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# REVERSE LOGISTICS AS SUSTAINABLE TOOL IN TOURISM INDUSTRY: SCOPE AND MOTIVATION

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**AABSTRACT:** The paper deals with activities labeled as reverse logistics (RL). It is generally accepted that RL plays an important part in greening of companies, because the aim of RL is to retrieve value from reverse flows (such as products scraps, production waste, packaging, returned products, etc.) that would otherwise be lost. RL covers activities like recycling, remanufacturing, or repairing to close the loop of material flows in a supply chain. Hundreds of papers were published on RL, but just a tiny quantity of them focused on service industries. What is important is that the largely intangible character of service products in tourism calls for modification of concepts used in RL, as a majority of its concepts and models were suggested within manufacturing context. Thus, the paper's aim is to analyze the specifics of RL in the tourism industry. It focuses on the question of what the reverse flows in tourism consists of – what are their tangible as well as intangible elements. In the second step it discusses the factors and the motives specific for tourism that shape RL in this industry. The presented findings are a part of an exploratory-descriptive research focusing on the approach of companies to RL in Czech Republic and are based on collected data for 87 firms operating in tourism and travel-related services (hotels, restaurants, travel agencies). **Keywords:** reverse logistics, reverse flows, sustainability, exploratory research

**RESUMEN:** El artículo aborda las atividades intituladas de logística inversa (LI). Es de aceptación generalizada que la LI se basa en un rollo importante en la manera de ser ecológico de las empresas, porque su objetivo es recuperar el valor de los flujos de sentido inverso (tales como restos de productos, residuos de producción, embalaje, productos devueltos, etc) que, de otro modo, sería perdido. La LI engloba actividades de reciclaje, remanufactura, o reparación para cerrar el ciclo de flujos de materiales en una cadena de aprovisionamiento. Fueron publicados centenas de artículos sobre LI, pero solamente una pequeña parte enfoca las industrias de servicios. Lo que es importante es que el carácter extensamente intangible de los servicios turísticos requiere un cambio de los conceptos usados en LI, una vez que la mayoría de sus conceptos y modelos fueron propuestos en un contexto de producción/manufactura. Así siendo, el objetivo del artículo es analizar las especificaciones de la LI en la industria del turismo, se enfoca en la cuestión de lo que consisten los flujos inversos en el turismo – los cuales son sus elementos tangibles e intangibles. El segundo paso es discutir los factores y motivos específicos para el turismo que forman la LI en esta industria. Los resultados presentados hacen parte de un estudio exploratorio-descriptivo que enfoca el abordaje de empresas de LI en la República Checa y se basa en datos recogidos en 87 compañías que funcionan en el turismo y servicios relacionados con viajes (hoteles, restaurantes, agencias de viajes). **Palabras clave:** logística inversa, flujos inversos/bidireccionales, sustentabilidad, estudio exploratorio.

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**RESUMO:** O artigo aborda as atividades intituladas de logística inversa (LI). É de aceitação generalizada que a LI desempenha um papel importante na ecologização das empresas, porque o seu objetivo é recuperar o valor dos fluxos de sentido inverso (tais como restos de produtos, desperdícios de produção, embalamento, produtos devolvidos, etc) que, de outro modo, seria perdido. A LI engloba atividades de reciclagem, refabricação, ou reparação para fechar o ciclo de fluxos de materiais numa cadeia de aprovisionamento. Foram publicados centenas de artigos sobre LI, mas apenas uma pequena parte foca as indústrias de serviços. O que é importante é que o caráter largamente intangível dos serviços turísticos requer uma modificação dos conceitos usados em LI, uma vez que a maioria dos seus conceitos e modelos foram propostos num contexto de produção/manufatura. Assim, o objetivo do artigo é analisar as especificações da LI na indústria do turismo, focando-se na questão do que consistem os fluxos inversos no turismo – quais são os seus elementos tangíveis e intangíveis. O segundo passo é discutir os fatores e motivos específicos para o turismo que moldam a LI nesta indústria. Os resultados apresentados fazem parte de um estudo exploratório-descritivo que foca a abordagem de empresas de LI na República Checa e baseia-se em dados recolhidos em 87 companhias que operam no turismo e serviços relacionados com viagens (hotéis, restaurantes, agências de viagens). **Palavras-chave:** logística inversa, fluxos inversos/bidirecionais, sustentabilidade, estudo exploratório.

