UDC: 711:711.45(497.451.1)

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Secondary business districts in Ljubljana: Analysis of conditions and assessment of planned development

This paper presents secondary business districts in Ljubljana according to the conditions in the 2008 proposal of the City of Ljubljana spatial plan. The introduction first clarifies the term "secondary business district" and continues by presenting the basic typology of secondary business districts, which is based on a historical approach and represents an inventory of these districts in Ljubljana. Selected features of these districts are presented, especially from the business viewpoint. The structure of companies, the time of their establishment, capital ownership and size are presented in greater detail. The second part analyses the draft spatial plan in order to determine the future changes in secondary business districts, their creation and disappearance. Simple criteria are used to critically assess the City of Ljubljana draft spatial plan and identify the six most critical secondary business districts that deviate significantly from these criteria.

Keywords: business district, business zone, spatial planning, urban economy, Ljubljana, Slovenia

1 Introduction

The development and expansion of new business, shopping, retail and other commercial areas is clearly one of the prominent features of Ljubljana and its wider area. This reflects the basic social, political and economic changes in the last twenty years that are associated with the development of a post-industrial city. At the sectoral level, this involves the transformation of the city's economic base from industry into services, which is also reflected in the transformation of former industrial parks into business parks, shopping districts, service areas, entertainment areas and other activities. At the same time, this also involves a thorough transformation of society as a whole: individualisation, privatisation, increased entrepreneurial initiative, changes in the population's mobility and other social factors also have an impact on the expansion and transformation of these economic areas. These areas obviously offer better conditions for entrepreneurial development than the traditional central locations in built-up urban areas. At the same time, Ljubljana plays a special role: due to its dominant status in the Slovene urban system, it represents a hub for investment activity, which is reflected in the environment by the development of business, production and other facilities, thus also influencing the development of secondary economic districts.

The term "secondary business district" denotes an area outside the built-up parts of the city or on its outskirts where business and accompanying activities are concentrated. The term functions as a counterweight to a "primary" or central business district (CBD), usually located in the city centre. It is generally used in urban geography studies (Pak & Rus, 2005) and probably arises from the pragmatic need to distinguish between the CBD and recent business districts, which differ in many historical, morphological and functional viewpoints. Nonetheless, it must be stressed that the CBD is only one form of business district; it is unique, but it is not the subject of this study. Other terms are also used according to the predominant function of individual commercial areas: industrial, retail, business, shopping and service district. The term "district" is given priority over the term "zone". This paper thus focuses on secondary business districts rather than central business districts.

The development of secondary business districts on the outskirts, especially in abandoned production, logistics and other areas, is thus a logical result of urban development: traditional industrial urban development is characterised by the concentration of commercial activities in the built-up part of the city, which the neoclassical land-use models usually refer to as the central business area. The post-industrial phase of urban development is characterised by a changed method of management (i.e., post-Fordism with more flexible production, shorter production cycles, seeking market niches, workforce changes and internationalisation of business) and is usually associated with reduced importance of the CBD, relocation of specific activities into the outskirts with greater location flexibility, lower operating costs and better accessibility (Hall, 1997; Soja, 2000). The city centre is losing certain functions, but at the same time it is acquiring new ones, especially those connected with consumption. Due to the greater functional interconnection of relations between the built-up city (i.e., the primary economic district) and the periphery (i.e., secondary business districts), population mobility flows are more dispersed.

The development of peripheral or secondary business districts (e.g., business, shopping, office, technology and a number of others) is usually connected with the logical continuation of suburbanisation, when the demographic flows from the city to suburbia are also followed by industrial and service activities (Ravbar, 2005). The main reason for this lies in the new location conditions for companies that expect lower transport and communications costs from locations on the periphery as well as lower costs arising from the agglomerations of similar companies (joint infrastructure and the proximity of similar and support companies) and, last but not least, lower construction costs and land prices. A further advantage of peripheral locations for specific commercial activities is also the accessibility of consumers. Due to the motorisation and suburbanisation of the population, the centre of population has changed, which is why shopping areas in particular are sited closer to motorways, where accessibility and the opportunity to use cars is optimal.

Despite the fact that these changes are greatly recognisable in the environment, new business districts are not frequently studied. This is partly because the concept "business area/zone" alone encompasses a wide range of activities that researchers find difficult to study within a uniform theoretical framework. Studies of only one type of modern business area such as shopping districts, high-technology business areas and retail areas are thus more common. Nonetheless one must admit that the growth, expansion and transformation of these diverse business areas are part of the same story: the post-industrial division of labour, in which individual areas (usually on the city outskirts) specialise in a specific type of economic activity, depending on the local conditions. In the past decades, new business areas have been (trans)formed that acquire specific business functions and represent a new geographic image of the city. This image no longer has merely one district, but several districts; secondary business areas have developed and are partly the result of moving certain activities from the built-up city and partly the result of increasing entrepreneurial activity.

The main goal of this paper is to show the complexity and diversity of important modern business districts in Ljubljana as well as their functional and spatial structure, to make a value judgment about their future development and to examine them through the prism of adopting the current municipal spatial plan of the City of Ljubljana. The first section classifies economic districts by their historical development and continues by analysing business entities to determine their function and business structure. This analysis can also be used as a professional basis for assessing the draft spatial plan. The second section focuses on and critically assesses the economic districts in the proposed spatial plan. It presents the spatial and functional changes introduced by the draft spatial plan and forms an opinion on them. Based on the criteria used, those areas are eliminated for which it makes sense to reassess the suitability of locations, and several well-considered questions regarding the development of business districts are presented.

2 An attempt to classify economic districts

The terminological problems connected with naming business districts are great and demand special treatment (see Čok, 2003). However, the definitions of business districts suggest that these are bounded areas with an agglomeration of economic associations and appertaining shared infrastructure (e.g., transport, communications and municipal infrastructure). The terminology used with business districts is not uniform either in professional studies or in legislation (e.g., the Spatial Order of Slovenia [Sln. *Prostorski red Slovenije,* Ur. l. RS, no. 60/2004] and other spatial-planning documents). The same is true of the rare classifications of economic districts: Bogomir Filipič (2000) classifies them by size, whereas Andrej Gulič and Luka Mladenovič (2009) classify them by their influence on the surrounding countryside.

Authors outside Slovenia have assessed individual functional areas (e.g., industry, services and shopping), although primarily from a morphological viewpoint that includes an analysis of the city's morphological elements such as the ground plan and type of construction and buildings (Rebernik, 2000). Harold Carter (1972) distinguished between the following types of industry locations in terms of their morphology:

- District locations, where primarily the type of industry is sited that requires good labour-force or market access such as various newspaper printing offices and "light" industry supplying companies in the CBD;
- Port locations;
- Radial locations, which result from being sited along main roads, where especially the type of industry that also requires raw materials outside the city is located;
- Locations in suburbanised environments, where industry that requires a great deal of space or produces large quantities of harmful emissions is sited.

Classifications have also often been made based on the size of the market covered by a specific type of commercial activity. This method has especially been established in studying shopping centres. Using the example of British cities, Michael Pacione (2001) distinguishes between supermarkets and hypermarkets and divides them into four groups based on their gravitation area: shopping centres (supplying 20,000–40,000 residents), local shopping centres (supplying up to 200,000 residents), regional shopping centres (supplying urban surroundings with up to 500,000 residents) and supra-regional shopping centres (supplying urban surroundings with more than 500,000 residents).

In addition, there have also been several attempts to classify business (service) districts. Hans Carol (1960, cited in Carter, 1972) divided them into four classes:

- Central business districts (CBD), which supply the entire city;
- Regional business districts, which supply up to 100,000 residents;
- Neighbourhood business districts, which provide lower-level services to up to 10,000 residents; and
- Local business districts, which are usually made up of several local stores.

