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Heteropathic versus homopathic resource integration and value co-creation in service ecosystems

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ABSTRACT

While the notion that resource integration is central to understanding value co-creation in service ecosystems, there is currently no clear and detailed definition of resource integration. The philosophical concept of emergence makes a clear distinction between instances of resource integration based on emergent relations between resources, here termed heteropathic resource integration, and instances of resource integration based on summative relations between resources, here termed homopathic resource integration. It is the new emergent properties that result from heteropathic resource integration that become an important factor in enhancing resourceness and thus value co-creation. Using the concept of emergence, heteropathic resource integration may lead to new emergent properties in service ecosystems, properties which may help and/or hinder the viability of service ecosystems. The assessment of the value co-created by resource integrators may be related to these new emergent properties.

1. Introduction

Vargo and Lusch (2011) propose a service ecosystems view of value co-creation, defining a service ecosystem as a relatively self-contained, self-adjusting system[s] of resource-integrating actors. This view places the integration of resources as a central means for connecting social and technological aspects of markets (Vargo & Akaka, 2012). However, the mere presence of resources does not imply resource integration per se. Lusch and Vargo (2014) imply that it is only when the resourceness of resources is recognized and acted upon that potential resources become actual resources. Thus, the notion of resource availability and integration is particularly important in the field of marketing.

Taking a service ecosystem perspective on value co-creation is useful as it seeks to offer a more holistic, dynamic, and systemic view of value co-creation (Wieland, Polese, Vargo, & Lusch, 2012). Wieland et al. (2012) suggest that value can be conceptualized in terms of a change in the viability of a system, and that complexity and openness are important attributes of system dynamics. Ecosystems, in their view, are (1) open and each instance of resource integration and value co-creation changes the nature of the system itself and thus provides a new context for the next iteration of value co-creation; (2) complex, in that every service ecosystem is both a provider and a client of service, is overlapping and is nested with other service ecosystems; and (3) that systems seek greater viability (i.e. survivability and well-being) though relational consonance (i.e. compatibility between system elements) and resonance (i.e. harmonious interactions among actors in the service ecosystem). Service ecosystems may range in size and scope from the smallest (the individual and their interactions with others) to the largest (the global economy; Wieland et al., 2012). This view reflects changes in systems thinking, which has evolved from first-order (or hard) conceptualizations of systems as anti-reductionist (the system cannot be understood purely in terms of the nature and constitution of its parts or components, but must recognize the relationships between them as well) to second-order (or soft) conceptualizations where systems are self-referential (or cybernetic: Mingers, 2014).

Two key concepts are related to resources in Service-Dominant Logic (S-D Logic): *integration* and *interaction* (Löbler, 2013; Peters et al., 2014). The underlying assumption is that all interactions of resources somehow lead to resource integration. The proposal of differing types of resource integration processes challenges this assumption. While considering interaction, a necessary condition for resource integration, not all interaction leads to resource integration, or indeed results in resource integration in the same way. Resources could simply interface, with no integrative processes taking place at all. On the other hand, interaction between resources can result in resource integration processes. Use of the philosophical concept of emergence makes a clear distinction between two such processes: instances of resource integration based on emergent relations between resources, and instances of resource integration based on summative relations between resources. For this reason, understanding resource integration as a process that results in either emergent or summative relations between resources has several key benefits, not least of which is the ability to differentiate clearly between types of resource integration processes and their results.

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The main contribution of this paper is to formulate a definition of resource integration that focuses on two different types of resource integration processes: one based on the concept of emergence and the other based on the concept of aggregation or summation. In addition to providing a concise definition of differing types of resource integration processes, this paper also explores the implications of this definition for understanding how the novel properties that arise from emergent resource integration processes operate, and how such properties link to resourceness and value co-creation in service ecosystems through the value assessment of the beneficiary.

In the next section, we explore the philosophical concept of emergence and discuss its key features related to understanding resource integration as either a summative or an emergent process. In the third section, we discuss how the concept of essentialism helps us to relate these types of resource integration processes to the appraisal of value, illustrating our discussion with the work of McColl-Kennedy, Vargo, Dagger, Sweeney, and van Kasteren (2012) on health care customer value co-creation practice styles. We then conclude our paper with implications for managerial practice and further research in the area of resource integration. We provide a glossary of terminology and sources as an appendix, which summarizes definitions of key terms.

2. Resource integration as emergent or summative processes

What exactly does the term "emergence" mean? Bhaskar (2008, p. 49) defines it thus: "In emergence, generally, new beings (entities, structures, totalities, concepts) are generated out of pre-existing material from which they could have been neither induced nor deduced." Smith (2010) asserts that emergence is the process of constituting a new entity with its own particular characteristics (i.e. structures, qualities, capacities, textures, mechanisms) through the interactive combination of other, different entities that are necessary to create the new entity but that do not contain its characteristics. In other words, in emergent processes, it is the relation or interaction of parts – not merely the parts themselves – that gives emergent properties their existence. Put simply, the emergent whole is more than the sum of its constituent parts. Thus, we define "emergence" as a process that generates new emergent properties (e.g. entities, structures, totalities, concepts, qualities, capacities, textures, mechanisms).