## INTRODUCTION

The paper explores a specific part of companies' activities labeled as reverse logistics (RL). The main aim of RL is to retrieve value from so-called reverse flows such as returned products, products scraps, production waste, packaging, etc. In certain companies or even industries the effective reprocessing of reverse flows improves corporate profitability considerably: For example – recycling of reverse flows might lower the cost or might bring additional revenues (de Brito & Dekker, 2002). RL might generate a new competitive advantage too – for example, effective RL in retail enables liberal return policies (which mean extra value for customers) (Rogers, D.S. & Tibben-Lembke R., 1998). On top of that, RL is generally accepted as an instrument for sustainable development due to its ambition to minimize the extent of waste "generated" in supply chains (this is sometimes referred to as closed-loop supply chain management) (Sarkis, 2012).

The volume and importance of reverse flows and RL has been constantly growing in many industries (de Brito, Dekker, & Flapper, 2003), which also increases the need for their effective management in terms of regaining values that these flows contain. Therefore it is important to find answers to complex questions of why, how, when, and where reverse flows occur, how they are

managed within enterprises (or among enterprises), why the rate of interest in this issue is different in companies, and what are the manifestations of effective or ineffective reverse flows management.

Over the period of intense interest in the issue of reverse flows and their management (which covers approximately the last 10 to 15 years), a knowledge base has been created especially abroad, based on theoretical concepts and empirical studies.

The problem with RL is that for the majority of organizations reverse flows are not their primary business and due to specificities, potential commitment is often random; thus, reverse flows are rarely a top priority and are often managed ad hoc. So, it is difficult to take advantage of reverse flows; an advantage that is documented in numerous empirical studies: e.g., reverse logistics has great potential to improve the financial performance of organizations (Doherty, 1996) or to gain value from processes related to management of reverse flows.

Although the above mentioned problems can be examined in every industry, services need special attention, because it is generally true here that the material/tangible flows (including the reverse ones) do not have, as significant extent, form and often even impact on the activities of companies providing services as they do in manufacturing companies . The (general) theories and models of logistics itself deal with logistics in services only marginally. However, pressure on the operational efficiency of services (and in some cases the pressure on minimizing their impact on the environment) raises the need to focus on reverse flows even in services (see, e.g., the development of "green" hotels), or some service sectors, respectively.

In this respect, it is useful to analyze the system of reverse flows within services: So, the basic questions to understand the reverse flows relate to Why, What, How, Who, Where, and When. Using the primary exploratory research, the objective of this paper is to find answers of What, Why, and, to the certain extent, also to How. In other words, the aim is to analyze the scope of RL in the tourism industry and to elaborate on motives explaining why businesses in tourism take (or don't take) part in RL-activities.

## The variety of reverse flows

The reverse flows were categorized by many authors; their typologies and taxonomies (e.g., De Brito, 2003; Fernández, 2004) reflect the heterogeneity of the material flow that needs to be reprocessed in RL-systems. Klapalová collected a detailed list of different kinds of reverse flows that were discussed in scientific literature (in theoretical papers, in presented empirical surveys and case studies) (Škapa & Klapalová, 2011), which shows that reverse flows can be "generated" in each step of a production process, or more generally in each part of value chain as well as in a process of consumption and after consumption. A comprehensive list of reverse flows are presented in Table 1.

**Table 1: The variety of tangible reverse flows**

| Reverse flows | |
|---|---|
| Raw-materials surplus | Returned products (for reasons such as return policy and warranty) |
| Maintenance, repair, operating supplies (MRO) surplus | Returning a short or long-term leased product Returning a rented product |
| Work-In-process Inventory (WIP) surplus – parts, components, modules | Product return for overdue loan (distraint) |
| By-products | Commercial returns |
| Production Leftovers | Stock adjustments |
| Hazardous material | Recalls |
| Outdated products and machines | Return Products for Service (repair…) |
| Production scraps | Packaging (distribution and commercial) |
| End-of-use products | Returnable containers |
| End-of-life products | Return of faulty delivery |
| | Product returns in "new for old" campaign |

*Source: Škapa & Klapalová (2011), adapted*

The discussion about intangible reverse flows is rare. The majority of authors don't list any kind of intangible reverse flows in their typologies or definitions; some of them define explicitly reverse flows as tangible only. This opens a room for more precise definitions. The intangible reverse flows (Klapalová, 2013) would likely consist of information, finance, and in broader view of energy, however it is important to state what kind of information should be classified as reverse flows: It makes no sense to introduce a new label (intangible reverse flows) for concepts

or constructs that already exist. Thus, one view on intangible reverse flows could follow the logic that it is the information and financial flow associated with return (in case of tangible products) and complaints (in services) episodes, like for example feedback from complaining customers.