Based on a study of American cities, Brian J. L. Berry and Frank E. Horton (1970) developed a typology of business areas outside the CBD. They divided them into three basic types based on their spatial form: business districts, business strips that develop linearly along major roads and specialised areas such as amusement parks, health centres and so on. They also produced a hierarchical scale for each type, with the central business district ranking the highest, followed by regional, district, local and other districts. They divided business strips into four hierarchy levels and specialised business areas into six levels. Ron J. Johnston (1971, cited in Carter, 1972) studied the characteristics of these business areas and established that the area's hierarchical position is closely connected with the type of services located in the area; lower-level services are concentrated in lower-level districts and strips, and vice-versa.

Currently, business and especially office area locations are primarily being studied by Robert E. Lang. Together with two colleagues, he used the example of thirteen American cities to determine that these areas take a number of forms (Lang et al., 2006). The central business district still contains around one-third of business activities and the rest are dispersed both within the built-up city area and elsewhere in the urban region. Within the built-up area, individual isolated areas are formed as a result of specific activities spilling out of the CBD into more favourable areas, referred to by Lang et al. as "urban envelopes". Outside the city, business activities tend to concentrate in "edge cities", which develop through the rapid growth and strengthening of (primarily) employment functions of small nearby settlements.

The types of classifications described above are not well suited for this study. Ljubljana has undergone a unique historical development based on which individual characteristic areas of concentrated commercial activities can be identified. Given their development and main sector orientation, several types of business districts can be identified in Ljubljana. They can basically be distinguished on the basis of their historical development. Thus the oldest economic districts in Ljubljana are those that already existed before the Second World War. These include the immediate areas of factories such as Union, Ilirija and Tobačna, which are closer to the urban centre than those located outside the city's built-up area (e.g., the Vevče Paper Mill, the Totra factory, etc.). Some preserve their activity, whereas others undergo transformation, in which they preserve their visual image but change their function (the Tobačna factory is a good example of this).

Another characteristic type is business districts from the period following the Second World War. The development of industrial zones along all major roads definitely left a mark on communist-era Ljubljana as did the development of shopping and service activities along the main arterial roads and in similar areas. This mainly involved linear development along the major roads, which gradually spread outwards from the city centre (Pak, 2000). In terms of the area covered, these include extensive areas in Ljubljana, the largest among which are the industrial and logistical district in Moste and the industrial zone in Šiška. The shopping and service areas generally developed in previously settled areas along the city's arterial roads, but later acquired completely new (especially retail and administrative) functions.

The period after 1990 saw a new turning point: in addition to the functional changes within the existing business districts, completely new areas began to develop. These were exclusively shopping and service areas because there has practically been no greenfield industrial development in Ljubljana. These areas developed as a result of the great interest of Slovene and other investors; in addition, an important role was also played by the municipality's own development projects (e.g., the Brdo Technology Park).

One must not forget another two extremely important business areas in Ljubljana, which are characteristic of any modern city: the historical district and the central business district. They have already been defined in other studies (see Genorio, 1978, or Pak, 2000) and continue to preserve an important economic role despite the pronounced development of the city's periphery.

Based on the historical premises described above, several types of Ljubljana business districts can be identified. They are presented in Table 1. It is important to stress that the chronological assessment took into account when a specific business district obtained its present form (construction layout) and that its function was ascribed in line with the current state. The Commercial Retail Centre (Sln. *Blagovno Trgovinski Center*, BTC) is classified as a shopping and service centre, which is definitely true today; however, the majority of this area was built and designed during the period after the Second World War to 1990, although it continued to change even after that due to restructuring.

Table 1: Overview of appertaining areas by individual historical types of Ljubljana business districts.

A) Primary business districts:	Size
1. Historical district	22 ha
2. Central business district (CBD)	107 ha
B) Secondary (peripheral) business districts:	
Industrial districts established before the Second World War:	76 ha
3a) Still active	41 ha
3b) Being abandoned or transformed	35 ha
Districts established after the Second World War by 1990:	
Industrial/retail districts:	501 ha
4a) Still active	456 ha
4b) Being abandoning or transforming their industrial/retail function	45 ha
4c) Shopping and other service centres	189 ha
Districts established after 1990 (greenfield development):	
5a) Shopping centres	30 ha
5b) Other service centres (offices, technology, etc.)	15 ha
Total	944 ha

Source: Bole & Ravbar (2009).

The area covered by the historical district and the central business district has already been thoroughly defined in previous studies on Ljubljana's functional and morphological structure (e.g., Pak, 2000, or Rebernik, 2000). The areas of the remaining types of individual business districts in Ljubljana were limited based on the professional assessment and mapping of 2007 aerial photographs. Districts that were only partially transformed (e.g., Mesarija) at the time of the mapping or had already abandoned their industrial function but still had a clear industrial morphology with other emerging activities (e.g., Tobačna, and Rog and Metelkova with the emergence of the culture scene) were jointly classified under the group "being abandoned or transformed". Such areas have great potential to become future districts of "cultural production and other specialised services" (Bole, 2008a: 275), which is why they were classified in separate groups. This group also included the Metelkova area, which has never had an industrial function, but represents an important area of Ljubljana's culture scene; it was built before the Second World War and once had an important military function.

Small sites with economic activities (e.g., individual companies) were not mapped; the focus was on larger areas with a generally larger number of business entities, which corresponds to the definition of business districts as areas with large business associations. The functional diversity of these types of areas is of course exceptional, which is why certain generalisations and compromises are required. Shopping and service activities in particular are not merely places where commercial activities take place, but are also residential areas with a notably mixed use of space. It is similarly difficult to distinguish between recent shopping and service areas that have developed after 1990 because these two functions often complement one another (i.e., offices and shopping). The BTC area is predominantly a service and shopping area, but also has a well-developed production function covering 19% of all areas (Bole, 2008b). Much the same is true of the western part of the business district in Stegne, where the retail function is gaining importance in addition to the production function, thus creating a multifunctional district (Bole, 2008b); this is a general characteristic of all modern business districts. Nonetheless, efforts were made to make this distinction and follow the classification described above in order to more easily understand the structure of individual business districts, while taking into account all of the deficiencies of this method.

Areas are classified based on two criteria: (1) the current state or size as determined by mapping aerial photographs and updating the conditions in the field, and (2) the history of a specific area's establishment and transformation as determined by using older maps and literature. Based on this method, a map of Ljubljana's business districts was produced according to individual historical types. It is clear that some districts have such diverse functions that classifying the entire area as only one type can be misleading. However, every classification generalises the actual state from the very beginning and therefore classifying an individual area is also subjective; this is also the greatest weakness of this kind of classification.

