

# Resource interaction and resource integration: Similarities, differences, reflections

## ABSTRACT

Two approaches in marketing theory focus on resources; IMP and SDL. The purpose of this paper is to provide a state-of-the-art comparison of how resources are conceptualised in the 'resource interaction' (IMP) and 'resource integration' (SDL) approaches. We trace how the resource interaction and resource integration has evolved over time by building a timeline in order to chart key developments, e.g. changing categories, re-definitions of the features of resources, and different levels of analysis (dyad, network, ecosystem). Our preliminary analysis of both similarities and differences shows how researchers have placed increasing attention on resources and their role within both the IMP and SDL conceptual frameworks. The focus of SDL has shifted from operant resources towards resource integration, and from a dyadic and relatively static view towards ecosystem thinking and processes. It has mainly developed via a conceptual and theoretical debate. Within IMP, resource interaction has been developed and expanded through successive empirical works. Studies have typically taken a network perspective in deepening understandings of how resource interaction occurs, the features of resource interfaces, and how interfaces are impacted by the business settings involved, in a wide variety of empirical contexts. We conclude the comparison with some reflections and suggestions for further research. The contribution of the paper is to provide an up to date and timely comparison of resource interaction and resource integration.

**Key words:** Resource Interaction, Resource Integration, IMP, SDL

## INTRODUCTION

The purpose of this paper is to compare how resources are conceptualized within Industrial Marketing and Purchasing's (IMP) 'resource interaction' approach with Service-Dominant Logic's (SDL) 'resource integration' approach. Our starting point is that IMP and SDL are the two perspectives within marketing theory that are currently actively debating the importance of resources in business networks. Both rely on the dynamic and evolutionary nature of resources as a key driver of value and exchange processes. Both also take an inter-organisation perspective on how resources are utilized across firm boundaries. In recent years, the approaches have expanded and deepened their understandings about resources, often using similar terminology. It is timely to assess the possible points of convergence in their conceptualizations, along with the differences. We have identified key references over a 20-year period in order to give a solid foundation for such a comparison.

To address the purpose of the paper, we first trace how ideas and frameworks regarding resource interaction and resource integration have evolved over time and make comparisons of similarities and differences. We build timelines in order to chart key developments. We consider how knowledge about resources has been advanced, e.g. via empirical studies, changing categories, introduction of constructs further defining the features of resources, and different levels of analysis. As such, the research question that the paper addresses is as follows; *'how is resources conceptualized in the Resource Interaction and Resource Integration approaches?'*

The paper proceeds as follows. In the next section, we outline the methodological approach used to select papers and to develop our longitudinal comparison. We then provide an outline of the developments in first the Resource Interaction approach, and then the Resource

Integration approach. We summarise both approaches via the use of timelines. Following this, we make a comprehensive comparison of the conceptualization of resources within the approaches. Although we acknowledge there are differences in origins and early history behind the two streams (Ford, 2011; Baraldi et al., 2012a), the purpose of this paper is **not** to compare the whole IMP and SDL approaches: our specific focus is on resources. However, by necessity we have included some comparison of the two as a dimension in this section. The paper concludes with some reflections and suggestions for further research.

### **METHODOLOGICAL APPROACH**

In order to address our research question, we have undertaken a focused reading exercise to trace the development of resource-related concepts over time within both IMP and SDL. The six authors of the paper were divided in two groups of three, one focusing on IMP and the other on SDL. The authors are familiar with both approaches. We thereby started the selection of the papers for the reading exercise based on our existing knowledge of key references (e.g. literature reviews, seminal works) in both approaches over a 20-year period, from 2000 to the present date. This allowed us to assess critically which were the most appropriate papers to be included in our selection.

In terms of IMP, the process of selecting relevant literature started by using review articles (e.g. Baraldi et al., 2012b) and a focused Google Scholar search in order to identify relevant articles and books. This resulted in a working list of 20 publications. The three authors focusing on IMP then undertook a focused reading exercise in order to gain an understanding of the concepts in use, their development over time, the level of analysis, and the variety of empirical contexts involved. During the reading exercise the working publications list expanded from 20 to 36.

