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**Potential for Online Conversion of Services in Urban and  
Suburban Neighbourhoods. Examples of Wrocław and  
Siechnice in Poland**

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**Potential for Online Conversion of Services in Urban and Suburban Neighbourhoods.  
Examples of Wrocław and Siechnice in Poland**

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**Abstract**

Services originally developed as natural concentrations of human activity, reflecting the Christallerian hierarchy of central places. Today those natural mechanisms are challenged by strong competition from online facilities. More and more services are offered by the Internet and this affects the traditional 'bricks-and-mortar' urban development. In this paper we examine the potential for conversion from offline to online channels in urbanized neighbourhoods. The research sample reflects the current trends in human settlement in Poland and includes a well-established urban neighbourhood (Pereca Square in Wrocław) and a rapidly developing suburban municipality (Rynek Square in Siechnice). A social research conducted in 2017 among users of public spaces and among service providers (276 respondents in total) enables drawing reliable hypotheses on the relationship between offline and online services in local contexts. The results show that about 58% of customers in Wrocław and 75% in Siechnice use online shopping whereas only 26% of service providers in Wrocław and 19% in Siechnice offer their products online. There is a significant potential for conversion from offline to online channels (and for hybridization of both of them) which is relatively higher in suburban neighbourhoods but lower in urban ones. The paper contributes to the current debate on the real-virtual dichotomy in urban development. In particular it addresses the question of the conflicting (competitive) or supporting (complementary) role of the Internet in shaping urban functions. It also gives a valuable insight into the demand-supply relationship in various (urban and suburban) settings and defines the potential for hybridization of online and offline channels in local urban services.

**Keywords:** neighbourhood, services, conversion, online, offline

## Introduction

Services are one of the core functions of urban areas. They determine the unique specialisation of a city, they define its position in the hierarchical urban network, they induce its competitiveness and finally contribute to the citizens' quality of life. Originally services had developed as natural concentrations of human activity, reflecting the 'least effort' principle (Zipf, 1949): on one hand service clusters to satisfied various needs of citizens and on the other hand they guaranteed the economic efficiency for service providers. But today those natural mechanisms are challenged (disturbed?) by the rapid development of online services. More and more facilities are offered by the Internet and this affects the traditional 'bricks-and-mortar' patterns of urban development.

In this paper we present the general relationship between online and offline channels in providing everyday services in 2 selected neighbourhoods in Poland. Since it is quite easy to quantify the process of conversion from offline to online services, it is much harder to predict the future trends in this field. Therefore we seek to answer the following research questions: what is the potential for conversion of traditional, everyday services offered in residential areas into e-services?; how can be the potential be measured?; what are the differences between urban and suburban neighbourhoods in this field?

In order to answer those issues we start with a short description of the current developments in the service sector. Then we outline the main characteristics of the online and offline channels for distributing urban services and arrive at particular measures of potential for conversion. Those theoretical considerations are followed by empirical research from two Polish neighbourhoods: one urban (Pereca square in Wrocław) and one suburban (Market Square in Siechnice). The two case studies are used to formulate some hypotheses about future directions in local service markets. The results of the study offer also a good starting point for further research in other settlement contexts

## Service Sector in Urban Areas: What We Know and What We Don't

### *Servicisation and its Impact on Urban Development*

The term 'service' can be defined as a process of providing particular material or non-material goods to the customers (see Kachniarz, 2012). The range and diversity of services offered in a given territory changes over time and the dynamics of this process depend on several factors:

- general economic factors (national income, effectiveness in production sector, market balance, public policy);
- demand factors (users' needs and their structure, the affluence of clients, prices);
- supply factors (availability of services, competences of service staff, conditions for service provision, development of online channels);
- social factors (lifestyle, free time consumption, demographic situation) (see Flejterski et al., 2005).