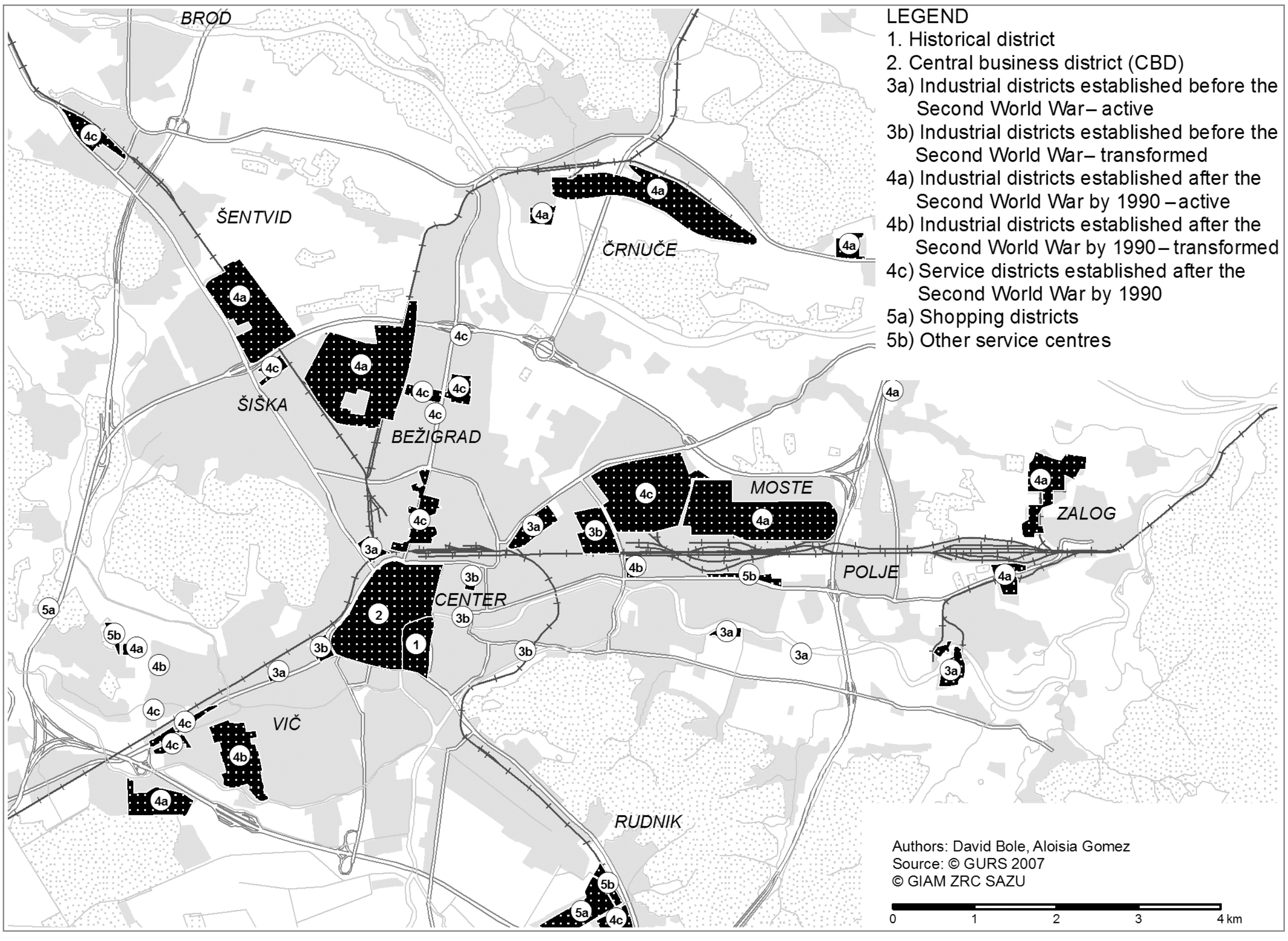


Figure 1: Historical types of business districts in Ljubljana (source: Bole & Ravbar, 2009).

Of a total of 944 ha, industrial zones created from 1945 to 1990 account for the largest share; here, it must be stressed that this reflects the actual state on the ground and not the planned state. The current state according to the plans cannot be compared to our business district classification. For example, in 2004 over 1,200 ha of planned area were allocated to industry (Kavaš & Koman, 2007), although shopping and other service functions predominate in some areas. Even districts that are completely service-oriented (e.g., BTC) continue to be classified under production and warehouse land use in the current Long-Term Plan for Municipalities and the City of Ljubljana for 1986–2000 for the Territory of the City of Ljubljana (Sln. *Dolgoročni plan občin in mesta Ljubljane za obdobje 1986–2000 za območje Mestne občine Ljubljana*, Ur. l. RS, no. 11/1986). Nonetheless, certain comparisons of individual types are interesting: greenfield investment (i.e., areas developed after 1990 on previously undeveloped land) accounts for only 5% of the total business area; this is surprising because according to some authors these investments are the predominant spatial forms of transition cities (see Burdack & Bontje, 2005, or Tosics, 2005). Older pre-war industrial areas continue to take up a relatively great share of space: a total of 8% of the area or 76.4 ha.

3 Analysis of selected characteristics of secondary business districts

3.1 Brief description of methods used

The entrepreneurial structure of each secondary business district in Ljubljana was analysed by the main activity, age, ownership and size of businesses. The authors sought to establish the differences between individual areas in Ljubljana and present their opinion on the reasons for these differences. An in-depth analysis was also used to present the wider functional importance of individual secondary business districts in Ljubljana. This was followed by mapping and thoroughly analysing all of the secondary business districts covering 20 ha or more. The analysis was used to collect the following information (Bole & Ravbar, 2009):

- The area's size in hectares was determined using digitised 2007 aerial photographs, which were obtained in 2009 and updated through field inspection;
- The potential of planned expansion was established using a large number of criteria, the first among which was the zone's location itself (e.g., if it was surrounded by areas already settled and at the same time completely internally filled, the potential for expanding its business activities was made considerably difficult). The latest draft Executive Spatial Plan for the City of Ljubljana (Sln. *Izvedbeni prostorski načrt Mestne občine Ljubljana*, IPN MOL) was also used, although it is still being adopted and revised;
- The proximity of other business parks was determined using GIS tools and rounded off to the nearest 50 metres;
- The number of business entities was determined using the Business Register of Slovenia (Sln. *Poslovni register Slovenije*, PRS) as of February 2009;
- The first three main activities were also determined by using the PRS and logically classifying a large number of activities into several groups of ten following the Standard Classification of Activities;
- The origin of the capital was established using the PRS and divided into three groups: foreign, mixed and domestic company founders;
- The share of medium-sized and large businesses was determined based on the EU methodology employed in the PRS, according to which medium-sized businesses have 10 to 200 employees and large businesses have more than 200 employees (Bole, 2008b);
- The share of companies established after 2005 was determined using the PRS;
- Spatial structure is the most subjective piece of information. The goal was to determine whether a specific district had a regular block layout with a clear grid. The prominence of this layout was determined using the aerial photographs and divided subjectively into the following classes: very visible, medium-visible, poorly visible and invisible or mixed;
- Land use was determined according to the currently valid conditions of spatial components in the long-term spatial plan of the City of Ljubljana;
- Connections with road infrastructure were determined based on the 2005 national road network. Three main groups of roads were distinguished: motorways (AC), regional roads (RC) and local roads (LC). The last category is under the jurisdiction of local authorities. Motorways only rarely cross the business areas directly and so direct or nearby motorway access points were also taken into account;
- Connections with railway infrastructure were determined using maps. In some places, the railroad crosses the business zones, but is not functionally connected with them and was therefore not taken into account;
- Connections with public transport infrastructure were determined using our own database of Slovene public transport stops.

Large-scale detail maps containing all of the information described above were produced for every secondary business district; an example is presented in Figure 2.

