm with strategic advantages that competition may find difficult to overcome. While other marketing mix elements may be easily changed in response to a changing environment, locations represent long-term investment that can be changed only at a considerable cost.” (Ghosh & Craig, 1983: p.56)

4.1. The location-allocation model

The Hotelling and Lösch maxim are examples of economic geographical location forms of two competitive suppliers in a uniform market area. Lösch' classical locational equilibrium model assumed a market with rational consumers and homogeneous suppliers, operating in the simplest possible uniform spatial context⁷. Hotelling (1929), on the other hand analysed the location patterns of a linear duopolistic market for a homogeneous product with no price-competition in an area with a spatially uniform distributed population. The result was that the location of the two suppliers would be next to each other in the centre of the spatial market otherwise the market would evolve to a Löschian equilibrium. The long-term survival of more than one supplier is only possible if the total demand is sufficient to support both suppliers.

The location-allocation models, where the location of several competitive facilities in a geographical market is analysed, are extensions of classical equilibrium models, and can be used to locate the first division football clubs in an area. The models determine the location and the spatial interdependence of several competitive facilities in a bounded geographical market. In other words, they detect simultaneous localisation of several suppliers combined with the allocation of the potential consumers. Location-allocation refers to two vital basic assumptions necessary in location decisions:

- the optimal location of the supplier or service
- the allocation to the respective suppliers or services of the potential consumers with their specific consumer behaviour and mobility constraints

⁶ Anderlecht in Belgium en PSV in the Netherlands supported this until PSV dropped the idea pressured by Ajax and Feyenoord.

⁷ Lösch(1936) argued that firms had to establish themselves not in the location with the minimum cost or maximum turnover but in the place where profit maximisation occurs. The demand for a product is a distance-decay function. The distance where the demand is equal to 0, the Christaller's range, is after rotation of the distance-decay function around the Q-axis, a circle that will be transformed into a hexagon, by the presence of spatial competition. The volume or demand cone of that market is the sum of the potential consumers in that specific area

A number of important questions, which need to be solved in location models, are: (Daskin, 1995, p.3)

- How many facilities should be planned?
- Where should each facility be located?
- How large should each facility be?
- How should the demand for the facilities' services be allocated to the facilities?

The number and size of facilities to be located is often a function of the service-cost trade-offs. In the public sector, with a non-monetary and social utility maximisation principle, the aim is to maximize coverage of the area. In these models the demand is, just like in the models of Lösch and Hotelling, often assigned to the nearest facility. The main objectives of location-allocation models are the simultaneous and optimal location, considering: (Dejonghe, 2001: p.424)

- The company objectives (profit maximisation, utility maximisation,...)
- Consumer characteristics (market potential, income, profile,...)
- Distance and regional accessibility (public transport, highways, traffic congestion, parking facilities,...)
- Competitive environment (competitors, spatial interaction,...)

The importance of location strategy is very significant. According to Daskin (1995), the success or failure of both private and public sector facilities depends in part on the locations chosen for the facilities. The combination of spatial location and optimising the demand is known as the covering problem in the location-allocation models. (Church et al., 1974; 1979; Thomas, 1993; Daskin, 1995; Daskin et al., 1999; Golledge et al., 1997) The objective of these models is to identify the locations that provide potential consumers with coverage within a specified distance or time constraint. One of the important characteristics of the covering models of homogeneous services is the existence of a lack of competition. The purpose of the model is to find those locations that will be successful in the long run. The long-term equilibrium is an interdependence matrix of potential locations searching for a combination that covers the market in an optimal mode. The covering models have to maximise the utility (public sector) or the profit (private sector) of the potentials of the market and to optimise the location of the facilities in the economic and geographical space.

One of the main problems of the set of covering models is that the number of facilities that are necessary to cover the total number of potential consumers exceed the number that can, for budgetary reasons, be built. This problem resulted in the creation of some relaxation in the models. This relaxation of the purposes can be divided in:

- relaxation of the total coverage, a maximum covering problem used in the private sector
- relaxation of the coverage distance, a mini-max or centre problem used in the public sector

4.2 Professional football: a modified maximum covering model

Professional football is typified as a market-oriented service, which means that the location-allocation problem can be analysed as a modified maximum covering location problem of the private sector. This means that a relaxation or modification of the total coverage is necessary to ensure that every club is profitable. The relaxation in these models is that not ALL-potential consumers have to be covered but as many as possible in terms of not jeopardising the economic profitability or cost-effectiveness of the facilities. The basic objective of this relaxation is to introduce or consider a fixed number of facilities, which are to be located in service areas combined with maximising the demands covered. The used modified maximum covering first implies the presence of a status quo situation with 18 clubs. In a second stage an exogenous defined number, in this case 14 heterogeneous clubs, is located in a potential Hotelling maxim in the most densely populated urban centre or in Lösch maxim in the other centre. This approach leads to the results that, in contrast with the deductive location-allocation models, consumers from the same location do not necessarily prefer the nearest service. The consumer

is not an “optimiser” but a “satisfier”, with personal motives, preferences, and behaviour. They locate subjective quality differences and characteristics and make an individual classification of the different clubs. This subjective approach and the introduction of time distance assumes that the “top football club” has to sell its product to the market. The opening up of an area and the attraction of other clubs lead to the creation of spatial competition and the existence of unequal service areas. The heterogeneity of the clubs is projected in their differences in local consumption and impact on the region, the centrality, and has an influence on the market and/or the service area. These subjective markets will be used as the basis for the location-allocation model.

