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An ecosystem service-dominant logic? – integrating the ecosystem service approach and the service-dominant logic

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ABSTRACT

Natural and business ecosystems are complex and dynamic service systems that interact through the utilization of ecosystem service offerings for human well-being. Currently, natural and business sciences have not developed a shared and common set of service-based terms or concepts for discussing ecosystem service offerings in the process of value co-creation. In this study, the ecosystem service approach was compared with marketing science's service-dominant logic. The terminology and concepts were harmonized, and the two approaches were then integrated into a service-dominant value creation (SVC) framework. The incorporation of natural ecosystems includes accounting for the flow of positive and negative impacts through associated value networks. Therefore, the term *value-in-impact* was proposed to describe these value flows. A case study of the global forest-based sector was then presented, demonstrating how to discuss current research challenges using the proposed framework. In conclusion, a shared service-dominant approach provides an opportunity for deeper inter-disciplinary discussion between natural and business sciences. This study represents a contribution towards the development of a holistic service science that includes consideration for natural ecosystems. The SVC framework also addresses many of the multidimensional challenges noted by previous sustainability frameworks.

1. Introduction

Numerous acute global change pressures are currently being exerted on natural ecosystems (Rockström et al., 2009). These pressures originate from and are driven by the economic activities of human societies, and threaten the value co-creation processes between firms and their beneficiaries (i.e., customers) (Carpenter et al., 2009). Within natural sciences, the Ecosystem Service (ES) approach has emerged to describe the benefits that humans obtain from natural and, in some cases, semi-natural ecosystems[1] for human well-being (de Groot et al., 2002; Fisher et al., 2009). According to this concept, natural ecosystems perform several functions that are useful to humans (e.g., provisioning of food, biomass, regulating water flows, global and local climate, and contributing to cultural values).

Notwithstanding the use of the term 'ecosystem services,' the ES approach has still largely failed to develop into a truly service-based concept. The ES literature defines 'service' as "an ecological function or process that is considered useful to human beings"

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[1] This distinction has been made given that this study also incorporates business literature where it has become common to use the terms "ecosystem" to refer to a 'service ecosystem' or a 'business ecosystem'.

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(Haines-Young and Potschin, 2010). In service and marketing sciences, the definition of 'service' is "the process of doing something beneficial for and in conjunction with some entity" (Vargo and Lusch, 2008a). Both of these definitions are highly complementary, and suggest that the ES approach is potentially an extension of service sciences. Berghäll et al. (2014) and Lusch and Vargo (2014) have previously identified this connection by noting the similarities between the ES approach and marketing sciences' service-dominant (SD) logic.

The SD logic reinterprets the process of value creation and co-creation, by shifting away from a goods-dominant (GD) logic (i.e., neo-classical, production-oriented) view to one based on service value creation (Vargo and Lusch, 2004). The GD logic view on value creation focuses on a firm embedding "value in 'goods' or 'services,' [and] value is 'added' by enhancing or increasing attributes" to the 'good' or 'services' (Vargo and Lusch, 2008a). In the GD view, value is measured in terms of nominal value exchanged (i.e., price for the 'services' or value-in-exchange). By contrast, the SD logic argues that value is co-created between all human actors (i.e., firms, individuals) through the value of using a 'service' (i.e., utilization or value-in-use) and determined individually through experience of the beneficiary (i.e., phenomenologically determined).

The ES approach has also sought to recognize a broader definition of value beyond only the monetary valuation of 'goods and services' (e.g., Polasky and Segerson, 2009; Spangenberg et al., 2014). Thus, the SD logic and ES approaches appear highly complementary; the main difference being the differing focus on service value flows. Within the ES approach, the focus is placed on flows between natural ecosystems and socio-economic networks, while the SD logic focuses largely on flows within socio-economic networks. Despite the similarities between the two approaches, the ES literature often adopts a GD logic view on value creation to address service provisioning challenges. For example, ES offerings are frequently referred to as ecosystem 'goods and services' (e.g., Wilson and Hoehn, 2006; Müller and Burkhard, 2012). Alternatively, the lack of an ES contribution to the ongoing discourse in service sciences means that the complex socio-ecological relationship tends to become oversimplified within the SD logic (e.g., Lusch and Vargo, 2006; Vargo and Lusch, 2011).