3.2 Commercial functions of secondary business districts

The PRS analysis enables an accurate analysis of the main activities of individual business districts. All of the historical types of Ljubljana's business districts presented contain near-

NAME OF THE DISTRICT :	CESTA DVEH CESARJEV
Location criterions	
size in hectars:	24,3 ha
possibility of spatial expansion:	no
proximity to other business districts:	600 m
number of enterprises:	134
three main activities:	trade 34%, real-estate, technical and expert services 20%, industry 14 %
the origin of the capital (%):	foreign 14,9%, mixed 6,0%, domestic 79,1%
the share of medium-sized and large companies (%):	26,1%
the share of newer companies (after 2005) (%):	25,4%
spatial structure:	mixed
land use according to spatial plan:	manufacturing, warehouses, terminals
connectivity with road infrastructure:	LC
connectivity with rail infrastructure:	no
connectivity with public transport infrastructure:	urban BUS stop (200 m)

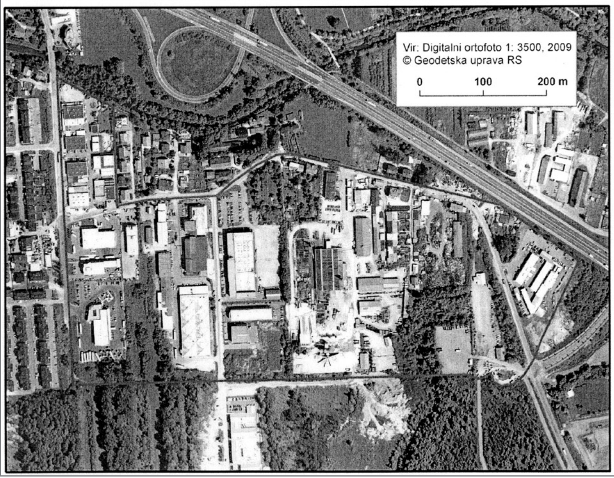


Figure 2: Sample detail map presenting an individual secondary business district (source: Bole & Ravbar, 2009).

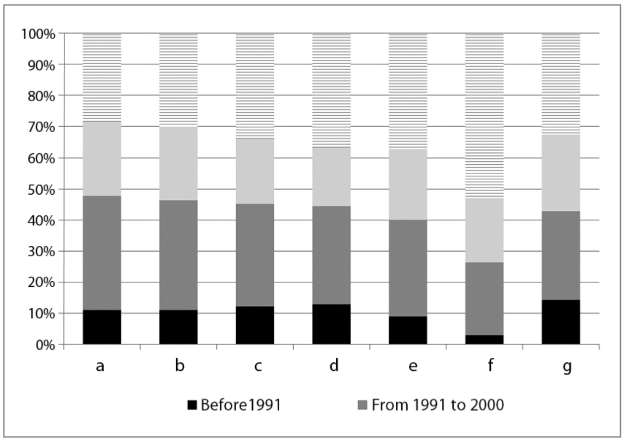
ly 12,300 business entities, accounting for more than 38% of all business entities in the City of Ljubljana. The wholesale and retail trade functions strongly predominate in secondary business districts, accounting for 30% of all business entities. In addition, professional, technical and real-estate services are also important, accounting for over 17% of companies; construction accounts for 8% and industry accounts for 6%. The share of largely public services (i.e., administration, healthcare and education) is below average, as expected; their share in secondary business districts is merely 3.5% and 19% in the entire municipality.

The analysis of business entities by main activity and by individual historical types shows a few interesting results (Table 2). Industry continues to predominate in older industrial areas established before the Second World War. The more recent the establishment of areas, the smaller their industrial function. Industry shares are generally fairly small, ranging from 1 to 14%; however, one should note that on average industrial business entities are considerably larger than entities dealing with service activities (Bole, 2008b). In addition, there are notable differences in retail business entities, with newer shopping centres that were established after 1990 predominating (e.g., the Rudnik Shopping Centre and Lesnina). More than two-thirds of businesses in these areas are engaged in retail, whereas other activities are fairly insignificant. New service centres established after 1990 are also interesting (e.g., the Technology Park and Rudnik), with predominating technical and professional services including various architecture studios and technology, IT and high-tech companies. Table 2 thus shows that historical classification also represents a type of functional classification because some types of commercial areas are significantly distinguished from one another by the structure of business entities.

3.3 Age of business entities in secondary business districts

Specific characteristics of individual business districts can also be revealed by analysing companies by the date of their establishment. If newer business entities are classified in a specific business district, it can be concluded that this involves a specific cycle of renovating or changing the companies' structure. In addition, attention must also be directed to the fact that, if a specific area was established more recently, this does not necessarily imply that this area also includes newer business entities because older companies that merely changed their location can also be sited in this area. The chronological structure of companies in a specific area is thus not necessarily connected with the age of the business area, but merely with its "conceptual" structure.

The data on the chronological structure of business entities by individual type of business district show that the latest shopping areas are also the "youngest" from the viewpoint



Note: a) industrial before 1945; b) industrial before 1945; in transformation; c) industrial 1945–1990; d) industrial 1945–1990; in transformation; e) retail, service 1945–1990; f) greenfield retail after 1990; g) greenfield service after 1990.

Figure 3: Shares of business entities in individual historical types of Ljubljana's business districts by time of establishment (source: Bole & Ravbar, 2009).

Table 2: Shares of business entities in individual historical types of Ljubljana's business districts by main activity.

Type of activity	Industrial areas before 1945	Industrial areas before 1945; being transformed	Industrial areas after 1945	Industrial areas after 1945; being transformed	Shopping and service areas, 1945–1990	Shopping areas after 1990	Service and office areas after 1990
Industry	13.77	8.25	7.81	8.35	3.32	0.91	4.48
Construction	14.86	11.34	9.19	17.04	5.51	2.73	5.22
Municipal services	1.09	0.21	0.85	0.87	0.43	0.00	0.37
Retail	23.91	15.46	29.01	21.91	36.73	69.09	24.63
Repairs	0.36	0.41	0.53	0.52	0.30	0.00	0.00
Transport	6.88	3.09	3.60	1.39	1.63	0.00	2.61
Telecommunications	3.26	5.77	6.25	6.26	4.85	0.00	14.93
Real estate	2.17	2.47	4.06	2.43	5.08	6.36	4.85
Technical and professional services	12.68	17.11	18.27	18.61	16.77	2.73	24.63
Tourism	5.07	2.47	2.69	3.13	4.68	10.00	2.61
Finance	1.81	1.65	4.38	1.22	4.52	0.91	2.61
Other business services	2.54	4.12	2.33	1.74	2.29	0.00	2.24
Education	0.36	3.09	1.38	1.74	1.49	0.00	1.12
Culture, sports	1.45	5.36	2.12	2.26	3.02	0.00	0.75
Administration	0.36	1.24	0.21	0.17	0.63	0.00	0.00
Healthcare	1.45	1.86	1.13	4.17	1.30	0.00	5.97
Other	7.97	16.08	6.18	8.17	7.44	7.27	2.99

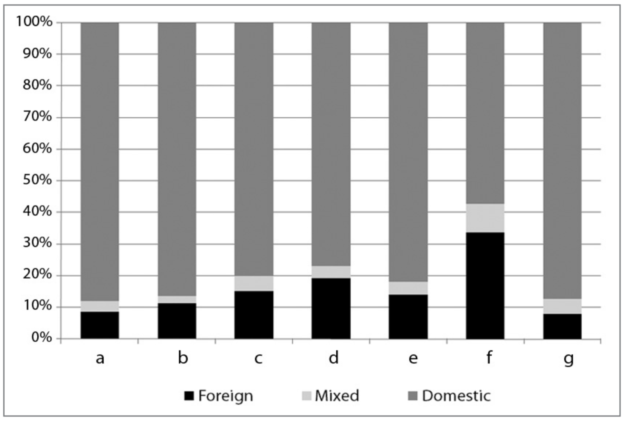
Source: Agency of the Republic of Slovenia for Public Legal Records and Related Services (2009).

of company age (Figure 3). The most recent shopping areas, which were developed after 1990, include more than half of all business entities established after 2005 and at the same time also by far the fewest companies established before 1990. It is obvious that retail companies reflect the greatest dynamics in terms of establishment and location in secondary business districts. In addition, the latest service (office) areas developed after 1990 are interesting: they have the highest share of older companies (i.e., 15%). These modern office districts (e.g., the Ljubljana Technology Park) are the place of choice for older and established companies that are seeking modern facilities with a state-of-the-art location and infrastructure conditions (i.e., the city periphery, a large number of green areas, good connections with the transport infrastructure and facilities with modern equipment).