4.3. The data

The empirical model with its heterogeneity relaxation is based on the 45,791 season ticket-holders of the different clubs in the first division for the season 1997-98 in Belgium and the data of the promoted clubs in the other seasons. The data have been corrected with the additional information given by the 290.252 fancards⁸. These data are in their own way a reflection of the subjective cultural-historical topophilia or place pride related to each club. The changes caused by the promotion and the relegation for the seasons 1998-99, 1999-2000, 2000-01 and 2001-02 are placed in the model. The total number of clubs that have played in the first division in that period was 23.

Figure 2 The location of the 23 teams in Belgium

The season ticket-holders holders are the consumers through which the consumption of the service “top-football” is assured, they can be considered as the “loyal” or “hard-core”-supporters. The nominal number of season ticket-holders is not a reflection of the real consumption of the product. The nominal values have to be corrected to a relative value that indicates the real attendance. Otherwise, a club with a relatively high number of season ticket-holders and a relatively minor number of floating attendances should have a larger potential market than a club with not as many season ticket-holders but a large potential market of floating attendance. The correction is based on the real number of attendants who support the home teams. The Belgian Football Association (KBVB) provided these latest data. More formally,

$$\frac{S_j^n W_j^n}{S_t^n W_t^n} \times 100 = S_j^c$$

S_j^n = the nominal number of season ticket-holders for club j

S_t^n = the sum of the nominal number of season ticket-holders for all clubs in a season

W_j^n = the nominal number of home attendances for club j

W_t^n = the sum of the nominal number of home attendances for all clubs in one season

S_j^c = the corrected number of season ticket-holders for club j

The indexes

The empirical determination of the markets and service areas implied the formulation of a model through which the 589 Belgian communities can possibly be assigned to one or more clubs. To do so, a reference-index is

⁸ The football fan in Belgium has to buy a fancard of a club to attend the game. Persons with a past of hooliganism cannot buy such a card so that they are kept out of the stadiums. The Profliga has the data of all these fancards.

introduced to analyse the coverage of these communities. The **endogenous reference-index, Ri** is the average corrected number of season ticketholders for every 10,000 inhabitants. More formally,

$$\frac{S_t^c}{B_t} \times 10,000 = R_i$$

$$S_t^c = S_t^n$$

B_t = total population of the total market, in this case Belgium⁹.

R_i = endogenous reference-index

The empirical determination of the service area and market of the clubs implies the creation of a model that should make it possible to assign the communities to one of the 18 clubs. The model is based on the **community consumption index, Ci**, the **club specific consumption index, Cij** and the **club specific penetration index Pij** of “professional football” in those communities.

The **community consumption index, Ci** measures the rate of consumption of the service professional football in the communities, and is calculated as follows:

$$C_i = \frac{\sum S_{ij}^c}{B_i} \times 10,000$$

C_i = local consumption index in location i

S_{ij}^c = corrected number of season ticketholders of club j in location i

B_i = total population in location i¹⁰

The **club specific consumption index, Cij** is:

$$C_{ij} = \frac{S_{ij}^c}{B_i} \times 10,000$$

The club specific penetration index, Pij measures the relative orientation of a community to one or more clubs. More formally:

$$P_{ij} = \frac{S_{ij}^c}{\sum S_{ij}^c} \times 10,000$$

An important parameter is the **local consumption index Ljj**. This is the rate of consumption of professional football in the centre where the club is located. A high rate means a strong relative attachment of the inhabitants but can also be an indicator of local saturation. This means that a growth of local consumption is not the potential solution for attracting more people. The only possible growth has to be a rise in centrality or with other words attracting attendances from outside the centre.

The **local consumption index, Ljj** is:

⁹ The total potential consumers, the total population of Belgium, was in the year 2000 10,163,910 (NIS)

¹⁰ The number of demand nodes i taken is the 589 communities after the merger of 1977¹⁰. The population of these communities theoretically located in the centre was taken as the number of potential consumers

$$L_{jj} = \frac{S_{jj}^c}{B_j} \times 10,000$$

S_{jj}^c = corrected number of season ticketholders of club j in location j, the location of the club

B_j = total population in location j, the location of club j

The measurement of the market

The determination of the markets implies the creation of a classification for the allocation of the communities and their potential consumers. This allocation is translated in an allocation rate A_{ij} based on a combination C_{ij} and P_{ij} in the 589 communities in Belgium. The minimal rate of 10 for P_{ij} is used to eliminate the sporadic consumer from the allocation model.