The other three authors also undertook a focused reading exercise, this time in order to be able to trace the development of SDL resource concepts over time. Again, the aim was to gain an appreciation of the concepts in use, how these have developed over time, levels of analysis, and the variety of empirical contexts involved. Specifically, the selection process took its starting point in the article of Vargo and Lusch (2004). Afterwards, an overview of SDL literature involving resource integration as a central part was constructed, using Google Scholar. This search resulted in a list of 11 publications. The reading exercise resulted in increasing the list of relevant SDL publications from 11 to 19.

In order to catch the evolution of the contributions, we needed to build timelines of the conceptual development of the two approaches. The 36 resource interaction and 19 resource integration papers were placed into five time phases of roughly five years each to cover the past 20 years: prior to 2001, 2001-2005, 2006-2010, 2011-2015 and 2016-to date respectively. We decided to periodize the 20-year timeframe into discrete time-periods in order to facilitate the comparison of the conceptual advancements in both approaches (Baron et al., 2013; Das, 2009). This facilitated our understandings of how the resource concept has been developed over time without being too micro (too short periods) or missing a fine-grained analysis by having too long periods of time (say 10 years).

### **IMP AND RESOURCE INTERACTION**

In brief, resources are a long-standing central theme within the IMP approach (Håkansson, 1982) in particular as one of the pillars within the ARA model (Håkansson and Snehota, 1995). Resource interaction in business networks is “...*the process of combination, re-combination and co-development of resources that happen through the interaction among organizations*” (Baraldi et al., 2012b:266). The network level is essential when considering resources within IMP (Ford, 2011). Resources are also ‘context dependent’ (Håkansson, 1993). The resource interaction approach relies on some underlying assumptions. Baraldi et

al. (2012b:266) adapted 4 core assumptions and 6 corresponding propositions from Håkansson et al. (2009). These are summarised in Table 2 below. The assumptions and propositions refer to both (i) the nature of resources and (ii) how resources interact.

### **How are resources classified and analysed?**

An early resource typology was suggested by Håkansson (1987:16). Here, resources were said to “*consist of physical assets (machinery, material, etc.), financial assets, and human assets (labour, knowledge and relationships)*”. The main theoretical framework/tool within the resource interaction approach is however the 4R Model (Håkansson and Waluszewski (2002a) or, in full, ‘4R Interaction Model’.

The model allows for analysis of how two or more resources interact, where the value of a resource depends on the way it is combined with other resources. The 4R Model was developed from an extensive study of the greening of the IKEA catalogue. This classification tool was also under development within parallel projects such as an EU-wide Furniture Project (e.g. Baraldi and Bocconcelli, 2001), alongside a variety of strongly empirical PhD theses (e.g. Wedin, 2001; Baraldi, 2003). The 4R Model “*provides one way of classifying, mapping, and analysing the processes of resource interaction in inter-organizational networks*” (Baraldi et al., 2012b:268). It facilitates mapping resource combinations - resulting from interactions - in a network at a particular point in time. The 4R Model provides a typology of resources in terms of *products, facilities, business units and business relationships*.

### **How are resource combinations connected as a result of interaction?**

Resources are embedded in a structure and interact via resource interfaces. Resource interfaces connect a one pair of resources of the same or different types, or multiple resources of diverse types. Håkansson and Waluszewski (2002a, b) and Baraldi (2003) are among the first scholars that discuss resource interfaces as the specific contacts points and surfaces between two resources. Dubois and Araujo (2006:22) define resource interfaces as “*interconnections between two or more entities at a shared boundary*”. The result is resource combinations in a particular network setting. As Baraldi et al. (2012b:267) suggest, “*the concept of interfaces provides the building block for both analyzing resource combinations and for formalizing the interactions between the resources involved*”.

