How to Bring IT Home: Developing a Common Terminology to Compare Cases of IS Backsourcing

Completed Research

Benedikt von Bary
TU Dresden
benedikt.von_bary@mailbox.tu-dresden.de

Abstract

While there are many prominent cases for information systems (IS) backsourcing, there is a lack in common terminology for discussing, classifying, and comparing those cases. This paper aims to close this gap by developing a backsourcing terminology and a configuration framework to clearly classify cases of IS backsourcing. Originating from six outsourcing dimensions derived from existing literature, the paper first defines different sourcing forms depending on their respective location and ownership. Afterwards, different backsourcing development paths are introduced based on a change in ownership and/or location. Then, the paper develops a configuration framework based on four dimensions: capability development strategy, external support during transition, previous state of IS organization, and target location. Those dimensions are used to categorize and compare existing backsourcing cases with a consistent terminology.

Keywords
Backsourcing, insourcing, outsourcing, terminology, taxonomy, development paths, case examples

Introduction

A company intending to outsource its information systems (IS) activities, assets, or personnel faces several possible options to design the corresponding outsourcing arrangement. For example, the location of an outsourcing vendor could be in the same country, the same region, or in a different region than the client organization (Fratocchi et al. 2014). Or, a company could either outsource its entire IS operations, or only selected parts of it (Dibbern et al. 2004). This multitude in feasible configurations also increases the complexity when examining possible backsourcing of IS activities. The concept of backsourcing was first defined by Hirschheim and Lacity (1998) as the process of transferring previously outsourced activities, assets, or personnel back in-house to resume ownership and operations.

The field of IS backsourcing is still an emerging research area, and a common terminology to describe corresponding phenomena has not yet been developed. Similar research was performed in adjacent business functions, for example the reshoring of manufacturing or business services (e.g., Albertoni et al. 2017; Wiesmann et al. 2017), however with different terminology or focus points. This paper aims to (1) shed light on the applied terminology until today and (2) to define a clearer terminology to classify and compare backsourcing cases within the field of IS. The introduced backsourcing configuration framework could represent a first suggestion for a theory for analyzing according to Gregor (2006)’s taxonomy of theories, since it describes the ‘what is’ state and helps analyzing situations along specific dimensions. Based on this contribution, future researchers can build on a common understanding and theoretical foundation of the backsourcing phenomenon and thus describe their work in a more consistent manner.

The paper is structured as follows. At first, the paper provides a short introduction into the concept of IS backsourcing. Afterwards, outsourcing dimensions are derived from the existing literature. This results in a description of different sourcing forms, subject to the respective ownership and location. The subsequent section provides an overview of several backsourcing development paths, followed by the introduction of a backsourcing configuration framework to classify and compare different existing backsourcing cases. The final section summarizes key findings and limitations, and discusses avenues for future research.
Introduction into IS Backsourcing

Hirschheim and Lacity (1998) and later Lacity and Willcocks (2000) were the first to define IS backsourcing as the transition of those assets, activities, and skills required to perform IS operations back in-house, which were previously outsourced to one or multiple IS service providers. The distinguishing characteristic of the term backsourcing is the change in ownership back to the mother organization, independent of a change in location (closer) to the country or region of the backsourcing organization (Nujen et al. 2015). This definition naturally implies that the services in scope have been outsourced before. Therefore, the subsequent sections of this paper will also discuss certain aspects of IS outsourcing. In the academic literature, outsourcing is defined as transferring IS management and provision to one or more third party vendors which represent over 80% of the IS budget (e.g., Dibbern et al. 2004; Hirschheim and Lacity 1997).

Following Veltri et al. (2008) and Wong (2008), motivators behind a backsourcing decision can be generally classified into expectation gaps, internal organizational changes, and external organizational changes. Additionally, backsourcing can be triggered by the end of the original outsourcing contract (Bary and Westner 2018). Typically, backsourcing decisions are caused by a combination of several motivators, and not by a single reason (Veltri et al. 2008). Examples for expectation gaps could be dissatisfaction with the service quality delivered by the vendor (e.g., Moe et al. 2014), the actual costs of the outsourcing (e.g., Veltri et al. 2006; Wong 2006), or a loss of control over the outsourced services (e.g., McLaughlin and Peppard 2006; Veltri et al. 2008). Internal organizational changes could be triggered by changes in the management (e.g., McLaughlin and Peppard 2006; Veltri et al. 2008) or a strategic change in the role of the IS department (e.g., Wong 2008). Examples for external organizational changes could be mergers or acquisitions (e.g., Veltri et al. 2008), or changes on the vendor side (e.g., Wong 2006).