3.4 Analysis of secondary business districts by capital ownership

The average share of foreign capital in all districts is 11%. Business districts in greenfield areas (e.g., Rudnik and Lesnina) have the highest share of foreign capital – that is, three times higher than average (i.e., 34%). The share of mixed capital is also above average in newer shopping areas (i.e., 9%; Figure 4).

The comparison of capital origin by individual secondary business district shows a very similar pattern, as does the analysis of historical types described above. In all districts, domestic capital accounts for the largest share; its share is the highest in old industrial districts (e.g., Zalog, Petrol, Jata and Union), where it even reaches 100%. It is clear from the analysis that recently developed business districts and some large dynamic service areas contain more foreign companies, whereas domestic companies predominate in older and more "static" areas. This probably agrees with the thesis that in the previous social system services were notably undersupplied and that foreign investors (as in other transition countries) were most interested



Note: a) industrial before 1945; b) industrial before 1945; in transformation; c) industrial 1945–1990; d) industrial 1945–1990; in transformation; e) retail, service 1945–1990; f) greenfield retail after 1990; g) greenfield service after 1990.

Figure 4: Capital origin in individual historical types of business districts in the City of Ljubljana (source: Bole & Ravbar, 2009)

in service and shopping business zones. This is why the shopping centres in the Rudnik neighbourhood and the logistics centre on Letališka Cesta have the highest shares of foreign and mixed capital in Ljubljana (Figure 5).

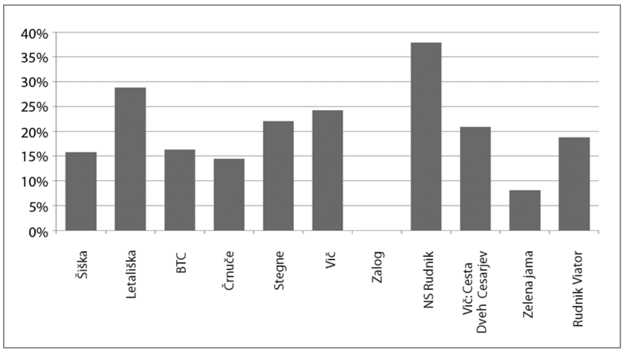
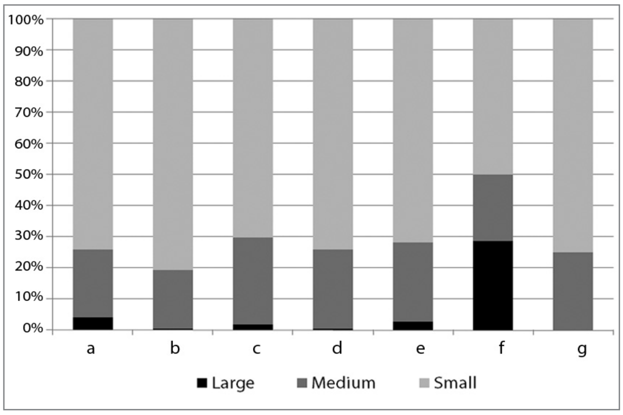


Figure 5: Share of foreign and mixed capital in all major business districts identified in Ljubljana (source: Bole & Ravbar, 2009).

3.5 Analysis of secondary business districts by business size

The data on the size of companies at the EU level are divided into the following categories: small businesses (1–9 employees), medium-sized businesses (10–199 employees) and large businesses (more than 200 employees). The categories "0 employees" and "no data provided" in the PRS database were excluded. 65% of all businesses in the research area were excluded from the study; the majority of these were sole traders with no employees, various societies, trade unions and inactive businesses. Small businesses predominate in secondary business districts with a 75% share; the share of medium-sized businesses is 23% and the share of large businesses with more than 200 employees is only 2%.

In general it can be established that areas undergoing functional transformation have a more fragmented entrepreneurial structure and a below-average share of large businesses, whereas industrial areas have larger businesses on average, which is connected with the organisation of labour in the industrial sector, which usually employs a larger number of workers than service businesses (Figures 6 and 7).



Note: a) industrial before 1945; b) industrial before 1945; in transformation; c) industrial 1945–1990; d) industrial 1945–1990; in transformation; e) retail, service 1945–1990; f) greenfield retail after 1990; g) greenfield service after 1990.

Figure 6: Size of businesses in individual historical types of business districts in the City of Ljubljana (source: Bole & Ravbar, 2009).

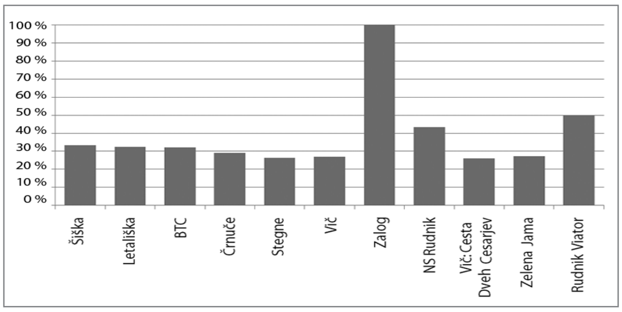


Figure 7: Share of medium-sized and large businesses in all major business districts identified in Ljubljana (source: Bole & Ravbar, 2009).

3.6 Summary of main findings of the analysis of business districts in Ljubljana

The main findings of the analysis of business entities and other variables described in Section 3.1 can be summed up as follows (Bole & Ravbar, 2009):

- Business districts in Ljubljana cover 944 ha of the total area;
- Industrial districts from the post-war period or districts developed in these areas account for the highest share. The share of greenfield development in Ljubljana is below 5% of the business district total area;
- Eleven business districts cover more than 20 ha; the largest district is the Šiška Industrial Zone, followed by the district along Letališka Cesta and BTC;
- Retail function predominates in business districts, including the areas labelled as production areas in the existing spatial plan (e.g., BTC, Stegne and Rudnik). Industry predominates in the oldest areas (e.g., Union and Ilirija), whereas younger areas are notably service-oriented. The share of public sector is above average;
- The structure of business entities by individual areas is extremely diverse. Older businesses (largely industrial and with a large number of employees) predominate in old mono-functional industrial districts (e.g., Union, Ilirija, Cesta Dveh Cesarjev and Zalog). These areas could be labelled as static;
- On average, industrial parks from the communist period and more recent service centres have a younger business structure, which is more fragmented and service-oriented; this indicates a more intensive development and therefore these areas could be referred to as dynamic business areas.

Certain characteristics can be identified from this analysis and taken into account in planning business districts. The first characteristic is the multi-functional nature of these areas. The traditional production, shopping or other mono-functional business districts no longer exist, which is also evident from the analysis. This must be taken into account when planning business districts, and emphasising merely the industrial or other function should be avoided. The mono-functional structure is only prudent in planning extremely specific business districts such as logistics areas. However, it would be prudent to site larger industrial plants in the Zalog industrial zone, which has sufficient space available for additional large industrial plants. The results of the analysis also show a clear predominance of increasingly smaller businesses that are largely service-oriented, which should also be taken into account in planning business districts (the ground plan, traffic layout, parking, etc.).