Resource interfaces can be both direct and indirect. Jahre et al. (2006) argue that a resource interface connects at least two resources directly, but it may also indirectly connect to other resources via indirect interfaces. Dubois and Araujo (2006:33) refer to this as connected interfaces. Such indirect or connected interfaces are important, since they create imprints (Håkansson and Waluszewski (2002b). Baraldi et al. (2012b:268) argue “*these are in the form of pressures to develop certain other features that may be unimportant for a focal interface, but that are necessary for satisfying the technical, social or economic requirements of other resources in order to fit better in a network context*”. Resource interfaces can also be deep/shallow, specific/unspecific and strong/weak (Baraldi and Waluszewski, 2005)

### **How can resource interfaces be changed or managed? Heaviness, variety and friction**

Baraldi and Bocconcelli (2001) argue that *heaviness* and *variety* are two dimensions of resource embeddedness in a network setting. Due to the embedded nature of resource interfaces, tensions are created between all involved resources when resource development occurs. The concepts of heaviness and variety analyse the possible tensions in the embedded resources and corresponding resource interfaces (Håkansson and Waluszewski, 2002b). As proposition four (see Table 2) states, ‘all changes of a resource create tensions’. Heaviness relates to the strengths of a single interface and the difficulty in breaking apart interacting

resources, due to investments made in existing interfaces. Variety, on the other hand, refers to the number of different existing possibilities for recombining resources in new ways. It should be noted that in a review of the two concepts, Prenkert et al. (2019) argue that surprisingly few authors provide explicit definitions of these two concepts. The definitions provided are often rather vague, overlapping, or the concepts are ‘taken for granted’ and seen as unproblematic. In other words, there is conceptual variation across scholars, papers and ideas. We return to this point later in the paper.

### **Empirical settings**

The 4R Model was initially developed within the empirical settings of technological development and innovation. Subsequently the application areas expanded in scope to include logistics, science-business interplay, and accounting. Baraldi et al. (2012b:269-270, table 2) provide a useful summary of relevant application areas and empirical contexts. From 2012 onwards, we see a continuing expansion of the application scope. This includes themes such as: resource development in new relationships (Gadde et al., 2012); resource interaction in complex solution development (Cantù et al., 2012); the different roles played by business and non-business actors in resource combining (Crespin-Mazet et al., 2014); goal diversity and resource matching in project settings (Lind, 2015); how state actors act as resource mobilisers in facilitating networked innovation processes (Shih and Linné, 2016); start-ups (Landqvist and Lund, 2017) and SME-large customer relationships (Bocconcelli et al., 2018).

## **SDL AND RESOURCE INTEGRATION**

Our discussion about the Resource Integration approach in SDL is developed in a longitudinal sense. We describe different phases of development in terms of conceptual evolution, as well as the main shifts in the perspective within and across phases.

### **Building phase (Paving the ground for a new logic in marketing – defining resources)**

Resources were from the beginning central in the building of a new Service-dominant Logic. The definition of resources, how they are used and by whom, were questions that needed answers in the early phase since the SDL scholars’ agenda was to build a ‘*new dominant logic for marketing*’ (Vargo and Lusch, 2004). A lot of knowledge concerning resource reasoning was gathered from adjacent fields (e.g., Zimmerman, 1951), moving away from a traditional Malthusian approach to resources as things or “stuff”. The point of departure to catch this ‘becoming’ nature of resources is the clear distinction between two types of resources – *operand* and *operant* (Constantin and Lusch, 1994). Here, operant resources are the *primary* resource as the producers of effects (knowledge, core competences, organizational processes, capabilities), while operand resources can be seen as objects. Based on this primacy of operant resources, eight foundational premises (FPs) of SDL were elaborated (Vargo and Lusch, 2004).

### **Consolidating phase (Reconfiguring the terminology - resource integration)**

In the 2004 paper neither *resource integrator* nor *resource integration* are mentioned. However, two articles (Vargo and Lusch 2006, Lusch and Vargo, 2006) recognize the important role of resource *integration* in addition to resource application, and hence that all economic entities are resource integrators.

Moreover, the central role of networks and interaction in value creation and exchange is acknowledged. The authors claimed that SDL implicitly considers networks and interactivity, because value creation is a process of integrating and transforming resources (FP9) (Lush and Vargo, 2006:285). In this context Håkansson and Prenkert (2004) are

referred to as pioneers in network theory and the authors advocate for the elaboration and extension of SDL with a more explicit connection to "the interactivity and networking" literature. In sum, an initial critique of SDL was vagueness regarding the role of the network (Lusch and Vargo 2006) was responded to by advocating the idea that the network implicitly always is present in value co-creation.