Bridging these two bodies of literature is timely and important. A common set of terminology and concepts could facilitate a shared approach to addressing the impacts of companies on ES offerings, and improve their value co-creation processes (Whiteman et al., 2013; Waage and Kester, 2014; D'Amato et al., 2014). A shared lexicon would also facilitate the discussion about ES trade-offs and multi-level governance challenges that firms and ecosystem managers both face (Heuer, 2011; Whiteman et al., 2013).

The purpose of this study, therefore, is to establish a service-based understanding of value creation with respect to ES offerings. To start, a review of the SD logic and ES approaches is given in Section 2, and conflicts and gaps in terminology and concepts are resolved. The two approaches are then integrated into a conceptual framework for service value flows between the economy, society, and the environment in Section 3. The proposed service-dominant value creation (SVC) framework acts as a guide for future interdisciplinary discourse on the ES value creation processes. The multidimensional (i.e., temporal and spatial) nature of the SVC framework made it difficult to ignore the obvious connection to sustainability science (i.e., sustainable development) (e.g., Lozano, 2008). Therefore, the implications that an SD approach has for that field of study are also discussed. Also, in Section 3 the term *value-in-impact* is proposed for discussing the positive and negative ES provisioning impacts throughout business ecosystems and value networks. Finally, a case application of the SVC framework is provided for the global forest-based sector in Section 4. A perspective from this sector is highly applicable, as it offers cases of environmental self-regulation and a history of continuous engagement and integration of stakeholder groups (Aaltonen and Kujala, 2010; Prakash and Potoski, 2012; Toppinen et al., 2014).

2. Harmonizing the ecosystem service and service-dominant approaches

By harmonizing the language used in business and natural sciences, there is an increased opportunity for collaboration and communication between those fields of study. To facilitate this process for readers unfamiliar with one or both of those approaches, a brief overview of the differences between the GD and SD logics and the ES cascade framework are provided. It is not possible, however, to extensively summarize each of the approaches here. A more in-depth overview of the SD logic is provided by Lusch and Vargo (2014). Moreover, Fisher et al. (2009) and Haines-Young and Potschin (2010, 2011) both provide important discussions on the definition and classification of ES. For ease of reference, all acronyms and terms that were used throughout this article have been compiled in Tables 1 and 2 respectively.

The four axioms and six additional foundational premises of the SD logic (Vargo and Lusch, 2004, 2008b; Lusch and Vargo, 2014) state that:

1. "Service is the fundamental basis of exchange"
   a. "Indirect exchange masks the fundamental basis of exchange"
   b. Goods are a vehicle or "distribution mechanism for service provision"
   c. "Operant resources are the fundamental source of competitive advantage"
   d. "All economies are service economies"
2. "The customer is always a co-creator of value"
   a. "The enterprise can only make value propositions"
   b. "A service-centered view is customer oriented and relational"
3. "All economic and social actors are resource integrators"
4. "Value is always uniquely and phenomenologically determined by the beneficiary"

These axioms contrast with the GD logic, where value-in-exchange is the basis for estimating the value of 'goods' or 'services' and value is produced by firms and brought to a market through the exchange of other goods or money (Table 3) (Vargo et al., 2008). The GD logic identifies 'final' customers as the receivers of value, and interactions in the market occur mainly between 'producers' and 'consumers' (Lusch and Vargo, 2014). Value is embedded in a produced good, and the focus is on the supply and demand of goods via price (Vargo and Lusch, 2011). Therefore, value is created by firms (i.e., production) and destroyed (i.e., consumed) by the 'consumer' (Ple and Chumpitaz Caceres, 2010).

Table 1
A list of acronyms used in this article.

Acronym	Term
CSR/CR/CS	Corporate Social Responsibility/Corporate Responsibility/Corporate Sustainability
CSV	Creating Shared Value
DPSIR	*D*rivers, *P*ressures, State, *I*mpact, *R*esponse
EIA	Environmental Impact Assessment
ES	Ecosystem service
GD	Goods-dominant
GISCAME	*G*eographic *I*nformation *S*ystem, *C*ellular *A*utomation, *M*ulti *C*riteria *E*valuation
PES	Payments for ecosystem services
SD	Service-dominant

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