Probably the best known theory that describes the location of service sectors is W. Christaller's originating in 1930's southern Germany. Christaller points that there is a services' hierarchy in urban structures. Based on the medieval towns localisation, he assumes that they create a hexagonal system with the biggest unit in the middle, some medium-sized cities around the centre and the highest quantity of the smallest units surrounding all bigger ones. Consequently, there are services of different orders, ranging from low-order ones through intermediate ones to high-order ones. Clients will only travel a short distance to access low-order services: this is because they are used frequently, the services offered are of relatively low value and require little skill to produce (there can thus be many suppliers). Clients will potentially travel longer distances in order to access intermediate services: they are used less frequently and are of higher value. Finally, very long distances will be considered in order to have access to the high-order services that are very specialised and used sporadically by clients (Shearmur, 2010).

This classification of services can be translated into a spatial logic: banal services are located relatively homogeneously across space, intermediate services are concentrated in more central areas covering wider geographic areas (in order to include enough clients in the area) and high-order services tend to concentrate in one central place (a large city) which offers maximum accessibility to all potential clients. Thus cities provide goods and services of various levels to their hinterlands and thus become distribution centres for wider communities. The centrality of goods and services offered in a city defines its position in the hierarchy of settlements and allocates an appropriate market area to it. The centres of lower level offer basic goods and services whereas the centres of higher level offer both basic and specialised goods and services.

Since the mid-20th century we have been witnessing the growing role of services in economy and in social life all over the world. The so-called servicisation process is particularly visible in urban areas where traditional manufacturing functions are replaced by more and more specialised services (both for the citizens and for businesses).

Simultaneously, the idea that land-uses cluster around central places is now considerably more complex than in the cities of the industrial era and before. The economic relations between the central hub and its immediate hinterland are weakened (or even broken) and replaced with the ties with other metropolises competing in a global scale and exchanging signs (information, symbols, images) and social subjects (financiers, tourists) over ever greater distances and at ever greater speeds (Lash & Urry 1994, Frysztacki, 1997). As a result, the hierarchical structure of central places is being ousted by a "space of flows" with nodes in global cities (Castells, 1998).

Moreover, the interactions with and within urban centres become more and more virtual. Populations no longer need to visit them to engage, and consequently the activities and land uses that define them become essentially footloose. Space and distance are now so confounding to this process, and these activities so globally structured, that we are unable to explain location in the definite way we were able to in the past (Batty, 2014).

### *Suburbanisation and Urban Shrinkage*

Due to the fragmentation of housing (suburbanization, urban sprawl) the Christallerian model of service centres described above is hardly applicable in today's urban areas. "Because of the slow development of social infrastructure and services in the suburbs, and also because of the lack of jobs in those areas, the residents are forced to work and satisfy their needs in urban cores (centres). This makes them permanent commuters endlessly travelling between home and central urban areas" (*Koncepcja...* 2012, p. 76). The disperse suburbs bear particular tasks for urban

planning: it is necessary to create public spaces in order to integrate complementary residential and service functions and to reduce the demand for transport.

Simultaneously we are witnessing the decrease of population in many well-established cities. Ageing communities with low fertility rates, suburbanisation and limited inward migration result in lower incomes to municipality budgets but higher demand for services (in particular healthcare and social care). Therefore the shrinking cities phenomenon requires a new approach in managing urban space, aiming at optimisation of services' and infrastructures' spatial distribution. A shift from 'planning for growth' to 'planning for shrinkage' is a must. It may include various actions adapting urban space to the decreasing number of residents, such as conversion of buildings' functions, attracting new clients, cooperation with surrounding territorial units, introducing social economy (Schlappa, 2013; Adamski, 2013).

And for both suburbanisation and urban shrinkage online services seem to bring a reasonable alternative, enabling easy access to (at least some of) the services for citizens and thus improving the quality of life. In the subsequent section we will outline the main characteristics of online and offline channels in service sector.