Outsourcing Dimensions

Dimensions characterizing IS outsourcing relationships will serve as a foundation to discuss sourcing forms and arising backsourcing development paths in the subsequent sections. Based on the existing sourcing literature, six outsourcing dimensions were derived, namely (1) “Ownership”, (2) “Location”, (3) “Degree of Outsourcing”, (4) “Time Frame”, (5) “Mode”, and (6) “Temporal Distance”. Figure 1 provides an overview of those dimensions, the different possible forms, and the respective academic publications.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Form</th>
<th>Explanation</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Internal</td>
<td>Internal provision of services</td>
<td>Bals et al. (2016)</td>
</tr>
<tr>
<td></td>
<td>Partial</td>
<td>Shared ownership (e.g., in Joint-Venture)</td>
<td>Foerstl et al. (2006)</td>
</tr>
<tr>
<td></td>
<td>External</td>
<td>Outside ownership</td>
<td>Jahns et al. (2006)</td>
</tr>
<tr>
<td>Location</td>
<td>Local</td>
<td>In the same country</td>
<td>Bals et al. (2016)</td>
</tr>
<tr>
<td></td>
<td>Near</td>
<td>In the same region</td>
<td>Foerstl et al. (2004)</td>
</tr>
<tr>
<td></td>
<td>Far</td>
<td>In a different region</td>
<td>Fraunhofer et al. (2014)</td>
</tr>
<tr>
<td>Degree of Outsourcing</td>
<td>None</td>
<td>Most/all performed internally (&gt;80% of IS budget)</td>
<td>Dibbern et al. (2004)</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>Outsourcing of selected activities</td>
<td>Lacity et al. (1996)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>No limited internal activities (&lt;20% of IS budget)</td>
<td>Oshri et al. (2013)</td>
</tr>
<tr>
<td>Time Frame</td>
<td>Short term</td>
<td>Short planning horizon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Long term</td>
<td>Long planning horizon</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>Single vendor</td>
<td>All outsourced activities with one vendor</td>
<td>Lee et al. (2009)</td>
</tr>
<tr>
<td></td>
<td>Multiple vendors</td>
<td>Cooperation with multiple vendors</td>
<td></td>
</tr>
<tr>
<td>Temporal Distance</td>
<td>Similar/small</td>
<td>Similar time zone (&lt;1h onshore, &lt;1h offshore)</td>
<td>Šmite et al. (2014)</td>
</tr>
<tr>
<td></td>
<td>Different/large</td>
<td>Large time difference (&gt;1h onshore, &gt;1h offshore)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Outsourcing Dimensions

(1) Ownership: Following Jahns et al. (2006), it is possible to differentiate three forms of ownership to characterize an outsourcing relationship. If IS activities are performed internally and thus no outsourcing is present, the ownership status is *internal*, whereas in the case that assets are owned by a third party and/or the activities are performed externally, the ownership is considered as *external* (Bals et al. 2016; Contractor et al. 2010; Dibbern et al. 2004; Foerstl et al. 2016). If the ownership is shared, for example when services are performed by a joint venture, then the ownership status is *partial* (Alvarez and Stenbacka 2007).

(2) Location: A second important dimension to be considered is the location in which the respective services are performed (Foerstl et al. 2016). For this purpose, the paper distinguishes between the three forms *local*, *near*, and *far*. *Local* outsourcing means that the services are performed in the same country as the contracting company; whereas it is considered as *near*, when the activities are performed within the...
same region or continent (Bals et al. 2016; Fratocchi et al. 2014). If the services are performed in a different region, the location is considered as far (Šmite et al. 2014).