Less than 5% of business districts in Ljubljana have been established on previously undeveloped land, which is favourable from the viewpoint of sustainable development. In order to preserve these unique conditions, it would also be prudent to prevent this type of spatial development in the future and to direct the attention of foreign investors to degraded areas that have already been developed (i.e., brownfield development). The analysis also shows that special attention should be directed towards industrial and small-business districts from the post-war period; these are the most dynamic and undergoing thorough restructuring, which is why urban planning is especially important for them.

4 Overview of planned development of business districts in the future

After Slovenia gained independence and entered the market economy, its spatial development changed significantly. However, unlike other transition countries that have experienced radical changes in terms of suburbanisation of commercial activities and development of various shopping, office and technology areas on suburbanised outskirts (e.g., Tosics, 2005, or Stanilov, 2007), Ljubljana has experienced a different development. The share of investment in the city outskirts was considerably smaller because the greenfield investment after 1990 covered merely 45 ha. New business districts in the form of various small-business, entrepreneurial and similar zones began to be established in the city (Gulič & Mladenovič, 2009).

Greater emphasis was placed on restructuring the existing business districts and changing their function. This is also evident from comparing the planned and actual land use: industrial activity continues to take place on only 39% of the total area allocated for production (Kavaš & Koman, 2007). Moreover, the analysis of business entities also shows that areas in which industry predominates are rare; services (e.g., retail, professional, transport, logistics and other services) already largely predominate in all business districts. Completely new districts have also developed such as those in the Rudnik neighbourhood and the Brdo Technology Park. These two districts are the result of planned expansion, whereas more "spontaneous" expansion of specific commercial activities (especially crafts and small businesses such as on Tržaška Cesta) can be observed along some arterial roads, although it is considerably smaller in size.

The expansion of existing or completely new business districts was presented based on the 2008 draft Executive Spatial Plan of the City of Ljubljana, which was the only current source at the time this paper was being prepared and submitted (the new updated draft IPN MOL was published at the end of 2009, when this paper had already been submitted for review). This draft is used to determine which business districts will expand and which will become smaller.

Anticipating that the actual spatial plan will not considerably deviate from the 2008 draft IPN MOL, business conditions will change significantly in Ljubljana. Changes are anticipated to take place in the following segments:

- Spatial expansion and shrinking of specific business areas and completely new (greenfield) development of business areas;
- Changes in the function and internal structure of secondary business districts.

4.1 Spatial expansion/shrinking and new (greenfield) development

Reviewing the draft IPN MOL, four basic groups of the planned development of business areas in the City of Ljubljana have been identified:

- Group no. 1 includes major expansions (over 20 ha) of the existing business areas for a planned total of 159 ha. This involves expansion of specific industrial districts (e.g., Črnuče, Zalog and Vevče);
- Group no. 2 includes minor expansions (below 20 ha) or additional construction in existing business areas for a planned total of 33 ha. This primarily involves business areas that are still being constructed such as the Brdo Technology Park and the Rudnik Shopping Centre;
- Group no. 3 includes completely newly planned independent business areas (greenfield development) covering 88 ha according to the draft IPN MOL. This includes the area near Nadgorica as well as the Stožice neighbourhood, which was included due to its planned

retail function and where a new shopping centre is planned by 2011;
- Group no. 4 includes the area of linear development of commercial activities along Tržaška Cesta. The IPN MOL also regulates this organically structured business area and plans to round off and further develop the various craft and small-enterprise activities along this arterial road into a uniform morphological form. By building up the "empty" spaces, this area will become more important because it will include an additional 13 ha of new land allocated for commercial (especially office and entrepreneurial) activities.

The 2008 IPN MOL allocates a total of 268 ha for further development of existing and completely new secondary business areas in Ljubljana (Figure 8). The existing business areas account for the largest share of the planned expansion of business districts; they will undergo the greatest expansion. In the Črnuče secondary business district, expansion is to proceed south of the existing built-up area. According to the 2008 draft IPN, this new section of the business district will include an additional 58 ha. This will make this area the largest business district in Ljubljana in terms of size as well as the largest industrial area. An expansion of nearly the same size (west of the already built-up area) is also planned in the Zalog business district (a transport-logistics terminal), which will thus become

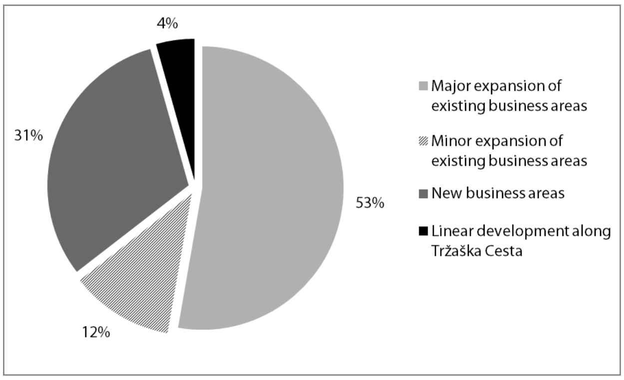


Figure 9: Shares of planned expansion of existing and new business areas in Ljubljana (source: City of Ljubljana, 2008).