## **Online and Offline Channels for Urban Services**

### *Two Approaches to ICT Development in Urban Studies*

Rapid structural changes in services sector, including conversion from offline to online channels, are ambivalently referred in the literature. Some authors claim that interactions with and within cities become more and more virtual, and that urban activities and land-uses become essentially footloose. According to this view the future of urban areas is uncertain because we are unable to explain and plan location in the definite way we were able to in the past (Batty, 2014). Other authors suggest that agglomeration effects are unthreatened as the growing usage of the ICT leads to an increased need for spatial proximity which facilitates face-to-face contact, enhances information exchange and learning. Hence urban areas provide certain unbeatable localisation values for innovation and growth (McCann, 2003; Shearmur, 2010).

This research contributes to this debate by linking those contradictory perspectives on the ground of local urban planning. It adopts a balanced approach saying that due to telematic revolution contemporary urban geography contains both a dynamic of dispersal and of centralization (Sassen 2005).

### *Conversion, Hybridization and their Consequences*

As we have mentioned above, the material (on-site) forms of providing services are now complemented by virtual (remote) forms. Depending on the relationship between offline and online channels this process is referred as conversion (when the whole facility is transferred to the Internet) or hybridization (when some components of a facility are offered online but others remain available offline).

This lively and rapid process brings some new, sometimes confusing vocabulary (online services, e-services, digital services, virtual services, smart services). In order to clarify this terminology in this paper we examine online services in general, defined as all the activities of doing work for someone using remote technologies. In particular we focus on services at the

neighbourhood level, addressed to local communities, satisfying common, everyday needs of residents.

The potential of a particular supplier to become a multi-channel retailer depends on various relationships between online and offline markets. In order to develop the optimal mix of online and offline channels service providers must determine which components of their products will be delivered better face-to-face and which via the Internet (omnichannel commerce) (Levin et al., 2005; Szulkowski 2016).

In multi-channel (hybrid) services delivery is performed simultaneously through conventional and technology-enabled environments, each of which is complementary and non-interchangeable. Generally in a service format, in which interpersonal and computer-mediated services coexist, there is a positive influence of e-service quality on in-person service quality (Wang et al., 2016).

Consumers' preferences for online and offline services differ for different products at different stages of the service provision process. "High-touch" products are those that the consumer requires the ability to touch or inspect at each stage of the shopping experience (e.g. clothing). In contrast, "low-touch" products are those that are standardized and do not require inspection to evaluate quality before buying (e.g. airline tickets) (Lynch, Kent, and Srinivasan, 2001). Other products may fall at different points on this continuum.

The recent exponential growth in online shopping is a good reference point for outlining the advantages and disadvantages of online services as compared to offline facilities. Among the advantages are rapid and extensive display of information, and ease of comparison between the attributes of different brands. Consumers see online shopping sources as better for shopping quickly and having a large number of selections. Consumers believe that it is quicker to shop online than it is to visit a physical retailer and that they have access to more products with a greater range of features online. In addition, online shopping is perceived to be the source for the best prices (Levin et al., 2003).

On the other hand, lack of personal service, inability to inspect or handle the product, and concern about delivery and exchange processes including giving out credit card numbers over the Internet have been perceived as disadvantages. Therefore offline shopping sources rated higher for enjoying the shopping experience, being able to see-touch-handle the product, personal service, no-hassle exchange, and receiving speedy delivery. This emphasizes the importance of the physical aspects of the shopping experience and the strengths of offline retailers in providing these services (Levin et al., 2003).

Finally we need to consider the anonymization of online transactions. The Internet clients have no direct face-to-face contact with the service providers, but at the same time the contents of services are increasingly personalised, aiming at offering dedicated, unique, comprehensive and complex products for particular citizens according to their needs and preferences (Plesko & Świdorski, 2015). Such approach gives a new perspective for urban planning and announces a shift from the massive, collective thinking about urban functions towards an individualised response to specific demands and preferences (Liu et al., 2015).