In 2008, a revision claimed, "*all economic actors (e.g., individuals, households, firms, nations, etc.) are resource integrators*" (Vargo and Lusch, 2008:3). The use of the term *actors* is a term the SDL has adopted from the IMP group "*with something less than complete comfort*" (Vargo and Lusch, 2008:9). As a result, the FP9 changed as follows: "*All social and economic actors are resource integrators*" (Vargo and Lusch, 2008:9). The result was that the foundational premise shifted from organizations to actors as resource *integrators*.

An important turning point is represented by the 2010 special issue in JMMM. Here, both the *resource-integration* perspective and the *service ecosystems* model were foregrounded. Another important contribution in this phase is the article by Mele et al (2010). This article is empirically based and deals with a case of a supplier firm in the food packaging industry that is involved in different innovation projects with customers (and suppliers). Here, the authors claim that their findings demonstrate that the paradigm of SDL provides a suitable framework for understanding innovation as a value co-creation process of interaction and resource integration.

### **Adoption stage**

An expansion was taking place in the Resource Integration approach as the loci shifted towards a more complex and relational model. It was an acknowledgement of the importance of the system model, which goes beyond the network-based model (Edvardsson et al., 2014; Vargo and Lusch, 2011). Edvardsson et al. (2014) argued that a SDL required systemic thinking in order to conceptualise resource integration and address issues relating to regulative, normative, and cognitive functions of institutions, and how these might affect resource integration.

### **SDL diffusion**

From 2016 onwards, resource integration is elaborated as a process, by use of the newly introduced concepts of '*institutions*' and '*resourceness*'. Institutions refer to the rules, norms, and beliefs that provide a social context for understanding resource integration as a part of value co-creation process (Vargo and Lusch, 2016).

In 2017, Vargo and Lusch published a future-oriented paper, 'Service-dominant logic 2025'. This wide-ranging piece encouraged SDL scholars to develop more evidence-based midrange theory concerning the key concepts (e.g., resource integration) of SDL in the light of institutions. Echoing the call, Caridà et al. (2019) used cases to illustrate resource integration as an embedded process in value co-creation through three phases (i.e. matching, resourcing and valuing) and how institutions played a key role in shaping these phases.

## **COMPARISON**

### **Similarities**

Our comparison suggests three similarities across the two approaches. First, the most superficial – and therefore obvious - is that the terms used are the same. That is, both approaches are discussing 'resources', 'relationships' and 'networks'. This is both potentially trivial, but also a possible source of confusion when the same terms are given different conceptual understandings and are underpinned by different assumptions.

Secondly, and more fundamentally, both approaches now emphasize ‘resources becoming’. In the Resource Interaction approach, resources do not exist per se as objects, but instead are formed through interaction with other resources. This occurs through processes of resource combining, as new interfaces are created between resources. In SDL, resources were initially seen as tangible and intangible things or objects (i.e. operand and operant resources). In a recent development from 2016, resources have been re-conceptualized as an abstraction. The implication is that it is through actors integrating (potential) resources in the relevant context that enables potential resources to gain resourceness. Both approaches stress on the availability of other resources as the preconditions for resources becoming.

Thirdly, there is a role for the actor within both resource interaction and resource integration. This is especially the case for the Resource Integration approach. However, the status of the actor and what activities actors perform in relation to resources differs, which we elaborate on in the next section.

### **Differences (abridged – a full discussion is included in the competitive version)**

There are several interesting differences across the two approaches. In terms of *how entities become resources*, both suggest that resources are not, they become. However, there are differences in the processes involved here. Within the Resource Interaction approach, resources do not exist without interaction. Within SDL, resources were first assumed to exist per se (prior to 2016), even if they are now considered as abstractions. Yet the perspective is from the ‘outside’: eventually actors have to act on the resources within a given institutional context. By contrast, within IMP, the discussion is ‘inside’ the interaction. This difference is reflected in the *assumptions about the nature of resources*.