(3) Degree of Outsourcing: This dimension defines the extent to which a company is relying on outsourcing. Total outsourcing implies that at least 80% of the IS budget is spent on third party vendors (Hirschheim and Lacity 1997). In contrary, if less than 20% of the total IS budget is used for third party vendors, it is considered as None, which is often called insourcing (Dibbern et al. 2004). If the company is outsourcing some activities, and is spending between 20% and 80% of its IS budget on third party vendors, this paper refers to it as selective outsourcing (Lacity et al. 1996; Oshri et al. 2015).

(4) Time Frame: For the intended duration of an outsourcing relationship, it is possible to differentiate between short-term outsourcing, when the company aims for a limited time frame, and long-term outsourcing of IS services, when a company has a long planning horizon and intends the relationship to last long (Dibbern et al. 2004).

(5) Mode: Regarding the outsourcing mode, Lee et al. (2009) distinguish between single vendor/client and multiple vendors/client relationships. In the single vendor form, all the outsourced activities at the respective company are outsourced to one vendor as opposed to many vendors in the multiple vendors form (Chaudhury et al. 1995; Lee et al. 2009).

(6) Temporal Distance: Since differences in time zones between client and vendor can have a significant influence on the function of an outsourcing relationship (Rao 2004), the temporal distance is another important dimension to consider. Whereas the location dimensions rather focuses on location specific topics like culture and wage differences, this dimensions focuses on temporal difference important for the collaboration. Following Šmite et al. (2014), this paper differentiates between a similar/small as 1h or less time difference (onshore), and a different/large form. They are defining similar/small as 1h or less time difference (onshore), and 4h or less (offshore). Therefore, larger time differences are considered as a different/large temporal distance.

**IS Sourcing Framework and Forms**

The subsequent section focuses on developing a sourcing framework to discuss sourcing forms which are most relevant for a potential backsourcing decision. The paper follows Jahns et al. (2006)’s and Foerstl et al. (2016)’s approach, who looked at reshoring within the field of manufacturing, and argue that the two main differentiating dimensions within outsourcing are ownership and location. Their framework and terminology was adapted to the field of IS outsourcing, considering existing IS outsourcing research, for example Oshri et al. (2015) who consider several outsourcing models, or Chou and Chou (2009), who are discussing the full IS outsourcing life cycle. A special focus was placed on the applicability to describe a backsourcing movement in a subsequent step. For instance, partial ownership is not included, because it is less relevant for the backsourcing case. In this research, the dimension ownership depicts the actual ownership and control status. Therefore, complex legal corporate structures, for example, when the IS department within a company is a separate legal entity, however fully owned by the mother organization, are not considered separately. Such a scenario would be treated as internal in this framework. Figure 2 displays the framework, which is discussed in the following paragraphs.

**Figure 2: Sourcing Framework (adapted from Jahns et al. 2006; Foerstl et al. 2016)**

Based on the two dimensions ownership and location and their respective forms introduced before, this paper defines six general sourcing forms as static states. A change in these states can be conceptualized as a movement along one or both of the axes ownership and location.
Starting at state (1), **Insourcing**, the IS services or products are provided by a company–internal department throughout internal projects without external support (Dibbern et al. 2004; Šmite et al. 2014). The department is located domestically, either onsite or as shared services offsite, but in the country of the mother organization (Foerstl et al. 2016; Oshri et al. 2015). The paper at hand suggests using the term insourcing as a static state to describe the internal provision of IS services, irrespective of whether or not the company has previously evaluated the IS service market for a potential outsourcing solution or not, as some researchers are postulating (e.g., Hirschheim and Lacity 1997). In this instance we are differentiating from the manufacturing-focused terminology of Foerstl et al. (2016) and follow previous contributions within IS research. Moving along the location axis, the next state is (2) **Nearshore Insourcing**, when the activities are performed by an internal department or subsidiary without external support, which is located in the same region as the mother organization (Foerstl et al. 2016). The move along the location axis from (1) to (2) or (4) to (5) is called nearshoring (Fratocchi et al. 2014). Moving further along the location axis, one is reaching the state (3) **Offshore Insourcing**. In this sourcing form, the provision of IS services remains internal and all employees are consequently employed at the mother organization or a fully owned subsidiary, however it is located offshore (Robinson and Kalakota 2004; Šmite et al. 2014). Depending on the previous location, this move can be called offshoring (from (1) to (3) and (4) to (6)), or further offshoring (from (2) to (3)), if the previous location was in a nearshore region (Fratocchi et al. 2014).