### *Apparent Online-Offline Dichotomy*

Despite the differences described above, paradoxically selling and purchasing services online does not really differ from what we have known for ages. First, it fully complies with the 'least effort principle' described above: online channels reduce the cost and time necessary for

using certain services. Second, just like in performing traditional services, the main goal remains the same: reaching the optimal relationship between the price and the quality, providing clients' satisfaction and retaining her/his loyalty to the service supplier (Schmidt, 2015).

As a conclusion we may note that the growing number of multi-channel (hybrid) services will continue to change both the online and offline urban environments, as companies move to provide customers with the ultimate shopping experience (Levin et al., 2003). It may thus be increasingly necessary to think in terms of 'service components', some of which may indeed be footloose while others continue to meet Christallerian criteria (Shearmur, 2010).

### *Access to the Internet and the Patterns of Using Online Services*

The key condition of using online services is the access to appropriate technologies. In Europe personal computers (PCs) and the Internet have become really common since the beginning of the 21st century, when the electronic devices got smaller and more affordable for average users. For example in Poland in 2003 only 34% of households declared to have a computer and only 17% had access to the Internet. Now about two thirds of adults have their own PC and spent more and more time surfing the world-wide-web. The recent years brought another innovative turn in this field: mobile devices and mobile Internet access have become a new standard in everyday human communication (Batorski, 2015).

It seems that there are two general patterns of using the web. To the first group of users the Internet is an instrument supporting their work, school, shopping and creative activities. For the others it is mainly a mean of entertainment (Batorski, 2015). Shopping online becomes more and more popular among the more 'instrumented' users, however we are also witnessing a growing role of social media as a communication channel that enables the development and nurturing of brand-consumer relationships as well as a strategic means of mitigating consumer perceptions of risk and building mutual trust (Mills & Plangger, 2015).

Let us now focus on buying food as an symptomatic example of wider offline-online tensions, potentially affecting the common range of services offered in urban neighbourhoods. This segment is characterised by relatively low online conversion indicators (compared for example to clothes, books or electronics) which means that it is still mostly realised by traditional offline channels. In Poland in 2014 only 12% of online customers bought food online (Plesko & Świdorski, 2015). It seems however, that food still has a big potential for growth, for example by local providers distributing fresh food on a regional scale. As R. Shearmur (2010, p. 46) notes, "even groceries can now be ordered online: the local grocer no longer needs to be local!". This observation matches a more general trend and affects the everyday customs of urban residents.

### **How to Measure the Potential for Conversion?**

Potential for conversion is an abstract term that needs to be clarified and quantified. Operationalisation of research should take into account several assumptions and stipulations.

1) The potential for conversion should be considered in two dimensions: supply and demand. Supply on the local market of services is represented by service providers who offer particular products or processes to their clients. Demand is about the customers (mainly



residents), their needs, preferences and lifestyle. In this study we take into account both of those dimensions.

2) The second precondition is that quantification of offline-online flows in the service sector can be approached from two perspectives: i) the range and quality of services offered and ii) the number of entities involved in the local market. In this paper we focus on the second perspective.

3) The traditional offline local service sector is a diverse collection of various types of services (public and private, common and specialised). Some of them are naturally predisposed to offer some of their products online (e.g. shops, banks, restaurants) whereas others are not able to do that (e.g. kindergartens, haircutters). This issue should be addressed in further methodological discussion and has not been raised in this study.

4) Proper analysis of potential for conversion should include both pure online and offline service providers. It may occur that the existing offline sellers are those who offer the services that simply cannot be satisfied online. However, in this paper we focus only on the offline environment, bearing in mind that it is only a part of the situation on the local services market.

5) The fifth assumption is about the availability and usage of the Internet. Each location and each neighbourhood has particular limitations in providing appropriate access to the network that should be defined and taken into account. However, in order to make the undertaken task feasible we assumed that the usage of the Internet (both in terms of human skills and technical infrastructures) is equally distributed among residents and service providers. Thus any fluctuations nor differences in this field do not actually affect the research results.