This is a starting point for research question (RQ) 1:

What do reverse flows consist of in tourism; what are the typical tangible and intangible reverse flows in this industry?

**Motivation for reverse logistics**

Despite the fact that RL is one of the instruments for sustainability, the companies don't develop RL systems because of environmental motives only: Companies see the RL mainly as an instrument that brings economic benefits of different kinds. For example, Jayaraman & Luo (2007) distinguished tangible and intangible competitive advantages of RL, which highlights the existence of economic, non-financial gains that effective RL can generate (see Table 2).

**Table 2: Benefits of RL**

| Tangible Competitive Advantages | Intangible Competitive Advantages |
|---|---|
| Recovery of value from used products provides a good return on investments and new markets for returned goods. | Philanthropy and goodwill returns can significantly improve a corporate image. |
| Offering "green" products can help companies retain environmentally conscious customers and employees and producing greener products can lower future liabilities, insurance rates and customer disposal costs. | Feedback information from product returns can provide multiple benefits including feedback on magnitude and uncertainty of return flows and potential markets for various recovery operations. |
| Returned goods can provide detailed insights about merchandising effectiveness, product performance, consumer expectations and product line profitability. | Provides retailers and suppliers opportunity to capture the wealth of information that can be obtained from a returned product. |
| Policies such as extended return period, return location choice, paid shipping and rapid refunds have all increased growth in both online and offline shopping. | Provides opportunity to gauge customer reaction, opinion and satisfaction regarding the physical attributes of returned products. |

*Source: Jayaraman & Luo, 2007.*

Thus, it is more realistic to see the companies' interest in sustainability programs (including RL) from the point of view of the economic contribution of such programs. Empirical research confirms that in the field of environmental protection, the companies concentrate on fulfilling legislative requirements, namely on reprocessing of reverse flows and take-back obligation set by the governments. In this light, RL is a defensive instrument applied by companies to grab the low-hanging fruit (Boks & Komoto, 2007).

The benefits depend on the way the reverse flows are reprocessed: Technically, the reprocessing of tangible reverse flows has many forms that differ in the extent of recaptured value and level of achieved environmental benefits. Land filling or incineration on one hand and recycling or remanufacturing on the other, both represent different technological ways of how to recapture remaining value in reverse flows and each method implies different logistical complexity (see Recovery option pyramid in Figure 1 – recovery options at the top of the pyramid are able to recapture substantially more value than the options at the bottom). Generally, it is remanufacturing, parts retrieval and repair that require more advanced RL. The choice of recovery option depends on reverse flows' technical characteristics and economic rationale. As a result of this, RL activities are industry specific (de Brito & Dekker 2002; Marien 1998).