P_{ij} divides the total market in:

- monopoly area: the area dominated by one club
- monopolistic competition area: the spatial competition is strong but one club still has more than 50% market share
- rest area: the area with a low rate of number of potential attendance for a club
- non-covered area

The level of C_{ij} results, as shown in the model, in a further subdivision in an a, b or c. This is an indication for the strength of the penetration. The subdivision b or c indicates that a “new club” has the possibility of spatial competition or that the existing club(s) still has the potential to gain attendance from this area if they improve the quality of their services. The Ab and Ac areas are non-saturated monopolistic areas and indicate the direction of growth potential for a club.

The monopolistic competition area is the potential spatial growth zone. These areas can, depending on the quality of the services, be transformed in a monopoly or rest/non covered area.

Summarising these findings the following allocation model is used:

Model Dejonghe

4.3. The results

The model locates the communities in one or several areas of the clubs and it indicates the non-covered areas in Belgium. The potential consumers for each area and each club is the sum of A_{ij} . The non-covered population is therefore the sum of the population of the non-covered areas and the relative parts of the B_i that are not assigned to the monopolic competition and rest areas.

Table 1: The A-B-C zones of the 23 clubs

The results for the 23 heterogeneous clubs in the first division for the 1997/98 to 2001/02 seasons are shown in table 2. The combination of spatial competition, cultural (language) barriers, country-province borders, time-distance, inertia and tradition can be put forward as an explanation for the contemporary structure and impact of

the clubs. This empirical outcome shows that the total coverage equals 7,364,354 or 72.5% of the Belgian population and 37.4% of the population belongs to the monopolistic area of a club.

An important parameter is the local consumption index L_{jj} . A high rate means a strong relative attachment of the inhabitants but can also be an indicator of local saturation. The only possible growth has to be a rise in centrality, this means attracting attendances from outside the centre.

Table 2: The local consumption indexes

The combination of the market and L_{jj} make it possible to divide the heterogeneous clubs in some more homogeneous subgroups.

Table 3: The more homogeneous subgroups

Saey & Lietaer(1980) determined that the theoretical range of a regional service area in Flanders or the accessibility class was set to 15km. According to the “traffic principle” 15km was the regional impact zone of a regional centre. A football club playing in the first division can be seen as a hierarchical marginal good that is, because of the exogenous limit of 18 clubs, an indicator of an urban hierarchical level¹¹. The combination of the number of first division clubs, the Belgian urban hierarchical centre and a professional football club as a hierarchical marginal good lead us to a theoretical range of a regional club of 15km.

- The national clubs are monoliths and an obstacle for the extension of other clubs in the nearby region. Their real range extends to a large degree the threshold of “professional football” in Belgium. The service area exceeds the theoretical 15km. They dominate their region and determine endogenously their spatial market zone. FC Brugge is located in a regional city and can be seen as a functional substitution of Gent which has only a regional impact. These clubs have a low L_{jj} so that even today a potential endogenous growth of attendances is possible.
- The result for the “regional” clubs in regional and major cities shows a spatial monopolistic Lössch maxim for SC Charleroi and RC Genk. The situation in E.Aalst shows the existence of spatial competition with AA Gent and SC Anderlecht/Brussel. KV Mechelen has a spatial competition with Lier and the monolith Anderlecht and to a lesser degree with GBAntwerp, FC Antwerp and VC Westerlo. KV Oostende has strong spatial competition for its service area and market with FC Brugge. The club relegated after one year(1998/99) back to the second division. KV Kortrijk relegated also after one year(1998/99) and now plays in the third division. AA La Louvière promoted after an absence of 21 years to the first division in 2000 and has a minor service area. AA Gent and SC Charleroi have a low L_{jj} so when the attendances can rise substantially in periods that the clubs will be successful.
- The “small” clubs in the small cities which have, as seen in the values of their B and C zones, a limited centrality depend for a great part on local consumption. The lack of centrality is combined with the psychological barrier consisting of a refusal of descending in the urban hierarchy. To illustrate, the population of the regional centre Sint-Niklaas is not prepared to consume the service “professional football” offered by nearby small cities Beveren and Lokeren.(Dejonghe, 2001:442-448) Harelbeke is part of the agglomeration Kortrijk and Westerlo, is in the classification of Van Der Haegen et al.(1982) a “main village”. The club has a very high relative consumption in the local community, but lacks centrality and a refusal to descend in the urban hierarchy. The combination of these characteristics results in a small number of potential consumers and indicates that the attendances are at their

¹¹ The urban centres in Belgium are, according to their centrality, classified in a hierarchical urban system. There is one urban centre in level 0, the capital city, 3 in level 1, the major cities and 17 centres in level 2, the regional cities. (Van Der Haeghen et al., 1982: p.281)

maximum. The average attendances reach a maximum of 8,000 – 10,000 in very successful periods but drop to 2,000-3,000 in less successful periods.