The remaining three sourcing forms are all characterized by an external ownership. State (4), **Onshore Outsourcing**, applies, if an external company, which is located in the client’s country, is providing the services or products (Prikladnicki and Audy 2009). The employees of the provider can be either onsite (for example, contracting or staff augmentation) or offsite in own premises (Prikladnicki and Audy 2009; Šmite et al. 2014). Again, moving along the location axis, one is reaching state (5), **Nearshore Outsourcing**, when the external vendor is located in the same region, but not in the same country as the mother organization (Foerstl et al. 2016). The last state (6), **Offshore Outsourcing**, is characterized by the fact that the IS activities are performed by an external vendor located in an offshore region (Oshri et al. 2015; Šmite et al. 2014). Each of the states (4) to (6) could also be reached from the matching states (1) to (3) by changing the ownership from internal to external, the so-called outsourcing (e.g., Dibbern et al. 2004).

After looking at the movements away from the company, both in terms of location (near-/offshoring) and ownership (outsourcing), the focus is shifted now towards the transition back to the company, especially the change of ownership from external to internal. As previously introduced, this transition of the required assets, activities, and skills to perform previously outsourced IS activities internally is referred to as backsourcing (Hirschheim and Lacity 1998; Lacity and Willcocks 2000). In general, the term backsourcing is applied regardless of the location of the outsourcing provider.

Similarly, the movement back along the location axis is generally called back- or reshoring (for example, from (3) to (2) or (1), and (6) to (5) or (4)), and characterized as movement closer to, or to the home country of the mother organization (e.g., Di Mauro et al. 2018; Kinkel and Maloca 2009). Fratocchi et al. (2014) also introduce the term back-reshoring, and highlight the fact that this movement is regardless of the ownership.

**Backsourcing Development Paths**

The remainder of the paper focuses on different possibilities for IS backsourcing. In the first step, different backsourcing development paths resulting from the previously introduced sourcing forms are defined to demonstrate the connection between outsourcing and backsourcing forms and to suggest path names for application in further research within the field of IS. Figure 3 gives an overview of the different paths.

Starting on the left side with one of the three forms (4) to (6) characterized by external ownership and thus outsourced IS activities, a company which is backsourcing must attain internal ownership, and must decide on the future location of the backsourced activities. In accordance with the definition of backsourcing, the first step is similar for every development path and requires a change in ownership (Nujen et al. 2015). In contrast, the second step can be different and is thus influencing which sourcing form will be ultimately reached. In general, each form (1) to (3) can be reached from each initial state (4) to (6), however in practice some paths will be more likely than others.
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Figure 3: Backsourcing Development Paths

From state (4), Onshore Outsourcing, a backsourcing company attaining internal ownership can either decide to leave the location unchanged and reach (1), Insourcing ("onshore backsourcing"), or to transfer to a nearshore location and reach (2), Nearshore Insourcing ("backsourcing from on- to nearshore"), or to transfer its backsourced IS activities to an offshore region and reach (3), Offshore Insourcing ("backsourcing from on- to offshore"). The developments paths from the initial states (5) and (6) to the respective forms with internal ownership can be deduced accordingly.

Backsourcing Configurations

In addition to the different development paths, there are more dimensions to classify and compare backsourcing cases. Therefore, the subsequent section introduces a configuration framework with four dimensions, which will be applied to describe a set of actual backsourcing cases to demonstrate its applicability. The intention of developing the configuration framework is to increase the understanding of the backsourcing phenomena by proposing a theory for analyzing existing cases along specific dimensions and characteristics, which can support further work within this research field (Gregor 2006).

As the aspect of ownership is mutual to all cases, it is not included as a separate dimension. However, the aspect of the target location is included in the configuration framework, since it can differ between backsourcing cases. The dimensions can be grouped into those focusing on the process of backsourcing, and those rather focusing on the context of the company which is backsourcing. Figure 4 shows the backsourcing configuration framework with its four dimensions and their characteristics.