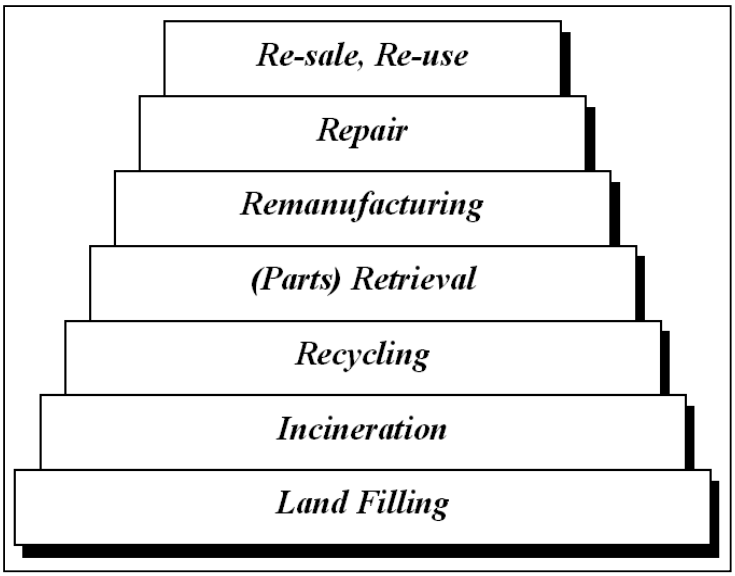


**Figure 1: Recovery option pyramid**
*Source: de Britto & Dekker(2002), modified*

To understand the RL-practices in this particular industry, it is necessary to analyze the specifics of tourism and the motives (reasons of existence) of reverse flows. Thus, the RQ 2 is defined as follows:

RQ 2: What are the tourism-specific factors that shape the reverse logistics of companies operating in tourism?

**Specifics of logistics in service industries**

RL in companies providing services (including tourism) is blank spot with very limited theoretical as well as empirical knowledge; so, it is necessary to combine management and marketing service theories and models with logistics theory (including RL).

First, logistics itself is defined as service. According to the widely used textbook by Lambert, Stock, & Ellram (1998) the output of logistics is the customer service, in other words the task of logistics is to provide service. Lambert's three-phase construct (see Figure 2) explains the value added by logistics during the business transaction (pre-, post-, and transaction phase). That is, the same value that marketing theory relates mainly to the place in the marketing mix. However, the definition of customer service relates to selling of a tangible product; for service industry the model needs certain adjustments (because the model mentions the inventory several times – a category that doesn't fit to service environment).

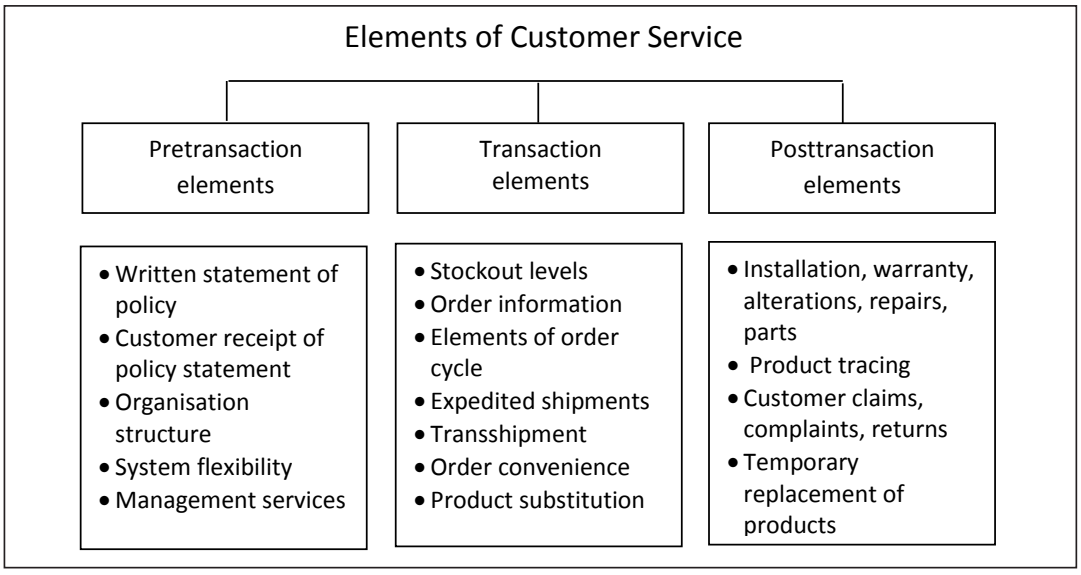


**Figure 2: Three elements of customer service**
*Source: Lambert, Stock & Ellram (1998)*

Speaking about services raises a problem with the definition: There is no strict line between the manufacturing and service companies. Tangible products are often sold with some service component (e.g., warranty, training, preventive inspections etc. – see layers of a product, De Pelsmacker et al., 2007) and vice versa – services are accompanied by "material" products (e.g., textbooks in language school). Further, the products that are tangible in its core are becoming more and more service-like products (Grönroos, 2006).

