Resource Interaction: Towards a common understanding?

ABSTRACT
The purpose of this paper is to elaborate the current concepts within resource interaction into a common framework. We do not aim to close or reduce an ongoing debate, but rather to aid further theoretical refinement and development. Resource interaction is a central theme within the IMP approach. A multiplicity of studies has developed concepts which are not often clearly related or that overlap. Indeed, there is a risk that conceptual richness obscures analytical precision and creates unnecessary inertia in the process of developing commonalities when speaking about resource interaction (cf. Prenkert, Hasche & Linton, 2019). It is timely to make this approach clearer. The paper concludes by proposing a conceptual map of the central concepts.

Key words: Resources, Resource Interaction, IMP

INTRODUCTION
Resource interaction is a central theme within the IMP approach. The purpose of this paper is to stimulate the development of a common and systematic language to make sense of the notion of resource interaction. We posit that current research covers many conceptual levels and draws on a multitude of concepts and notions. However, it appears that concepts are not always related to each other in a systematic way. Due to the multitude of concepts, we claim that there is a risk of misinterpretations between researchers using the resource interaction approach. In particular, as noted by Prenkert, Hasche and Linton (2019), there is a risk that such a conceptual richness obscures analytical precision and creates unnecessary inertia in the process of developing a conceptual understanding.

Despite some recent attempts at clearing the conceptual undergrowth (Prenkert, Hasche & Linton, 2019) we assert that more work is needed. We need a common conceptual understanding with which we can establish a theoretically coherent and systematic framework to investigate resource interaction (Bocconcelli et al., 2019; Prenkert, Hasche & Linton, 2019). For example, how are concepts and features of resources associated to it and to each other? Are there some hierarchical notions in such a structure?

The paper proceeds as follows. In the next section, we outline the research methodology after which the following section discuss central concepts within resource interaction. In the final section, we highlight some of the conclusions from our work in progress.

RESEARCH METHODOLOGY
This is a multi-author project which was triggered by a debate about the concepts and shared understandings and misunderstandings in the current resource interaction literature. Following face-to-face meetings to brainstorm the current concepts and understandings of these, a multi-
author writing process started. In an initial phase ("pre-writing phase") a tentative list of key concepts was established as a starting point for the writing process, see table 1.

Table 1. An initial list of key concepts

<table>
<thead>
<tr>
<th>Resources</th>
<th>Heaviness</th>
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<tbody>
<tr>
<td>Heterogeneity (of resources)</td>
<td>Variety</td>
</tr>
<tr>
<td>Interaction</td>
<td>Friction</td>
</tr>
<tr>
<td>Embeddedness (of resources)</td>
<td>Idea structures</td>
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<tr>
<td>Inter-connectedness</td>
<td>Activated resources</td>
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<tr>
<td>Interdependence</td>
<td>Representations of resources</td>
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<tr>
<td>Resource interfaces</td>
<td>Value/Money/Knowledge (of resources)</td>
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<tr>
<td>Resource structure</td>
<td>Knowledge as a resource per se</td>
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<tr>
<td>Imprints</td>
<td>Money as a resource per se</td>
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</table>

The group of 17 co-authors was divided into small sub-teams in order to facilitate discussion of the various concepts identified in table 1. To structure the process of developing the multi-author paper, a stepwise approach involving four phases was established, see figure 1. The third phase, the "conference paper phase", involves multiple steps where each sub-team work collaboratively to develop the different parts of the manuscript. To stimulate discussion and bring cases of differences and consensus to the fore, the sub-teams reviewed the work of the others.

Figure 1. The major steps of the multi-author writing process

The aim of the three initial phases was to provide an overview of the development of a concept, how understanding has changed over time, show how the concept relate to other concepts and, identify additional concepts that should be included in the continued work. The objective of this conference paper is thus to provide a brief overview of the work and to summarize some of the initial results. Moreover, reflecting the outcome of the initial phases of the writing process, we started the work of creating a conceptual map by identifying and listing concepts that apply to the resource interaction approach (see the final section of the paper).

EXPLORING THE CONCEPTS WITHIN RESOURCE INTERACTION

In the IMP perspective, various elements, tangible or intangible, material or symbolic are considered as resources when they have a known use for some actor (Håkansson & Snehota, 1995:132). Early IMP typologies classify resources as physical, financial or human (Håkansson, 1987) and later ones like the 4R Model (Håkansson & Waluszewski, 2002a;
Wedin, 2001; Baraldi & Bocconcelli, 2001) classify them into four types: *products, facilities, business units* and *business relationships*.

Due to its heterogeneous character (Penrose, 1959), each resource can be combined with several resources in numerous ways (e.g., Baraldi, 2003; Biemans, 1992) for value creation, making them inherently dynamic (Håkansson & Snehota, 1995) and open objects, whose features are emergent and context-dependent (Baraldi, Gressetvold, & Harrison, 2012a). Resource *interdependence* denotes a more specific, if not stronger, kind of *connection* than *connectedness* as it stipulates that some resources are not only connected but also dependent on each other, either for their existence or in their functions, especially following some adaptation between them. Interdependent resources affect each other’s *values* through the notion of heterogeneity (Penrose, 1959). On the other hand, two resources may be connected, but not interdependent, but two such resources rarely influence each other’s value (e.g., Baraldi & Strömsten, 2006)\(^1\). The value of a resource emerges through its interaction with other resources embedded in a network structure (Håkansson et al., 2009:65; Baraldi & Strömsten, 2006).