Resources are also *classified and analysed* differently. We argue that the Resource Integration approach does not currently analyse resources as such, but rather emphasizes resource integration processes (e.g., the practices involved). For example, ‘operant’ and ‘operand’ resources are clearly distinguished, but the features of these two resources are not elaborated.

Moreover, SDL does not have an equivalent analytical way of analysing resources as the 4R model. However, the Resource Integration perspective does go deeper into the processes of how actors integrate resources in the context. As such, *the role of the actor*, knowledge and competences are important.

Indeed, actors are central within the SDL view of resources. Within the Resource Integration approach, the focus is on resource integration being shaped by contexts such as service ecosystems and institutions (and vice versa, contexts shaping resource integration). This again reflects an important difference in focus. IMP is concerned with the interaction between resources within resource structures, while SDL concentrates on the mutual shaping of resource integrating activities and contexts. There is, however, a role for the actor in the Resource Interaction approach. More recent work (since 2012) has emphasized how actors connect resources by collectively forming resource combinations.

## **REFLECTIONS AND CONCLUSIONS**

We recognize that scholars use different lenses when studying various aspects of the phenomena under investigation. Leroy, Cova and Salle (2013) argue that researchers do that by consecutively zooming in (observing at micro level) and zooming out (observing at macro level) It can be argued that both approaches to some extent may have been exposed to the risks of too many studies using the lens of zooming in (Resource Interaction) versus zooming out (Resource Integration).

The Resource Interaction Approach aims to obtain insights from empirically-grounded phenomena situated in business networks. This is in keeping with the general way in which

knowledge is developed within IMP (Ford, 2011). The Resource Interaction Approach is coloured by an open language system with terminology stemming from many rich empirical studies in a variety of application areas. It may be argued that too many studies zooming in the details of resource interaction has created a plethora of notions discussing more or less the same thing by using a number of concepts, i.e. zooming in has in some cases made it difficult for researchers to make sense of the details. There is a risk of shaping a narrative that can be perceived as being ‘local’ and potentially inaccessible due to fuzziness. The Resource Integration Approach, on the other hand, is a theoretically driven approach with – as yet - fewer empirical examples (cf. Ford, 2011; Baraldi et al, 2012a, b). A grand narrative has been created by the originators (Vargo and Lusch 2004; 2008) with a overarching framework for researchers to use. However, the inherent risk is to lose touch with the everyday practices of firms and possible empirical differences seen in the details, with too many zooming out studies examining the big picture in order to create an overarching framework (Leroy, Cova and Salle 2013).

SDL is a newer approach with different origins to IMP (see Ford, 2011). It has, at least until very recently, grown as a result of “...*intense theoretical development*...” (Ibid., p. 232). The theoretical approach in resource integration has a centralized language system (e.g., foundational premises, axioms) and a grand narrative. Resource Integration contains many theoretically-grounded concepts, which have also changed over time. The concepts are underpinned by clear definitions. We suggest there is a strong knowledge accumulation process of ‘centralised’ refinements of concepts over time. One potential issue is the existence of tightly defined concepts that have not been applied empirically. In future, it is foreseeable that there will be more midrange theory development on resource integration based on empirical inquiries, as a response to the call of an important SDL paper in 2017 (Vargo and Lusch, 2017). Thus, we can conclude that both approaches are in need of studies using both zoom in and zoom out lenses to avoid imbalances when examining Resource Interaction versus Resource Integration.

Furthermore, we argue that both of the existing comparisons of IMP and SDL (Ford, 2011 and Baraldi et al, 2012a, b) are out of date in terms of SDL’s rapid expansion. The focus of earlier comparisons is based on what is now a limited understanding of SDL; that is, it essentially stopped at operant and operand resources. As the comparison above indicates, the conceptualisation of resources between 2012 and the present have changed over time, within both approaches. We contend there was a peak in research interest within the Resource Interaction approach in 2012, with the publication of the twelve-paper special issue in the *Journal of Business Research* (Baraldi et al, 2012a, b). Subsequently, the number of outputs has dropped somewhat. Developments have centred on an extension of the ideas into different empirical settings, e.g. SMEs-large customer interaction. Moreover, the role of the actor has become more prominent.

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