The "SHIP"-acronym summarizes the specifics of services: It is simultaneity, heterogeneity, intangibility, perishability that distinguishes services from manufacturing (Iacobucci, 2010):

• Simultaneity refers to inseparability of production and consumption services, to a certain level at least

• Heterogeneity of output as the result of higher impact of humans on final output (staff as well as customer, who is a co-producer)

• Intangibility of output generates higher risks to the customer, as intangible product are difficult to evaluate in terms of their quality.

• Perishability denotes the fact that services cannot generally be stored.

Based on the above characteristics Russell & Taylor (2005, p. 207) conclude that services are typically provided in a decentralized way and are thus geographically dispersed. Marketing theory reflects the specifics of services by employing additional "Ps" to marketing mix – people, process, physical evidence (Zeithaml, Bitner, & Gremler, 2010). All the mentioned characteristics are valid generally and at the same time there are many particular services disconfirming some of these general characteristics.

This leads to another conclusion: Services are not a homogenous group of businesses and from logistics perspective the share of tangible part in offered product is what that matters. Of course there are other operations characteristics relevant for logistics like distinction between:

• high-touch / high-tech services,
• discretely / continuously rendered (Grönroos, 2006),
• professional service / service shop / mass service (Slack, Chambers, & Johnston, 2007).

## METHODS

### Research design and research sample

Both research questions are of exploratory nature, so the research design reflects this fact: The data were collected through structured interviews with representatives of approx. 270 companies operating on Czech market. Because of the focus on tourism industry, only 188 answers were employed in further analysis – 87 firms operating in tourism and 101 manufacturers that are compared with the first group to identify the differences (to answer RQ 2). The remaining 82 respondents represented service companies of other branches (banks, retail, insurance etc.), so they were left out for the following analyses. The manufacturing group is mixed of businesses operating in mechanical engineering, chemical, and construction industry. The detailed view on sample structure (see Table 3) reveals that the majority of companies consist of small enterprises; this claim is more evident in the group of services.

**Table 3: Structure of companies covered in the sample (n=188)**

| | Small | Medium-sized | Large | N |
|---|---|---|---|---|
| Manufacturing | 45.0% | 29.0% | 26.0% | 101 |
| Tourism industry | 91.0% | 8.0% | 1.0% | 87 |

The questions for the interviews were adopted from research papers of de Britto and Dekker (2002), De Britto (2003); Gecker & Vigoroso (2006). The majority of presented findings are based on subjective statements of informants due to the fact that many of our questions asked for the data that companies don't measure, collect and reprocess.

The interviews were conducted in two rounds (in the beginning and at the end of 2012); however, the $X^2$ test didn't detect

any potential problem (i.e., differences in data from first and second round). Strictly speaking, for six out of approx. 150 coded variables, the difference was statistically significant, however this could be a natural result of the method employed – the result of the statistical testing that accepts certain probability of Type I error. Out of these six variables, only two of them were used in this paper that utilizes only a part of the dataset.

The majority of questions were constructed as close-ended question (dichotomous and scale questions); therefore, the analytical part relies on the application of frequency analysis and Mann-Whitney U test (calculated in SPSS v.21). The open-ended questions were reprocessed by means of the content analysis (and frequency count).

**Results related to RQ 1**

The questions concerning RQ 1 (What do reverse flows consist of in tourism; what are the typical tangible and intangible reverse flows in this industry?) were designed as open-ended. In the beginning, the respondents were introduced to the topic of reverse flows and RL – the interviewee explained both terms, only after that the following questions were asked:

• Please tell us what the reverse flows in your company consist of; name as many examples as possible for a) tangible and b) intangible reverse flows.

The answers to both questions were very heterogeneous in terms of their length, attention to details, and even of their relevance. This is, however, a natural outcome of open-ended questions.

The tangible reverse flows were described by 76 respondents of tourism industry (out of 87 interviewed). In the first step, their statements were coded into 20 categories. As more categories described the same phenomena – the difference was in the level of generality in their answers – in the second step, similar and related categories were grouped together, which resulted in eight broader categories (see Table 4; numbers in brackets specify the frequency of respondents mentioning the particular item).