Therefore, while some researchers maintain that resource integration is the result of specific interactions (Ballantyne & Varey, 2006; Fyrberg & Jüriado, 2009), interaction alone provides an insufficient conceptual foundation for understanding resource integration. While interaction represents a *necessary* condition for resource integration processes, it is not in itself a *sufficient* condition for all instances of resource integration because interaction may result in two distinct kinds of effect.

According to the Stanford Encyclopaedia of Philosophy (2013), Mill (1843) coined the terms "homeopathic" and "heteropathic" for these two types of effect. Homopathic effects, and the laws that govern them, follow the principle of the composition of causes in which the total effect of several causes acting in concert is identical to the sum of the effects of each of those causes acting alone (Mill, 1843), later termed resultant effects (Lewes, 1873). For example, if two opposing forces exert pressure on an object, one from the north and one from the south, the final resting place of the object is exactly the same as if firstly the northern force had acted upon it, and then the southern force. Another example would be the nutritional benefits of eating a fruit salad. If you eat all the apple pieces first, and then the melon pieces, or if you eat a combination of apple and melon in each spoonful, the nutritional benefits are identical. In other words, it is an aggregative or summative effect in which the joint effect of several causes is simply the sum of their separate effects. This is *homopathic resource integration*, based on summative resource integration processes.

The second type of effect coined by Mill (1843), heteropathic effects, and the laws that govern them, are those in which the joint action of multiple causes is not merely the sum of effects of the relevant causes. While Mill (1843) considers both homopathic and heteropathic types of laws as causal laws and both such effects as causal interaction, it is the latter type of effect that the philosophical school known as the British Emergentists term, "emergent" (McLaughlin, 2008), and which is defined here as heteropathic resource integration, based on emergent resource integration processes.

This distinction led emergentists to propose two kinds of laws: intra-ordinal laws, which relate to events within an order, and trans-ordinal laws, in which higher-level properties emerge from lower-level ones. Such trans-ordinal laws relate to what Broad (1925) terms ultimate properties (i.e. attributes, qualities, features, characteristics, types), or those properties not deduced from the properties of the component parts. An example would be the "wetness" of water, an emergent property that cannot be attributed to the properties of hydrogen or oxygen in isolation, but which acts according to trans-ordinal laws. Such new emergent properties can, of course, become inputs into new resource integration processes (emergent or summative).

The concept of emergence makes a clear distinction between instances of heteropathic resource integration based on emergent processes where trans-ordinal effects and laws operate to create new emergent properties, and homopathic resource integration based on summative processes where intra-ordinal effects and laws operate to create a combination of the existing properties of the constituent parts alone. The following statement thus forms a starting point for analysis, as an axiom (or premise) rather than a proposition (Williams, 2012):

Premise 1: Processes based on either emergence (underpinned by trans-ordinal effects and laws that result in emergent relations between resources and new emergent properties) or summation (underpinned by intra-ordinal effects and laws that result in summative relations between resources and a combination of pre-existing properties) are both a necessary and a sufficient condition in distinguishing heteropathic from homopathic types of resource integration.

2.1. Key features of heteropathic and homopathic resource integration

Having identified the process of emergence as the key characteristic that distinguishes differing types of resource integration, other key features of the concept of emergence might help to clarify how heteropathic and homopathic resource integration differ. These are logical consequences (or corollaries; Williams, 2012) of Premise 1.

2.1.1. Non-reducibility

Heteropathic resource integration is fundamentally a non-reductionist process. The notion that emergent properties are both novel and unpredictable stems from the work of Alexander (1966) who maintains that a quality is novel in the sense that it has not occurred before and is unpredictable in the sense that it could not be predicted. It is not possible to explain the quality any further than this, and therefore, it is necessary to accept the quality with natural piety (Alexander, 1966). Novelty and unpredictability therefore form key features of an emergent property. As Smith (2010, p. 28) notes, "By trying to understand entities by reducing them to their component parts existing at lower levels, reductionists miss what are often the most important qualities of things, their irreducible emergent properties." Non-reducibility is also a key feature of complex service systems (Mingers, 2014; Wieland et al., 2012) in which a holistic view of value co-creation phenomena is required. Thus, the implication for understanding value co-creation in S-D Logic is that there may be instances where reducing value co-creation processes to their constituent components (i.e. actors, resources) is appropriate (for homopathic resource integration) and there may be instance where it is not (for heteropathic resource integration), because these component parts alone will not account for what emerges from the value co-creation process.

Lawson (2013) sees processes of emergence as primarily compositional, where components are organized rather than simply aggregated.