Figure 4: Backsourcing Configuration Framework

Capability Development Strategy: A company deciding to backsource its IS activities needs to build up own capabilities in-house and overcome hurdles like missing resources or internal knowledge (Veltri et al. 2008) In general, the company has three main possibilities to define its capability development strategy. First, it can purely rely on internal capabilities, called pure organic development in this paper, when no resources formerly employed at the vendor are hired (Bhagwatwar et al. 2011). In contrast, the company could also fully rely on external capabilities, pure inorganic development, and fully transfer employees back from the vendor to develop its own capabilities (Butler et al. 2011). Third, it can use a mix of both, organic and inorganic development, and hire both former employees of the vendor and fully external resources.
**External Support during Transition:** For the respective company, backsourcing can constitute a significant challenge (Bhagwatwar et al. 2011). During the initial outsourcing process, the company is usually supported by an experienced IS vendor, however during the backsourcing transition, the company must rely on their own capabilities or hire external support (Ejodame and Oshri 2017). Three possible forms can be defined for this dimension: First, no external support, if the company does not engage a third party during the transition. Second, consulting support during transition, if the company relies on an experienced consulting company to support the transition, for example to define processes or to coordinate the knowledge transfer (Ejodame and Oshri 2017). Or third, temporary support for delivery of IS services, if a third party is taking over the responsibilities of the outsourcing vendor for a limited period of time, until the internal resources of the company are ramped up to fully take over all activities previously performed by the outsourcing vendor (Benaroch et al. 2010).

**Previous State of IS Organization:** For the re-integration of previously outsourced activities, it is important to determine the previous state and functional responsibility of the internal IS department during the outsourcing period, the so-called retained IS organization (Gewald and Helbig 2006; Goldberg et al. 2017). If the retained IS department was only responsible for managing the interface between business departments and IS vendors, this paper refers to it as vendor management organization only (Wiedemann et al. 2015). The next state is called limited functional scope of retained IS organization, if the internal IS department performed parts of the IS services in-house, and had outsourced large parts to external vendors (Willcocks and Fitzgerald 1994). The third state is defined in this paper as full functional scope of retained IS organization and applies if the internal IS department was fully capable of delivering the full range of IS services and had outsourced none or only very few tasks to external vendors.

**Target Location:** The fourth dimension, target location, connects back to the previously introduced outsourcing dimensions. If the location of the IS delivery remains unchanged and only the ownership dimension is changing, it is called no location change. If the backsourcing case is combined with a movement back to an onshore location, it is called move to onshore location (Prikладник и Audy 2009). And lastly, if the location is changed to a near- or offshore location, the configuration is called move to near-/offshore location (Fratocchi et al. 2014; Oshri et al. 2015).

After defining the set of dimensions to better classify and describe backsourcing, they are applied to a selection of backsourcing cases. Therefore, a set of well-documented backsourcing cases with sufficient public information to apply the introduced configuration framework was compiled. The cases were retrieved by reviewing academic literature on the topic of IS backsourcing. Additionally, to identify further examples, an online search within practitioner magazines like CIO.com, computerworld.de, and forbes.com was conducted. Included are both recent backsourcing cases as well as past cases, for example, the often-quoted JP Morgan Chase - IBM backsourcing case (Overby 2005), to demonstrate that the dimensions can be applied to cases irrespective of their date. Backsourcing examples from teaching cases with anonymized company names are also included, because of their high informational content. Those teaching cases are well documented, non-fictional examples, and despite their limited scientific orientation, they are adequate for testing the defined terminology. The reviewed backsourcing cases are displayed in Table 1.