As the majority of services contain a certain extent of tangible components within provided service (product), it is not surprising that the respondents were able to identify examples of "tangible" reverse flows – in this part, the results show similarities to reverse flows belonging to the manufacturing environment

(see Table 1 for comparison). However, little confusion in some answers was evident; the respondents see complaints and information as tangible – probably because of the medium (paper, in this case) that carries the information. Revenues and profit is a similar case – it can be perceived as tangible, if it is represented by cash. We can assume that only a part of financial transaction is done electronically, thus the logistics of cash is still relevant.

Loyal customers (in a terms of behavioral loyalty; labeled as Customer's return) can't be perceived as an element of reverse flow, as his/her return means a new business transaction. But there is a very specific case of customer's return: a complaining customer. In service environment the customer participates in the production process, better to say it is common that the customer participates in some part of service "production" process; of course, the extent of his participation varies. This feature distinguishes services from manufacturers, who don't typically integrate customers into the production process. This is a clue why complaining customers can be seen as a part of reverse flows in services: His/her presence and participation in return episodes is necessary in some cases, so the reverse logistics needs to integrate him in the recovery processes.

**Table 4: Tangible reverse flows in tourism according to respondents**

| **Broader category** | **Items** |
|---|---|
| Product return/complaint | Return of meals and drinks (23 times)<br>Return of semi-finished products/ingredients (3)<br>Accommodation complaint (6) |
| Waste | Food and drinks remains (15)<br>Packaging (8)<br>Water and sewage (3)<br>Waste (unspecified) (12)<br>Equipment destroyed by customers (3) |
| Re-usable service components | Bedclothes, tablecloths to launder (1) |
| Returnable packaging | Returnable bottles (6) |
| Financial flow | Revenue/profit (13) |
| Customer "return" | Loyal customers (6) |
| Documents | Customers' questionnaire (3)<br>Customers' orders (3)<br>Proof of payment (2)<br>Customers' business cards (1) |
| No tangible return flows | No tangible return flows (3) |

The answers relating the intangible reverse flows were categorized into five broader groups (see Table 5); however, not all of them are actually related to reverse flows: It is apparent that many respondents confused or interchanged the term of reverse flows for feedback. If we apply the logic of intangible reverse flows explained above (i.e., the information and finance related to return and complaint incidents), the following items would be examples of intangible reverse flows in tourism businesses: complaints, complaints about meals, complaints about services, expressed customer's dissatisfaction – voice (provided that it results into service recovery).

**Table 5: Intangible reverse flows in tourism according to respondents**

| **Broader category** | **Items** |
|---|---|
| Information about own performance | Feedback about customer satisfaction (23 times)<br>Expressed customer dissatisfaction – voice (11)<br>Complaints about meals (reclamation) (2)<br>Complaints about services (reclamation) (2)<br>Customer reaction on staff behavior (1)<br>Complaints (12)<br>Surveys (4)<br>Customers' compliments (7)<br>Interviews with customers (1)<br>Benchmarking (1)<br>Customers reviews (3) |
| Service design | Customers' suggestions and recommendations (2)<br>Suggestion for product/service design (6)<br>Suggestions and Complaints Book (2) |
| Customers' relations | New customers gained due to other customers' recommendation (1)<br>Loyal customers (16)<br>Customers' satisfaction (15)<br>New orders from current customers (4)<br>Customers' relations (1) |
| Marketing promotion | Word of mouth (12)<br>Reputation perceived by customers (2)<br>Goodwill (2)<br>References (8)<br>Customers' recommendation to other customers (positive WOM) (2)<br>Marketing activities (1) |
| Other | Energy (1)<br>Money (1) |

The remaining items are both general and unspecific (e.g., energy or money) or relate directly to marketing or management issues with no direct link to return/complaint episodes.

**Results related to RQ 2**

The RQ 2 focuses on the specifics of tourism that (might) affect the reverse flows and RL. The corresponding open-ended question (What are the industry specifics that affect your reverse logistics activities?) was supplemented by two close-end questions that listed the potential reasons of reverse flows' emergence. These reasons were – however – collected from studies conducted in manufacturing setting and were expected to provide further information about service/manufacturing dissimilarities.

Because the answers to open-ended question were heterogeneous and overlapped only rarely, the frequency count was irrelevant and was skipped. Out of the received statements, four groups of factors were created: *customers and demand, operations management, marketing, and human resources* (see Tab. 6).