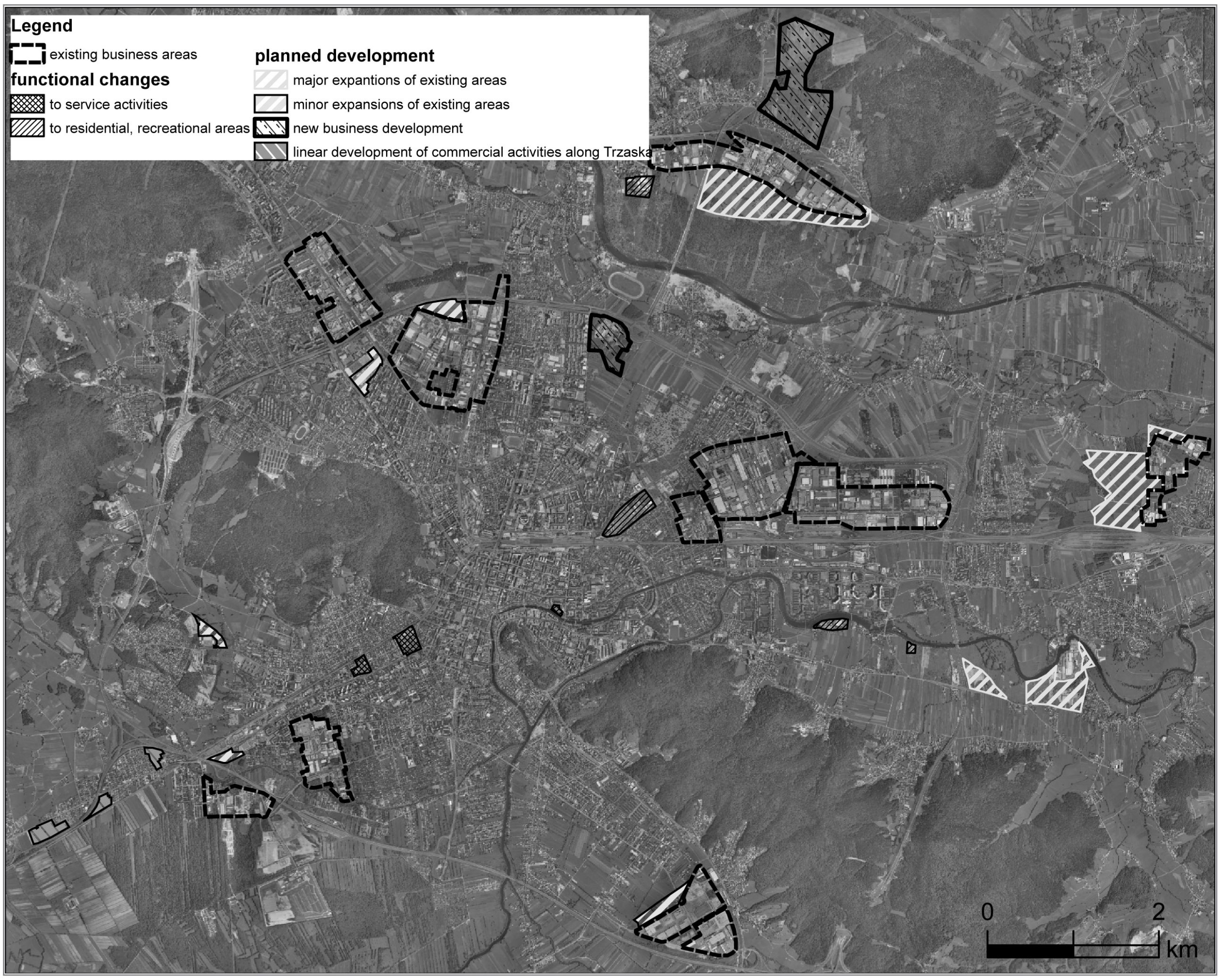


Figure 8: Planned spatial development of Ljubljana business areas according to the IPN MOL (source: City of Ljubljana, 2008).

the second-largest business area in Ljubljana, just behind the Črnuče area. Both business district expansions will be carried out at the expense of arable farmland.

Minor expansions are planned at the Rudnik Shopping Centre and along Tržaška Cesta (Avtoline). The next stage of construction is planned in the vicinity of the Technology Park to expand the existing office area by an additional 5 ha. In addition, the Šiška industrial zone is also planned for slight expansion to fill up the available farmland in the north all the way to the city's ring road.

Among the individual planned business areas, the greatest change (67.8 ha) will be the new business district north of the existing Črnuče secondary business area near Nadgorica. According to the current situation, this entire area consists of farmland. In line with the draft IPN MOL, this will be turned into an industrial zone competitive with the nearby Trzin business district.

A new business area is also planned in the Stožice neighbourhood, where a retail function is also planned in addition to a new sports stadium (currently under construction). However, this fact is not clearly indicated in the draft IPN MOL because this area is still designated as a sports centre (labelled BC). The area's retail function will be emphasised by a retail facility covering 20 ha and combining a large number of small stores in addition to a major hypermarket.

In addition to expansions, the draft IPN MOL also envisages shrinking specific business areas, especially in old, pre-war industrial areas that have already changed their function and are more suitable for residential or service functions given their location. Thus the areas of the Kolinska factory will most likely be converted into a residential or central area and partly also the areas of the Tobačna, Ilirija and Rog factories. The draft IPN MOL also envisages other changes: the areas of the Žima and Totra factories are planned for conversion into special residential areas and parks, and part of the farm in the Sneberje neighbourhood is to be changed into a tourism facility (labelled BT). In addition, the small area of the Elma factory in the Črnuče neighbourhood is also planned for conversion into a residential area.

4.2 Functional transformation of secondary business districts

Not only spatial, but also functional changes within business districts and their shrinking must be mentioned here as well. The fact that other service business districts will not be made smaller but merely internally reorganised also suggests that deindustrialisation and simultaneous tertiarisation is the predominant process in Ljubljana. The largest retail area of BTC is thus planned for division into a northern predominantly "business" part and a southern predominantly shopping part. The planned expansion of BTC includes a change in the intended use of the Žito factory and minor expansion in the northeast towards the city ring road, where additional land for parking is to be secured. In May 2008, a design competition was also carried out for developing the area along Šmartinska Cesta; this may partly indicate the trends of this area's future development. Specifically, all of the projects selected emphasised compact construction, construction of skyscrapers and "reviving" this area by connecting it to the urban core and creating parks and pedestrian-friendly areas. Other projects that may thoroughly change the city's image are also planned. These include the construction of a transport centre next to the main railway and bus station, developing the area next to Bavarski Dvor, the Novi Kolizej project and so on.

The map of functional changes according to the draft IPN MOL shows that only the areas in Šiška, in part of Stegne, in Črnuče and along Cesta Dveh Cesarjev will preserve their industrial function. The majority of other areas will also be functionally transformed into shopping areas (e.g., Rudnik, BTC, Vič, etc.) or districts with mixed central or exclusively central activities without residential areas. Areas intended for production will be reduced to 630 ha, which is 50% less than according to the existing spatial plan; however, nearly 240 ha will involve completely new greenfield expansions. Table 3 shows that the transformation of business districts from a production to service function predominates in the draft IPN MOL. The greatest transformation will entail a change from production-oriented use to central activities. This will especially be the case with business districts that have not had a production function for a long time now, but a shopping and service function instead.

Shopping centres will be preserved and slightly expanded in the areas of BTC, Rudnik, Vič and Mercator Šiška. Elsewhere, the intended industrial use in the spatial plan will change to

Table 3: Planned functional changes to secondary business districts in the draft IPN MOL.

Description of change	Area (ha)
Preserves its production function (business districts)	391.43
New production business districts	239.59
Change from production to central activities	139.10
Change from production to central activities without housing	53.01
New central activity areas	24.38
Change from production to core central activities	57.71
Change from production to residential activity	25.51
Other new business areas	20.63

Source: Bole & Ravbar (2009).

central activities. Areas in the Stegne and Zelena Jama neighbourhoods, along Šmartinska Cesta and southern Vič will be allocated to offices and other commercial activities, whereas other areas will combine retail and residential functions (labelled CU).

Future spatial and functional changes to business districts according to the 2008 IPN MOL can thus be summed up as follows:

- In general, industrial (production) areas will become smaller and the conditions in the plan will be adjusted to the current situation. Only a small part of industrial business zones will be preserved and more than one-third of new areas will be completely new;
- Some currently exclusively industrial areas (e.g., Ilirija, Totra, Žima and certain others) will disappear or be transformed; their intended use will be primarily transformed into commercial activities and partly also into residential and other activities;
- In every other respect, the new IPN MOL will merely be adjusted to the new situation; this applies to both shopping centres and central activity areas;
- The only non-industrial greenfield investment is planned along Tržaška Cesta and partly also in the Stožice neighbourhood, where a shopping centre and a sports stadium are envisaged.

It is clear that in the future business districts will expand spatially, especially due to new industrial areas. Even more pronounced will be the functional changes of business districts, although more from the viewpoint of updating and unifying the spatial plan in line with the actual state and less from the viewpoint of real functional transformation.

5 Critical assessment of the draft executive spatial plan of the City of Ljubljana

This assessment is based on the graphic appendices of the latest version of the IPN MOL from 2008 and therefore only our opinion on this draft can be presented here. The assessment

Figure 10: Planned functional development of business areas in Ljubljana according to the IPN MOL (source: City of Ljubljana, 2008).

partly relies on the results of the analysis of business entities in the business districts (see Section 3.6); in addition, criteria explained more broadly in other publications (Plut, 2006; Bole, 2008b; Bole & Ravbar, 2009) were also taken into account:

- From the viewpoint of sustainable development, greenfield development of business districts is less desirable;
- The functional structure of business districts must comply with the actual spatial needs (less traditional labour-intensive industry and more services and high-tech production, adjustments to the actual state);
- Logical combinations of related activities are desired rather than unilateral specialisation within business districts;
- From the viewpoint of balanced development of the urban region, secondary districts should be made complementary instead of overly competitive;
- In terms of infrastructure, districts should form links with the city core to the greatest extent possible, or "urbanise";
- Districts should be well connected with the public transport system;
- From the viewpoint of more prudent use of space and infrastructure, the corridor principle of designing business districts is desired.