In IMP, *interaction* is conceptualized as the complex patterns of elements and processes of a buying and a selling firm relating to each other over time (Håkansson, 1982). The content of the interaction is affected by environmental factors as well as the internal organization of the two firms and by the long- and shorter-term adaptations that are being made. Connection and its corollary interconnection are general concepts referring to the fact that two or more resources are connected, irrespective of the temporal or institutional origin of such a connection. Connection refers to one entity linking to another unilaterally, irrespective of whether the other entity reciprocates or not. Whereas interconnection emphasize reciprocity and a reciprocal connection between two entities.

In terms of the *resource structure*, it has been expressed as ‘*resource constellations*’ (Håkansson & Snehota, 1995) ‘*resource configuration*’ (Baraldi & Strömsten, 2006; Bocconcelli, Murmura & Pagano, 2018) or ‘*resource networks*’ (Harrison & Håkansson, 2006; Bengtson & Håkansson, 2007). At large, resource structures depict resources’ interconnectedness in the larger network (Håkansson & Waluszewski 2002a; Baraldi et al., 2012, a). Moreover, Håkansson and Waluszewski (2002a) define the *activated structure* as “the current set of interfaces across the four types of resources…” (cf. Baraldi et al., 2012a). In other words, the activated structure is the materialized, current resource network, made up of both resources and resource interfaces. It is both an enabler and barrier to change/development efforts (Håkansson & Waluszewski, 2002b).

*Friction* is a result of any destabilizing force or movement of resources in relation to other interconnected resources (Håkansson & Waluszewski, 2002b; Baraldi, Gressetvold & Harrison, 2012, b), and can thus be considered as an effect of a force which is exerted over *heavy resource structures*. Håkansson and Waluszewski (2002a) identify three main features of frictions including, (i) being a relational concept, (ii) being time dependent, having different effects depending on when it is applied and (iii) creating transformation and affecting the features of the interacting resources. The concept of friction is typically used for the analysis of product

\(^1\) Thus, the notion of resource interdependence overlaps largely with the “weaker” or more general form of resource embeddedness, but not with the stronger form of resource embeddedness which requires that the interdependence is rooted into an institutionalized resource structure as a backdrop.
innovation and technology processes (Håkansson & Waluszewski, 2002a, 2002b; Hoholm & Olsen, 2012). However, some research focuses more on the relational feature of friction (e.g. Ashok, Day & Narula, 2018).

Idea structure (Håkansson & Waluszewski, 2002a) is used synonymously with the notion of ‘image layer’. Håkansson and Waluszewski, (2002b) appear to consider the concept as both a noun and a verb. This stems from the presumption that no one can have full knowledge of any resources and “only fragments of what is happening in the physical structure can ever be captured” (Håkansson & Waluszewski, 2002a: 73). Rather, different actors will have different ideas, perceptions, interpretations and knowledge of a resource’s qualities and features. That is, both as an interpretation in the here and now, and as way of making conscious changes in the activated structure. These interpretations underpin discussions in meetings about the current activated structure. In other sources, there is also a more general sense of ‘activated resources’ as the current materialized resource structure, and how this can be ‘activated’.

The resource interface concept is key in the development of a resource interaction perspective (Wedin, 2001; Baraldi & Bocconcelli, 2001; Håkansson & Waluszewski, 2002a; Baraldi, 2003): “The way the interfaces look is dependent on historical as well as contemporary interaction processes, between physical/technical and social/commercial resource elements. Interaction between resources will therefore form interfaces, which in turn will influence the value of a specific resource” (Wedin, 2001: 38). Resources progressively mark each other along specific interfaces and reciprocally define their values (Håkansson & Waluszewski, 2002a). The resource interface concept, broader in nature than ‘resource tie’2, “penetrates and cuts surgically into the texture of resource interactions by pointing at the specific contact points between two resources defined along relevant technical, economic, and social dimensions” (Baraldi, 2003: 18). Different contributions tried to cope with the issue of different typologies of resource interfaces: i.e. technical and organizational interfaces (Dubois & Araujo, 2006); mixed interfaces (Jahre et al., 2006); technical and social/organizational interfaces (Baraldi & Strömsten, 2006); technological, social and mixed interfaces (Strömsten & Håkansson, 2007). Broadly speaking, imprints are related to ‘interaction in time’ within innovation and technological development paths: “Studies with a historical perspective have recognised that innovations are never neutral, but over time are both grounded in and directed by imprints of interaction” (Håkansson & Waluszewski, 2013: 451).

CONCLUSION: A TENTATIVE MAP OF CONCEPTS

The previous section highlights that the concepts that we have identified as central to a conceptualization or a theory of resource interaction are not stand-alone entities. They relate and associate to each other in a number of ways. To conclude the paper we present a tentative conceptual map involving some of the concepts discussed above, see figure 2. The map serves to indicate how some of the concepts may associate.

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2 The resource interface-concept differs from that of the resource tie-concept. The latter takes the resources of two different actors into account which have to “fit” each other at a more general level, as compared to the former which accounts for the specifics of resources interacting.
It should be noted that this map is neither systematic, nor exhaustive; it serves merely to indicate the need for further refinement and theoretical development. To develop a coherent theory of resource interaction that can serve as a language about these matters, a more elaborated and systematized map is required. How such a map can look like remains to be developed in future research. We do think however, that we have laid out much of the groundwork for such an endeavor in this paper.

REFERENCES