Bearing in mind the stipulations listed above the potential for conversion (P) can be described as the relationship (quotient) of the number of entities who do not use Internet for shopping or selling services ( $N_{\text{non-users}}$ ) and the number of those who do it ( $N_{\text{users}}$ ):

$$P = N_{\text{non-users}} / N_{\text{users}}$$

The potential is thus counter-proportional to the percentage of entities active online. In other words, if 100% of people in a particular area use the web for shopping and servicing, then the potential for conversion is null.

## **Materials and methods**

### *Theoretical Research Framework*

This study adopts a conceptual and methodological framework for offline-online research presented recently by Damurski et al. (2018). One of its components is the relationship between the supply and demand, including local social, spatial and economic contexts.

### *Research Sample*

Bearing in mind the diverse dynamics of urban development in Poland, the research refers to two typical forms of urban settlement: a neighbourhood in a big city and a suburban neighbourhood. The first one is Pereca Square in Wroclaw – a well-established local service centre in a typically urban pre-war neighbourhood with various services (including discount supermarket, schools, post office, pharmacy, café, bank, library, church), with very good access

to public transport, clear public spaces system (but dominated by cars). Area: ca 12 hectares. The second example is Rynek in Siechnice – a newly built (2014-2017) market square with surrounding office blocks (municipality office, post office) and blocks of flats with some services in the ground floor; single family housing around the local service centre; poor or just starting service sector (including street market open Tuesdays, Thursdays and Saturdays, bakery, convenience shop 7-23, bank, café, kindergarten, church), with limited access to public transport but very clear public spaces system for pedestrians. Area: ca 5 hectares.

The selected neighbourhoods are similar and comparable in terms of scale and functionality, but differ in terms of settlement contexts. Wrocław is a big city with an advanced structure of service nodes of various kinds and various markets whereas Siechnice is a typical suburban settlement, strongly dependent on the core city in its functional profile. Thus Pereca Square is prone to competition from surrounding areas (including traditional open-air markets, supermarkets and other concentrations of services) whereas Rynek plays the role of a local service that is unthreatened due to the lack of real alternative in Siechnice (the closest competitive settlement is Wrocław).

Such a sample is not statistically random but offers a deliberative selection of locations representing different types of urbanized areas. This selective approach does not allow generalization and therefore the research results should be treated with appropriate caution.

### *Research Techniques*

In this paper we present the findings from a social survey conducted in May, June and July 2017 in the two locations described above. The research used interviews with questionnaire applied in 2 groups: customers and providers of services. The total number of respondents was 278 customers and 74 service providers (see Table 1 for details).

**Table 1.** *Distribution of Respondents who took part in the survey in 2017*

<b>Group of respondents</b>	<b>Wrocław, Pereca Square</b>	<b>Siechnice, Rynek</b>
customers	207	71
service providers	58	16

The questionnaire included 17 questions and was distributed in 2 ways:

- as a street interview conducted by qualified interviewers among people present in the local service centre;
- as a questionnaire for personal filling handed to respondents (both residents living near the local service centre and service providers settled in the local service centre).

### **Research Findings: Potential for Conversion**

The dichotomy between offline and online services has been addressed by one simple question about the respondents' habits and practices in using services. The residents were asked: "Do you personally shop online?" [Czy zdarza się P. robić osobiście zakupy przez Internet?]. Service providers were asked a question „Do you offer your products and services online?” [Czy

oferuje Pani/Pan sprzedaż towarów i usług przez Internet?]. Those questions were followed by some statistical information on the respondents.

Of the 278 surveyed customers 174 (62,6%) used Internet for shopping. This share was significantly higher in the suburban area than in the urban area (see Table 2 for details). Thus the potential for conversion (defined in the previous section) shows that there still is a visible capacity for further growth of demand for online shops and services, in particular in well-established urban areas. Among the service providers the results are slightly different, proving that the potential for conversion is much higher in suburban area than in well-established urban area, where more respondents (18 of 74, i.e. 24,3%) already use Internet in their market activity.