- The local clubs in major cities have a very low Ljj and probably an enormous growth potential. RWDMolenbeek is located in Brussel in a theoretical Hottelling maxim with SC Anderlecht. This monolith transformed Brussel into a Lösch maxim and a second club in Brussel is thereby no option. The Antwerp situation shows a Hotelling maxim of two clubs which are both not using the economic potentials of the city .

4.4. The empirical allocation-location of 14 clubs

The transformation to 14 clubs

The restructuring of the first division to 14 clubs implies the elimination, relocation or merging of several clubs and the creation of totally new clubs in selected locations. The method that was used to create “new” clubs in certain regional centres was to give the potential club the characteristics of the different “regional clubs in regional cities”. The result was a minimum and a maximum potential market taking into account the potential spatial competition of the existing clubs. The spatial markets and the number of potential consumers as a result of a theoretical merger of two or more clubs was determined by and deducted from the data of the individual clubs. The result is shown in table 4 and figure 3.

Table 4: The empirical first division with 14

The table shows us that despite a reduction by 4 clubs:

- the coverage increased to 77.9% of the total population
- an expansion of the monopolistic area to 51.0% of the total population is seen
- an individual consumer potential that rose to at least 288,916 combined with a high Ljj for the three clubs with the smallest market.
- The elimination of E Aalst, a club located in a regional city on the highway E40, a corridor for the monoliths Anderlecht and Brugge.
- The potential new location in the regional city Leuven (between Brussel and Liège) has a monopolistic zone of 123,748 and a B and C zone of 59,686-95,498 was not selected. Other potential locations such as the regional city and capital of Walloon Namur (255.764) and the regional city Verviers(205,524) were not selected.
- Sint-Truiden is a well-equipped small town of level 3 with a strong polarisation in the urban hierarchy. Van Hecke(1997:106) determined a service area of 425km², a zone that is bigger than those of the regional cities Oostende(361km²), Aalst(296km²), Kortrijk(284km²), St Niklaas(258km²) and Mechelen(238km²). The club is located in a monopolistic Lösch maxim with a high centrality in the 15km zone. The club can be seen as the historical regional relocation or functional substitution of Leuven.

Figure 3: The empirical rationalised first division with 14 clubs.

5. Confrontation with reality

The academic study started with the data of 1997/98 and the first results were published in 2001 and created a storm of protest in the football world. Today, June 2003, we can confront the results of our research with the existing situation. RWDMolenbeek, RC Harelbeke, and SK Lommel, three clubs without any future in the model, claimed bankruptcy and were expelled from the football competition. KV Kortrijk, according the model had to merge with Harelbeke and the second division club Waregem, and E Aalst, a club that on empirical based data had no future in the first division, went bankrupt and was relegated to the third division. KV Mechelen, which according the model had to merge with Lierse, went bankrupt and will be placed in the third division in 2003-04. Clubs as SK Lierse, GB Antwerpen, La Louvière, SC Charleroi and the current second divisionclub V. Geel have because of their debts to Social Security, taxes and others, every year problems with their licence. The potential revenues from transferring players dried up because of the implosion of the Belgian and European football market. This result shows us that a theoretical model based on empirical data can be of some use to the real world but in the short term subjective arguments can be used to postpone the reality. It remains to been seen if a BENE-league would draw bigger crowds, more sponsors and better TV revenues, especially since the top teams in the Netherlands can negotiate their own TV rights.

Modest solidarity still existing among the 18 first division clubs in Belgiuù is under pressure. On the one hand, the two top teams, Bruges and Anderlecht are anxious to keep up with Europe. On the other hand they need their own Mickey Mouse league to qualify for the European Champions League. Anderlecht is on the verge of becoming a G14 member. Once a permanent European competition stage created, the major Belgian clubs are bound to break away, leaving the others behind.¹²

These facts show that in an economic environment a restructuring of the Belgian professional football league is necessary for some reasons:

- To enter competition with other European countries
- The introduction of the licence system by the Belgian Football Association in 2000-01 and in the near future(2004-05) by the UEFA, because clubs would ,o longer be allowed to have debts to the social security system, inland revenue, players,...
- To stop the gradually increasing number of bankruptcies since the introduction of the licence system

but historical reasons and conservatism make a transition very difficult

6. Conclusion

The divergence between the American profit maximisation leagues and the historically based utility maximisation in Europe was accelerated through the Bosman Case. The necessity of revenues from broadcasting, merchandising and sponsoring resulted in a strong commercialisation of professional football. Professional football was transformed into a consumer-oriented service that could be linked to an endogenous demand-oriented growth model. This transformation showed that the factor “market” became very important and had economic consequences on the Belgian professional football competition. The introduction of professional football based on economic principles resulted in a decline of Belgian football. The Belgian competition reached a relative maximum in attendances and the market is too small to compete with other European competitions. The Belgian league has too many clubs in the first division and many of them have great financial problems and a very small market. The restructuring of this market of heterogeneous clubs can be seen as an allocation-location problem. The solution of an allocation-location problem in an existing market has to take into account the historical and cultural situation. The transformation of football from a utility maximising to a more profit maximising consumers-oriented service implies the creation of a model based on empirical data. Tabula rasa is not an option because of the heterogeneous characteristics of the different football clubs. This means that a theoretical maximum covering solution can be used as a guide for the restructuring of an existing spatial distribution.