Several statements (items) described general specifics of the tourism industry with no clear link to RL issues. Therefore, the following text discusses only the items that are relevant for reverse flows and for RL.

In *Customers and demand factors,* it is important to note that the demand in tourisms is affected by macroeconomics 'situation of customers' homelands. Further piece of demand variation is added by the seasonal character of some tourism services. Increase and decrease in demand defines also the extent of reverse flows and the capacity requirements on RL.

What is specific in tourism compared to manufacturing is the fact that reverse flows are generated with short time lag (almost immediately) after production and consumption.

Cultural diversity might affect the service recovery decision. If we take the customer satisfaction as a main goal, the cultural background of customer could be relevant information for the decision of how to recover (e.g., compensate) the provided service – which measures should be applied for a particular problem and for a particular customer. Again, in manufacturing environ-

ment, the recovery options are chosen according to the physical conditions of the returned product and not to the personality of a customer.

**Table 6: Specifics that affect reverse logistics**

| Broader category | Items |
|---|---|
| Customers and demand | Cultural diversity of customers<br>Impact of alcohol on customers<br>Sensitivity on macroeconomics‘ situation<br>Seasonality<br>National culture<br>Importance of quality<br>Weather |
| Operations management | Meals delivered outside the facility<br>Short “best before day”<br>Quality of input<br>Importance of subcontracting<br>No inventory in services<br>Technology<br>Foreign ingredients<br>Supplier selection<br>Environmental disposal of waste<br>Legislation<br>Returnable packaging<br>Service can’t be pre-tested<br>Make to order production |
| Marketing | Aim to increase customers’ loyalty<br>Service quality<br>Information for quality improvement<br>Direct feedback from customers<br>Price<br>Broadening of product offer/assortment |
| Human resources | Approach to customers<br>Language skills<br>Behavior of staff<br>Human factor<br>Ethics and etiquette |

In *Operations management* group, the importance of subcontracting is worth to mention: If a part of the service is provided by third company, coordination in complaint episodes might be

difficult and divergent approach to service recovery by subcontracted company might harm the overall customer satisfaction. Thus, the service level agreement with subcontractor should explicitly define the requirements on the service recovery (analogy to "return policy").

In tourism, *Human resources* play a critical part in the recovery process due to several reasons: First, complaining is stressful for both the customer and staff (Hogreve & Gremler, 2009). Second – in manufacturing, the employee is in contact with customer only in the first part of the return episode and after that the product is recovered (like repair) out of the sight of customer (in different place, at different time). In tourism the contact is longer; it includes all front-office activities. Third, the employees should take the personality (cultural background) of customer into account. So, generally, the RL in tourism requires human resources to be more trained in soft-skills and in cross-cultural communication.

The ambition of the supplementary close-ended question was to provide further knowledge about specifics of the tourism industry; this time, in terms of reasons and motives for reverse flow existence. The question was split into two parts: One inquiring the reasons for the emergence of reverse flows received from customers and the other about the reasons for the emergence of the reverse flows sent to suppliers. The latter one could be labeled as "outgoing reverse flow" and technically – from the point of view of a company-in-focus – such flow is not a reverse one. However, from the whole supply chain perspective, both of them constitute reverse flows.

The most frequent stated reasons in case of received reverse flows are product Goodwill protection, Seasonal variation in demand (see Table 7). The comparison with answers of manufacturers reveals significant differences in the above-mentioned reasons (depicted by bold numbers in Tab. 7); both are more frequent in tourism: Goodwill protection might mean that hotel or restaurant is liberal in accepting service complaints (i.e. they permit a certain extent of reverse flows to be created) because of nega-

tive word-of-mouth threat. Seasonal variation in demand is probably related to capacity overload during the season, which could harm the quality of provided services, which in return increases the extent of reverse flows. On the contrary, Defected products (another statistically different reason) are typical for manufacturers; it is their most common reason.