**Table 2. Research Results: Potential for Offline-online Conversion in the Studied Neighbourhoods**

Group of respondents	Wrocław, Pereca Square			Siechnice, Rynek		
	<i>non-users</i>	<i>users</i>	<i>potential</i>	<i>non-users</i>	<i>users</i>	<i>potential</i>
customers	86 (41,0%)	121 (57,6%)	0,7	18 (25,4%)	53 (74,6%)	0,3
service providers	43 (74,1%)	15 (25,9%)	2,9	13 (81,3%)	3 (18,8%)	4,3

But how can those two potentials be linked with each other? How can we generate the synergy effect where both the customers and service providers take advantage of real and virtual channels to satisfy their needs? How can be the market of services be effectively developed in an ‘online+offline’ manner? It seems that the answer is quite simple: **locally**.

Locality is a feature that links the customers and service suppliers in spatial, social and mental terms. This research has shown the relationship and proportions between “bricks-and-mortar” facilities and virtual services in selected neighbourhoods in Poland. Their co-existence in particular geographical settings provides a natural environment for mutual reinforcement of online and offline activity. Whereas in the global scale conversion is a common and well-described process, the local online market still needs to be discovered. Thus we strive for creating a combined ‘online+offline’ local service centre (see Damurski et. al. 2018) where the two channels are used to raise the quality of life in local urban and suburban communities. Within this dual model we mix the pure conversion of traditionally offline services to virtual ones with hybridization processes, embedding the two channels in particular territorial contexts.

### Limitations of the Study

The presented study on online-offline flows in urban and suburban neighbourhoods has particular limitations. First, it is based on scarce research sample and cannot be generalised for the whole populations of customers and service providers. It is also territorially restricted to 2 examples from Poland which does not enable wider, universal interpretation of results. Second, the methods used do not offer any qualitative counterweight to the quantitative results on potential for conversion. Even if many binding assumptions and stipulations were made, not all of them were adopted in the study. Finally, the presented results have only a static character and do not convey any information about the dynamics of conversion processes. However, despite those weaknesses the obtained research findings offer a good starting point for further academic discussion and can be enhanced and revised in other territorial settings.

## Conclusions

This study contributes to the knowledge on urbanisation processes by linking 3 crucial aspects of service sector development: economy (supply & demand), distribution channels (real & virtual) and territoriality (urban & suburban contexts). Although the methods employed are very simple and refer to scarce empirical evidence, they allow to draw several theses about future urban development.

The most important conclusion is about the structure of the services market. The customers are more advanced in using Internet for shopping and servicing than the local service providers. Probably it is a result of many global or national actors offering various services irrespectively from the local spatial contexts. Almost every product can be shipped or sent by e-mail and the residents in the studied neighbourhoods probably use all the available resources to satisfy their needs. Perhaps this trend may be changed in the future by the growing importance of the local approach in economy and by promoting ecological, neighbourhood lifestyle.

The second conclusion is about the differences between urban and suburban settings. In Siechnice the lower potential for conversion among customers and higher among service providers may be partly explained by the peripherality effects. The suburban reality requires more online activity among customers, who are forced to manage their everyday duties remotely due to insufficient accessibility to services. Simultaneously the service providers use their competitive position in a peripheral area and do not introduce the online channels as they can manage offline quite well.

Finally, the relatively high potential for conversion among service providers bears particular consequences to urban planning. Whereas it is hard to predict to which extent the potential will be realised and how the proportions between conversion, hybridization and traditional offline channels will look like in the future, planners will have to take into account those processes. The pure online conversion will definitely affect the well-established urban structures at all scales, but hybridisation may strengthen the territorial and local values of everyday urban life. However, we cannot predict the dynamics of those processes yet.

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