¹² Interview Hans Vandeweghe- Mr. Kurth (G14), February 2004

The problem with Belgian football competition is that in the long run, and as reality shows us in the short term, the contemporary situation will lead to market failures and the elimination of some of the clubs. The solution proposed in this paper is the creation of a new professional competition with fewer teams combined with territorial exclusivity in a centre with a potential number of consumers that reach a certain absolute or relative threshold. The empirical allocation-location model combine the maximising of the total coverage and the individual market of the clubs and accounts for the existing situation. The result is the creation of a first division with 14 clubs combined with a larger coverage of the population in Belgium. The 14 allocated and located clubs have a greater coverage and monopolistic area than the 23 existing clubs. The transformation, based on empirical data, implies a merging of several clubs, sometimes combined with relocation or in the case of E. Aalst, RWDMolenbeek, SK Lommel and KV Oostende the elimination of the existing club in the professional league.

- ANDREFF W. & STAUDOHAR P.(2002) *European and US sports business models*, in Barros C., Ibrahim M. & Szymanski S.(ed) *Transatlantic sport: The comparative economics of North American and European sports*, Cheltenham, Edward Elgar, p.23-49
- BALE J. (1988) The place of "place" in cultural studies of sport, *Progress in Human geography*,12,4, p.507-524
- CHURCH R. & MEADOWS M. (1979) Location modelling utilising maximum service criteria, *Geographical Analysis*,11,1, p.358-379
- CHURCH R. & ReVELLE C. (1974) The maximal covering location problem, *The Regional Science Association Papers*,32, p.101-108
- DASKIN M. (1995) *Network and discrete location models, algorithms and applications*, New York, Wiley
- DASKIN M. & OWEN S. (1999) 2 new location covering problems: the partial p-centre problem and the partial set covering problem, *Geographical Analysis*,31,3, p.217-235
- DE CLERCQ M. (1995) *Economie toegelicht*, Leuven, Garant
- DEJONGHE T. (2001) *De noodzaak aan exogeen oplegde economisch-geografische principes bij het professionaliseren van het door endogene factoren ontstane wereldsportstelsel. Gevalstudie: het lokalisatievraagstuk van het topvoetbal in België*, doctoraatsverhandeling, Universiteit Gent
- DEJONGHE T. (2004a) *Restructuring the Belgian professional football league: a location-allocation solution*, Tijdschrift voor Economische en Sociale Geografie,95,1,p73-88
- DEJONGHE T.(2004b) *Sport en economie: een noodzaak tot symbiose*, Nieuwegein, ArkoSportsmedia
- DELOITTE & TOUCHE,(1998-2003) *Soccer reports 1998-2003*, Manchester, Deloitte & Touche
- DELOITTE & TOUCHE (2002,2003) *Annual review of football and finance*, Manchester, Deloitte & Touche
- DEVLETOGLOU N.(1965) *A dissenting view of duopoly and spatial competition*, *Economica*, London, London School of economics and political science,32, p.146-160
- DOWNWARD P. & DAWSON A. (2000) *The economics of professional team sports*, Londen, Routledge
- GHOSH A. & CRAIG S. (1983) Formulating retail location strategy in a changing environment, *Journal of Marketing*, 47,19, p.56-68
- GOLLEDGE R. & STIMSON R. (1997) *Spatial behaviour: A geographic perspective*, New York, The Guilford Press
- GRATTON C. & TAYLOR P.(2000) *Economics of sport and recreation*, London, Spon Press
- HOTELLING H. (1929) Stability in competition, *The Economic Journal*, XXXIX(153), p.41-57
- HUFF D. & BATSELL R. (1977) Delimiting the areal extent of a market area, *Journal of Marketing Research*, 14, p.581-585
- LÖSCH A. (1962) *Die raumliche ordnung der wirtschaft*, Stuttgart, G.Fischer
- NIS (1997) Bevolking van het rijksregister 01/01/97 tabel 70.01 deelgemeenten
- NOLL R.(1999) Competition policy in European sports after the Bosman Case, in Jeanrenaud C. & Késenne S. "Competition policy in professional sports, Antwerpen, Standaard Ed Ltd, p.17-44
- SAEY P. & LIETAER M. (1980) Consumer profiles and central place theory, *Tijdschrift voor Economische en Sociale Geografie*, 71,2, p.180-186
- SHEPPARD E. (2000) Competition between places, in Sheppard & Barnes(ed) *A companion to economic geography*, Malden, Blackwell, p.169-186
- SLOANE J.(1971) The economics of professional football: the football club as utility maximiser, *Scottish Journal of Political Economy*, 70, p.65-94
- THOMAS I. (1993) Sensibilité du découpage spatial optimal des services d'urgence à la définition de la demande, *L'espace Géographique*,22,4, p.318-332
- UEFA (2001) *Report Football and television 2001: comparative analysis of major European countries*, Paris, 40p