For the most part, the draft IPN MOL takes into account the assessment criteria described above; however, its exaggerated stress on greenfield development and the less appropriate functional structure of specific areas should be criticised in particular. Some greenfield expansions of production areas do not seem prudent. The secondary district in the Črnuče neighbourhood is planned for considerable expansion at the expense of the local green areas; however, at the same time, part of the already developed area around the Elma factory is to be changed into a residential area. Because even at present the existing commercial activities in this area are not prospering, expanding this area towards the farmland and the direct vicinity of a water-protection area is not prudent. A similar conclusion can be reached with regard to the business districts in the Zalog and Vevče neighbourhoods.

In terms of economic geography, the expansion of new industrial business zones is the most controversial. Indicators of functional changes within the City of Ljubljana (Bole, 2008b) show a clear tendency towards Ljubljana's tertiarisation and deindustrialisation. However, the draft IPN MOL envisages 240 ha of greenfield land labelled IG, which denotes technology, industrial and production facilities with accompanying services (e.g., stores covering up to 2,000 m^2). Although the tendencies towards Ljubljana's deindustrialisation will be decreased or even stopped, the areas set in the IPN MOL are extensive, especially if taking into account that post-Fordist labour organisation in industry demands greater participation of specialised services (e.g., R&D and marketing), which usually require less space than traditional industrial production. A thorough analysis of Ljubljana's industrial function would also be wise before carrying out the planned expansion. The IPN MOL allocates 630 ha of land to business zones, which also complies with the environmentally friendly scenario of industrial development developed by Damjan Kavaš and Klemen Koman (2007). However, more than one-third of this area is planned for development on new, undeveloped land (i.e., farmland and forests).

Despite everything, in some business areas that include important industrial plants the intended use will not be production. The analysis of the Vič business district confirms that this area includes a concentration of plastic industry businesses and the southern part of this area also has a strong production function. In this concrete example, the plastic industry cluster is labelled BD in the draft IPN MOL, which does not allow any industrial or production activity, but merely reconstruction of facilities. It seems that, in certain cases, the draft IPN MOL is too rigid and leans too much towards pronounced specialisation of some business districts, without taking into account the interdependence and useful mixing of various commercial functions; this has already developed spontaneously in the majority of business districts, which is also confirmed by the findings of the analysis (see Section 3.2).

Business districts that do not complement one another, but compete within the same city region are inappropriate in terms of the balanced development of the entire region. Therefore, the prudence of establishing a small-business district in Nadgorica is seriously questioned; in terms of its program structure, this area is planned to be identical to the Trzin business district although it is only a few hundred meters away from it. At the same time, the Nadgorica business district would compete with the existing and presumably enlarged Črnuče district, which also has a similar program structure. The question whether this type of concentration of similar business districts makes sense at all and whether these districts would really prosper seems completely justified.

Public transport plays an important role in the strategic part of the Draft Strategic Spatial Plan for the City of Ljubljana (Sln. *Strateški prostorski načrt Mestne občine Ljubljana – dopolnjeni osnutek*; City of Ljubljana, 2009). The draft reveals that certain planned business districts do not have satisfactory connections with the public transport system. Given the fact that secondary business districts provide increasingly more jobs and also fulfil other functions, public transport links must be extremely high-quality rather than merely meeting the minimal standards in order to stop the trends of increasing private vehicle transport. Harmonious planning of land use and public transport is thus required in the implementation portion of the spatial plan. In

Table 4: Secondary business districts in the draft IPN MOL that least meet the criteria.

IPN MOL label	Name	Land-use label	Non-compliance with criteria
ČR–377	Nadgorica Business District	IG	• Extensive greenfield development; • Unbalanced competitiveness (proximity of the Trzin district); • Connections with the city (distance and spatial "exclusion")
ČR–155	Brnčičeva-South	IG	• Extensive greenfield development; • Unbalanced competitiveness (proximity of similar districts in Nadgorica and Trzin); • Functional structure (the area's current function differs from that in the IPN)
PO–375	Zalog Transport Logistics Centre	IG	• Extensive greenfield development • Public transport (the IPN MOL does not envisage any public transport links)
SO–1405	Vevče Paper Mill	IG	• Extensive greenfield development; • Functional structure (the draft IPN MOL does not include a specific function; demand for industrial areas in the City of Ljubljana is not great)
VI–211	Vič Small-Business District	BD	• Functional structure (the currently sited specific innovative industry and small businesses will not be allowed to expand their industrial activity according to the draft IPN MOL); • Public transport (the draft IPN does not envisage any significant improvements to public transport links)
DR–374	Stegne	IG	• Functional structure (this is one of the more important service areas in Ljubljana and the centre of wholesale activity (Bole, 2008b), which does not comply entirely with the intended use labelled IG, which favours production areas and merely treats service areas as "complementary")

Source: Bole & Ravbar (2009).

some places, the draft IPN MOL does not significantly improve the public transport links between the current and future business districts, but merely preserves the status quo.

Orienting business districts within set development corridors makes sense from the viewpoint of channelling both traffic flows and infrastructure. Development corridors have already been partly laid out in the strategic part of the spatial plan, whereas the IPN MOL largely takes into account the locations within Ljubljana's development axes. Only isolated areas of commercial activities that are being developed outside these corridors may be disputed (e.g., the Brdo Technology Park and other less important business areas in terms of size).

Based on the criteria described above, less appropriate business districts as proposed by the IPN MOL can be identified. With regard to the six secondary business districts that most clearly fail to meet the criteria set, it would make sense to reconsider the locations selected or amend the IPN MOL.

6 Conclusion

Secondary business districts are clearly one of the city's most prominent features. This is also true for Ljubljana, where these districts cover an area of nearly 1,000 ha and include nearly 40% of all businesses in the municipality, representing the new, post-industrial image of the city. These districts can be divided based on their historical development, which is often reflected in their economic structure and the function they fulfil within the city region. This paper presents a possible classification of secondary business districts, their economic structure and their role in the municipality. The function of every business district can be established based on the structure of its business entities. The retail function of these areas is extremely pronounced, whereas their production function is clearly dying away.

At the same time, this paper poses certain justified questions regarding the spatial development of recent business areas within the City of Ljubljana. These questions and doubts can form the basis for reconsidering the prudence of individual business district locations. In this regard it must be stressed that a uniform perspective on the development of secondary districts is crucial, just as is the case with the downtown. Using merely a sector-specific perspective, one overlooks their functional interconnectedness, which can lead to improper spatial development and can subsequently have a negative impact on the city's wider economic development. At the strategic level, a final decision must also be reached on which industries are desired the most in the municipality both from the viewpoint of further development and global competitiveness. Only a clear vision of economic and wider social development can form the basis for correctly siting modern business districts in Ljubljana.

In addition, the regional aspect of siting business districts as well as their harmony and spatial balance is also missing here. Some commercial activities could be assumed by other municipalities within this region, which would benefit both Ljubljana and the surrounding municipalities. However, the current development emphasises the establishment of a number of small local (municipal) business districts that compete with one another and are not logically connected in terms of their location and function.

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Acknowledgments

This paper is the result of the research project of Modern Business, Shopping and Other Commercial Districts in Ljubljana (Sln. *Analiza sodobnih poslovnih, nakupovalnih in drugih gospodarskih središč v Ljubljani*) prepared by researchers at the ZRC SAZU Anton Melik Geographical Institute. We would like to thank the City of Ljubljana for co-financing the project.

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