In the following, the application of the introduced backsourcing configuration framework is presented on one of the cases from Table 1, namely General Motors’ (GM) decision to backsource the majority of its IS delivery in 2012 (Hackmann 2012). After a long period of outsourcing, the newly appointed CIO Randy Mott decided to terminate existing outsourcing contracts with vendors like HP, IBM, and Capgemini to change the previous ratio of 90% outsourcing to only 10% outsourcing within three years (Murphy 2012). The outsourced IS services included a wide spectrum, from application development to data centers. To achieve the ambitious goal, GM hired around 10,000 employees, consolidated its 23 data centers worldwide to two internal data centers, and founded three software development centers in the United States (US) (Automotive News 2017; Hackmann 2012). Looking at the first of the introduced dimensions, the capability development strategy, GM relied on a pure organic development, without transferring employees or assets from original vendors, but rather built up new locations and hired external employees. No reference that GM was relying on external support during the transition phase could be found in any of the published articles. Therefore, it is classified as no external support. Looking at the third dimension, the previous state of the IS organization, GM’s IS department focused on vendor management only, and had outsourced most to all of its IS delivery. With regard to the target location, GM moved to an onshore location, having both its new data and software development centers located in the US, after they had been distributed worldwide.
Table 1: Backsourcing Cases and their Configurations

The classification of the eight selected cases of IS backsourcing along the defined configuration framework demonstrates the applicability of the introduced dimensions. For most of the cases, the classification along the different forms was unambiguous. In some instances, the information situation regarding the dimension “External Support during Transition” was relatively poor, potentially because the respective companies did not disclose any information regarding consulting support. Although this might complicate the classification for some examples, the dimension contains interesting information about a company’s approach to leveraging external support and thus complements the introduced framework in an important way. It can be observed that there is a certain accumulation within some forms, for example pure organic development, or no external support, however only two of the eight examples have the same configuration (Astra Zeneca and Lowe’s). In summary, it can be concluded that the introduced backsourcing configurations are well suited to compare, classify, and contrast cases of IS backsourcing.

Summary and Outlook

The objective of this paper was to clarify the essential terminology required for discussing and classifying cases of IS backsourcing. Originating from six outsourcing dimensions, namely ownership, location, degree of outsourcing, time frame, mode, and temporal distance, the frameworks from Jahns et al. (2006) and Foerstl et al. (2016) were adapted to the field of IS to derive the different IS sourcing forms depending on the respective location and ownership mode. Starting at the initial insourcing state, the company can either near-/offshore and/or outsource its IS activities to reach the other sourcing forms. Afterwards, different backsourcing development paths were introduced to show the potential paths a company can backsorce their previously outsourced IS activities depending on the previous and future location. In the last section, a configuration framework with four dimensions was defined to categorize and compare existing backsourcing cases based on their capability development strategy, external support during transition, previous state of IS organization, and target location. Those dimensions were applied to a set of...
backsourcing cases to demonstrate the applicability in practice and its usefulness for characterizing backsourcing cases and contrasting the different approaches.

Following Gregor (2006)’s taxonomy to classify theories within the research field of IS, the configuration framework developed in this research could represent a first suggestion within the theory type I, theory for analyzing. The proposed framework analyzes the ‘what is’ state, by describing and classifying situations along specific dimensions and characteristics (Fawcett and Downs 1986; Gregor 2006). As such, it can support further work within this research field by providing a theoretical foundation to analyze and ultimately to further explain or predict backsourcing phenomena (Gregor 2006).

The research at hand is limited regarding the introduced backsourcing case examples, since it only relies on known cases with sufficient public information available. This imposes the risk of relying on imprecise information about the listed backsourcing cases; and potentially also of completely missing out important case examples or dimensions to characterize them. However, since this paper includes cases from different locations and dates, and with large amount of public information available, the author is convinced that the cases are well suited to demonstrate the applicability of the introduced framework. Additionally, this research was performed without collecting any primary data. Nevertheless, data could be collected from different sources for almost all of the cases and thus be complemented and triangulated.

There is potential for further research by applying the introduced framework to further backsourcing cases, for example, during a more extensive analysis of cases, including interviews with key stakeholders and the respective companies. This would allow researchers to further demonstrate the applicability of the proposed framework, and to potentially identify further important dimensions to classify cases of backsourcing. Additionally, research could aim to provide recommendations about the re-integration of back-sourced activities into the retained organizational structure of the company. Moreover, the majority of the available research is focused on the backsourcing company, while the perspective of the vendor is currently underrepresented. To create a more holistic picture of the entire backsourcing movement, further research could discuss termination motivators by the vendor, or the impact of a larger backsourcing movement on the business model of vendors.

REFERENCES


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