VAN DER HAEGEN H., PATTYN M. & CARDYN C. (1982) The Belgian settlement system, in Van Der Haegen(ed), "*West European settlement systems*", Leuven, Acta geographica Lovaniensia 22, p.252-359
VAN HECKE E. (1997) *Hiërarchie van de stedelijke kernen in Vlaanderen*, Heverlee, instituut voor Sociale en Economische geografie

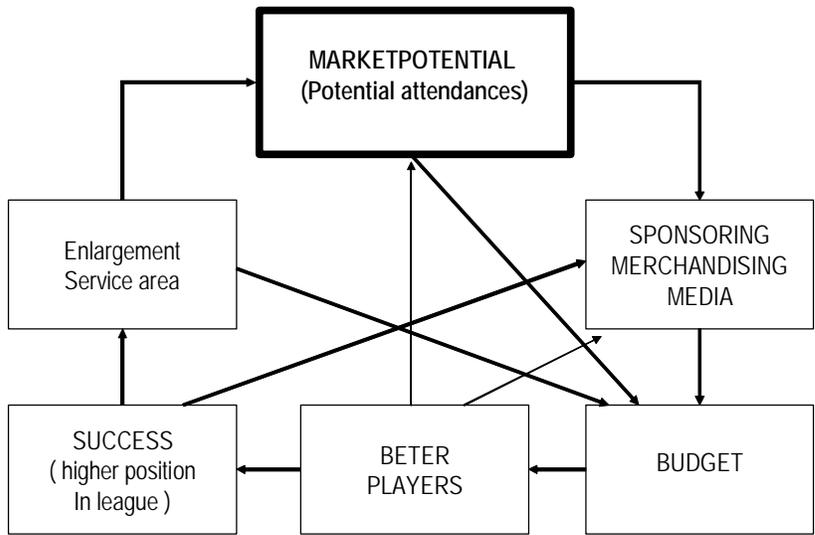


Figure 1: The endogenous growth model (Dejonghe 2001:301)

Club	Ljj	Club	Ljj
SC Anderlecht	33,37	SK Beveren	157,41
St Liège	20,15	St Truiden VV	261,80
FC Brugge	74,32	AA La Louvière	133,54
SC Charleroi	32,26	KV Kortrijk	136,60
AA Gent	49,04	RWDMolenbeek	8,92
RC Genk	208,70	SK Lommel	412,60
GBAntwerpen*	17,79	KV Oostende	103,91
SK Lierse	176,31	V Geel	271,69
Exc Moeskroen	214,20	SC Lokeren	203,47
FC Antwerp	16,51	VC Westerlo	395,31
KV Mechelen	156,20	RC Harelbeke	234,59
E Aalst	168,80		

Table 2: The local consumption indexes

* The value for GB Antwerpen was calculated on the data from G Ekeren, the first division club that merged with the third division club Beerschot Antwerpen

Group	Club	Location
Major clubs in major or regional cities with a low Ljj	SC Anderlecht	Brussel
	FC Brugge	Brugge
	Standard Liège	Liège
Regional clubs in major cities with a low Ljj	AA Gent	Gent
	SC Charleroi	Charleroi
Regional clubs in regional cities with a high Ljj	RC Genk	Genk
	AA La Louvière	La Louvière
	KV Mechelen	Mechelen
	E. Aalst	Aalst
	KV Oostende	KV Oostende
	KV Kortrijk	KV Kortrijk
Smaller clubs in smaller cities with a high Ljj	STVV	Sint-Truiden
	Exc Moeskroen	Moeskroen
	SK Lierse	Lier
	SC Lokeren	Lokeren
	SK Beveren	Beveren
	SK Lommel	Lommel
	V Geel	V Geel
	RC Harelbeke	Harelbeke
Local clubs in communities with a high Ljj	VC Westerlo	Westerlo
	GBAntwerpen	Antwerpen
Local club in major cities with very low Ljj	FC Antwerp	Antwerpen
	RWDMolenbeek	Brussel