**Table 7: Reverse flows retrieved from customers**

| Reason of reverse flows emergence | Tourism (n=83) | Manufacturing (n=97) | Mann-Whitney U | Asymp. Sig. (2-tailed) |
|---|---|---|---|---|
| Goodwill protection | 71.10% | 47.40% | 3073 | .001 |
| Seasonal variation in demand | 67.50% | 24.70% | 2305.5 | .000 |
| Customer service policy | 56.60% | 54.60% | 3945.5 | .79 |
| Defected products | 51.80% | 76.30% | 3040 | .001 |
| Environmental policy | 28.90% | 30.90% | 3944.5 | .77 |
| Cost reduction opportunity | 22.90% | 36.10% | 3494.5 | .055 |
| Unsellable products | 20.50% | 8.20% | 3533 | .018 |
| Low-quality of delivery conditions | 19.30% | 24.70% | 3805.5 | .381 |
| Excess inventory | 19.30% | 16.50% | 3913.5 | .627 |
| Character of products | 16.90% | 8.20% | 3678.5 | .079 |
| Legislation | 16.90% | 24.70% | 3708.5 | .198 |

The data for reverse flows sent to suppliers confirm the importance of seasonality in tourism (see Table 8): In this case, the varying demand (Seasonal variation in demand) can complicate purchasing of tangible product components, which results in Excess inventory and Unsellable products – both items can become product returns on condition that such a practice is in line with the return policy of a supplier. The second-most frequent reason, which is also typical for services, is the Quality of delivery condition. This may confirm the idea about difficulties in supplier-relations in services (see Ellram, Tate, & Billington, 2004).

In relation to sustainability, the environmental policy is not a factor that is responsible for reverse flows in tourism, which might suggest that companies don't see RL as a tool to improve their environmental performance.

**Table 8: Reverse flows sent to suppliers**

| Reason of reverse flows emergence | Tourism (n=83) | Manufacturing (n=97) | Mann-Whitney U | Asymp. Sig. (2-tailed) |
|---|---|---|---|---|
| Defected products | 63.90% | 70.10% | 3774 | .375 |
| Low-quality of delivery conditions | 60.20% | 36.10% | 3053 | .001 |
| Cost reduction opportunity | 60.20% | 50.50% | 3634 | .192 |
| Goodwill protection | 56.60% | 41.20% | 3406 | .04 |
| Seasonal variation in demand | 51.80% | 26.80% | 3019 | .001 |
| Excess inventory | 41.00% | 20.60% | 3206.5 | .003 |
| Unsellable products | 33.70% | 14.40% | 3248.5 | .002 |
| Customer service policy | 30.10% | 30.90% | 3993 | .907 |
| Legislation | 27.70% | 28.90% | 3979 | .864 |
| Environmental policy | 22.90% | 35.10% | 3536 | .075 |
| Character of products | 20.50% | 13.40% | 3740.5 | .205 |

## CONCLUSIONS

The contribution of the paper is twofold, as the findings extend both theoretical and empirical knowledge. In terms of theory, the following propositions are suggested: The reverse flows in services include one specific element that the RL has to deal with – it is the complaining customer itself who becomes an active part in RL-processes due to the inseparability assumption; in other words, due the necessity of customer's presence or even his/her cooperation in complaint-recovery process. Next, the reverse flows include intangible elements too: it is the data and information related to service complaint, not a general feedback from customers.

The empirical findings shed more light on RL-issues in tourism: Based on results of tourism-specific factors, the RL in this industry is facing intensive fluctuation of demand (seasonality, weather, macroeconomic conditions etc.) that results in variation of capacity requirements on RL system. The recovery processes are probably more demanding in terms of soft skills as the employees need to understand cultural-specific requirements of customers during complaint incidents. Because subcontracting seems to be common in tourism, a problem can emerge if a subcontracting company, which delivers supporting service, is in di-

rect contact with a complaining customer: In this case, the subcontractor should provide the same service to the complaining customers as the main service provider does, because customers perceive core and supporting services as one (Baltacioglu, Ada, Kaplan, Yurt And & Cem Kaplan, 2007.). Thus, the managerial implication is that the same approach to customer requirements has to be provided regardless on which company the customer is in contact with.

Finally, the frequency of environmental protection issues in our data was rather low, which is an indirect indication that businesses in tourism don't regard RL logistics as a tool for sustainability.

The reliability of the above statements is restrained because of the limitations in the research: The most important one regards the sample's size, which is not fully representative; however this is in harmony with the exploratory nature of the presented research. Second source of distortion relates to the single informant approach – each company was represented by one interviewee only, which opens a room for higher subjectivity of analyzed data.

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