Table 3: The more homogeneous subgroups

Club	Merge	Location	Potential consumers	Monopolistic Area
SC Anderlecht	-	Brussel	1,619,491	743,926
Standard Liège	-	Liège	1,064,743	874,955
FC Brugge	-	Brugge	844,542	575,828
Metropool Antwerpen	FC Antwerp – GB Antwerpen	Antwerpen	634,864	453,030
SC Charleroi	-	Charleroi	469,110	361,002
Lier-Mechelen	Lierse – Mechelen	Intercept	459,844	277,033
FC Borinage-Centre	La Louvière – Mons ¹³	Intercept	446,577	413,024
RC Genk	-	Genk	444,840	269,813
AA Gent	-	Gent	406,985	252,919
FC Southwest	Harelbeke-Kortrijk-Waregem	Intercept	342,892	152,014
FC Waasland	Beveren – Lokeren	Sint-Niklaas	310,840	185,222
FC Kempen	Westerlo – Geel –Turnhout	Intercept	296,174	201,033
FC Haspengouw	Sint-Truiden	Sint Truiden	291,743	169,454
Exc Moeskroen		Moeskroen	288,916	255,916
TOTAAL			7,921,561	5,185,169

Table 4: The empirical first division with 14

¹³ AEC Mons promoted to the first division in 2001/02

	Model Dejonghe	C_{ij}	A_{ij}
MONOPOLY AREA	$P_{ij} \geq 80$		B_i
Aa		$\geq R_i$	
Ab		$2/3R_i \leq C_{ij} < R_i$	
Ac		$1/3R_i \leq C_{ij} < 2/3R_i$	
MONOPOLISTIC COMPETITION AREA	50 –80		$P_{ij} \times B_i$
Ba		$\geq R_i$	
Bb		$2/3R_i \leq C_{ij} < R_i$	
Bc		$1/3R_i \leq C_{ij} < 2/3R_i$	
RESTAREA			
Ca	25-50 or ≥ 50 with	$1/5R_i \leq C_{ij}$ $1/5R_i \leq C_{ij} < 1/3R_i$	$P_{ij} \times B_i$ $1/4B_i$
RESTAREA			
Cb	10-25 or ≥ 25 with	$1/10R_i \leq C_{ij}$ $1/10R_i \leq C_{ij} < 1/5R_i$	$P_{ij} \times B_i$ $1/10 B_i$
NON COVERED AREA		$C_{ij} \leq 1/10R_i$	0

Club	Ljj	Club	Ljj
SC Anderlecht	33,37	SK Beveren	157,41
St Liège	20,15	St Truiden VV	261,80
FC Brugge	74,32	AA La Louvière	133,54
SC Charleroi	32,26	KV Kortrijk	136,60
AA Gent	49,04	RWDMolenbeek	8,92
RC Genk	208,70	SK Lommel	412,60
GBAntwerpen*	17,79	KV Oostende	103,91
SK Lierse	176,31	V Geel	271,69
Exc Moeskroen	214,20	SC Lokeren	203,47
FC Antwerp	16,51	VC Westerlo	395,31
KV Mechelen	156,20	RC Harelbeke	234,59
E Aalst	168,80		

Table 2: The local consumption indexes

* The value for GB Antwerpen was calculated on the data from G Ekeren, the first division club that merged with the third division club Beerschot Antwerpen

Group	Club	Location
Major clubs in major or regional cities with a low Ljj	SC Anderlecht	Brussel
	FC Brugge	Brugge
	Standard Liège	Liège
Regional clubs in major cities with a low Ljj	AA Gent	Gent
	SC Charleroi	Charleroi
Regional clubs in regional cities with a high Ljj	RC Genk	Genk
	AA La Louvière	La Louvière
	KV Mechelen	Mechelen
	E. Aalst	Aalst
	KV Oostende	KV Oostende
	KV Kortrijk	KV Kortrijk
Smaller clubs in smaller cities with a high Ljj	STVV	Sint-Truiden
	Exc Moeskroen	Moeskroen
	SK Lierse	Lier
	SC Lokeren	Lokeren
	SK Beveren	Beveren
	SK Lommel	Lommel
	V Geel	V Geel
	RC Harelbeke	Harelbeke
Local clubs in communities with a high Ljj	VC Westerlo	Westerlo
	GBAntwerpen	Antwerpen
Local club in major cities with very low Ljj	FC Antwerp	Antwerpen
	RWDMolenbeek	Brussel

Table 3: The more homogeneous subgroups

Club	Merge	Location	Potential consumers	Monopolistic Area
SC Anderlecht	-	Brussel	1,619,491	743,926
Standard Liège	-	Liège	1,064,743	874,955
FC Brugge	-	Brugge	844,542	575,828
Metropool Antwerpen	FC Antwerp – GB Antwerpen	Antwerpen	634,864	453,030
SC Charleroi	-	Charleroi	469,110	361,002
Lier-Mechelen	Lierse – Mechelen	Intercept	459,844	277,033
FC Borinage-Centre	La Louvière – Mons ¹⁴	Intercept	446,577	413,024
RC Genk	-	Genk	444,840	269,813
AA Gent	-	Gent	406,985	252,919
FC Southwest	Harelbeke-Kortrijk-Waregem	Intercept	342,892	152,014
FC Waasland	Beveren – Lokeren	Sint-Niklaas	310,840	185,222
FC Kempen	Westerlo – Geel –Turnhout	Intercept	296,174	201,033
FC Haspengouw	Sint-Truiden	Sint Truiden	291,743	169,454
Exc Moeskroen		Moeskroen	288,916	255,916
TOTAAL			7,921,561	5,185,169

Table 4: The empirical first division with 14

¹⁴ AEC Mons promoted to the first division in 2001/02

	P_{ij}	C_{ij}	A_{ij} B_i
MONOPOLY AREA	≥ 80		
Aa		$\geq R_i$	
Ab		$2/3R_i \leq C_{ij} < R_i$	
Ac		$1/3R_i \leq C_{ij} < 2/3R_i$	
MONOPOLISTIC COMPETITION AREA	50 –80		$P_{ij} \times B_i$
Ba		$\geq R_i$	
Bb		$2/3R_i \leq C_{ij} < R_i$	
Bc		$1/3R_i \leq C_{ij} < 2/3R_i$	
RESTAREA			
Ca	25-50 or ≥ 50 with	$1/5R_i \leq C_{ij}$ $1/5R_i \leq C_{ij} < 1/3R_i$	$P_{ij} \times B_i$ $1/4B_i$
RESTAREA			
Cb	10-25 or ≥ 25 with	$1/10R_i \leq C_{ij}$ $1/10R_i \leq C_{ij} < 1/5R_i$	$P_{ij} \times B_i$ $1/10 B_i$
NON COVERED AREA		$C_{ij} \leq 1/10R_i$	0

Model Dejonghe

	Total	A	Aa	Ab	Ac	B	Ba	Bb	Bc	C	Ca	Cb
SC Anderlecht	1.350.055	517.629	197.272	75.062	245.295	368.831	56.819	55.553	256.259	463.595	240.034	223.561
Standard Luik	1.080.395	872.705	34.477	102.424	735.804	27565	8.930	0	18.635	180.125	81.638	98.487
FC Brugge	768.074	386.535	207.748	127.547	51.240	198.769	79.384	44.989	74.396	182.770	97.194	85.576
SC Charleroi	462.634	365.511	0	274.052	91.459	62.718	0	30.723	31.995	34.405	26.616	7.789
AA Gent	406.902	252.919	252.919	0	0	104298	21.896	70.164	12.238	49685	30.812	18.873
RC Genk	403.848	212.194	212.194	0	0	96.512	37.679	14.645	44.185	95.142	79.649	15.093
GBAntwerpen	319.678	112.351	42.338	0	70.013	0	0	0	0	207327	203.864	3.463
SK Lierse	262.822	119.928	111.643	0	8.285	85.972	33.619	16.846	35.307	56.922	35.490	21.432
Ex Moeskroen	248.835	231.810	131.791	94.448	5.571	5.057	0	0	5.057	11.968	6.262	5.706
FC Antwerp	234.380	0	0	0	0	4.972	0	0	4.972	229.408	216.443	12.965
KV Mechelen	199.094	119.424	119.424	0	0	39.610	18.522	9.902	11.186	40.060	25.066	14.994
E Aalst	185.843	76.197	76.197	0	0	51.350	33.555	17.795	0	58.296	33.419	24.877
SK Beveren	179.252	75.877	44.533	31.344	0	89.594	0	9.363	80.231	13.781	7.951	5.830
St Truiden VV	178.971	90.497	90.497	0	0	30.717	18.929	7.547	4.241	57.757	39.495	18.262
La Louvière	173.955	76.809	76.809	0	0	86.412	52.919	11.474	22.019	10.734	0	10.734
KV Kortrijk	170.442	75.639	75.639	0	0	52.138	44.171	0	7.967	42.665	21.062	21.603
RWDMolenbeek	163.411	0	0	0	0	74.919	57.410	0	17.509	88.492	38.052	50.440
SK Lommel	126.071	38.067	29.644	0	8.423	53.961	29.643	14.282	10.036	34.043	30.379	3.664
KV Oostende	106.458	58.245	58.245	0	0	13.742	13.742	0	0	34.471	14.302	20.169
V Geel	98.138	17.379	17.379	0	0	54.730	54.730	0	0	26.029	21.442	4.587
SC Lokeren	93.904	36.123	36.123	0	0	9.954	0	0	9.954	47.827	23.600	24.227
VC Westerlo	82.722	34.884	34.884	0	0	9.057	9.057	0	0	38.781	28.345	10.436
RC Harelbeke	68.470	26.418	26.418	0	0	23.105	0	23.105	0	18.947	17.939	1.008
	7.364.354	3.797.141										

Table 1: De 23 A-B-C zones