



Title: *Towards a common framework for knowledge co-creation: opportunities for collaboration between Service Science and Sustainability Science*

Track: *Viable Systems Approach*

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<Viable Systems Approach>

ABSTRACT

Purpose - Sustainability and Sustainable Development should be the top priorities of a Smarter Planet. On the basis of this statement, our aim is to highlight opportunities of knowledge co-creation that derive from the integration of the research efforts of two communities of scientists, scholars and professionals, recognized worldwide that share a common vision of a smarter and more sustainable planet: *Service Science* and *Sustainability Science*.

Design/Methodology/approach - By adopting a systems thinking view, and specifically the *Viable Systems Approach (VSA)*, the paper analyses the scientific positioning of Service Science and Sustainability Science, and, through a Service-Dominant Logic co-creation approach, seeks commonalities that can highlight opportunities of fruitful scientific collaboration.

Findings - The paper evidences significant convergence in the views and scientific positioning of Service Science and Sustainability Science, clarifying why the two communities should collaborate by integrating knowledge resources and sharing advances.

By promoting a boundary crossing interaction and creating interface connections *within* and *between* the two scientific communities, gaps can be removed and relevant bridging elements explored and exploited in a shared effort targeted to realizing a smarter and more sustainable world. The common inter- and trans-disciplinary as well as solution-oriented research approach appears a key methodological element of convergence for developing a shared framework of reference coherently.

A “3Pillars” Knowledge Co-creation Framework for Service & Sustainability Science integrates the findings of our 3-step interpretative pathway, into a consistent whole, a key to creating convergence in multi-disciplinary knowledge co-creation contexts. This framework proposes an original vision of sustainability which integrates the Triple Helix and the Triple Bottom Line models into a co-creation framework to support knowledge design and creation processes through which University-Industry-Government collaboration, necessary to address the challenge of a smarter and sustainable world, can be tried, tested and further developed.

Research implications - The paper opens up new research pathways launching a Science-led call for collaboration that overcomes the traditional divide between knowledge domains and communities fostering a shared effort to address the challenges of sustainability within a smarter planet and to put into practice inter-disciplinary collaboration in order to develop a common framework for Service and Sustainability Sciences.

Practical implications - The paper provides insights for rethinking research, development and management approaches as well as education programs by placing sustainability at the center of the scientific, governmental and business agendas. It also sheds light on the criticalities and barriers of mutual learning systems.

Originality/value - The paper develops an original analytical approach that integrates the Triple Helix and the Triple Bottom Line models into a coherent co-creation framework for sustainability in which Service Science and Sustainability Science play key roles by integrating their knowledge resources.

Keywords - Service Science, Sustainability Science, Viable Systems Approach, Service-Dominant logic, Knowledge Co-creation.

Paper type – Conceptual paper

1. Introduction

Sustainability and Sustainable Development are becoming increasingly relevant in the global agenda of governments as well as businesses and civil society. They should be among the top priorities of what we would consider a really Smarter Planet.

Two emerging research streams are targeted to the challenge of developing inter- and trans-disciplinary bodies of knowledge which could contribute to the improvement of life conditions of individuals and organizations: the focus of the first is on making our planet smarter; the other on making it more sustainable. The research questions we posit are: *Is there a relationship between smartness and sustainability? Is a smarter planet also more sustainable?*

On the basis of these questions, by adopting a systems thinking view and a co-creation logic, our paper investigates the basic elements of the conceptual and theoretical frameworks of *Service Science*, on the one hand, and *Sustainability Science*, on the other, seeking commonalities that can highlight prospects of fruitful scientific collaboration.

Accordingly, the aim of this exploration is to identify opportunities of knowledge co-creation which can derive from the integration of the research efforts of these two worldwide recognized communities of scientists, scholars and professionals sharing a common vision of a smarter and more sustainable planet.

Both Service Science and Sustainability Science communities call for scientific collaboration among scholars as well as practitioners. We believe that by identifying and making apparent the potential convergence between the two research fields, it will be possible to bridge the current divide. Such bridging elements could be integrated to develop a common framework to support knowledge co-design and co-creation processes through which University-Industry-Government collaboration, necessary to address the challenge of a smarter and sustainable world, can be tried, tested and further developed.

This paper is the fruit of collaboration between scholars and researchers with varying disciplinary backgrounds, all sharing the vision of a more sustainable world. Following the discussion emerging at the Session “Co-design and Co-creation of Knowledge for Sustainability”, organized by the *Italian Association for Sustainability Science (IASS)* during the *International Conference of Sustainability Science (ICSS)*, held in January 2015 at the University of United Nations (UNU) in Tokyo (<http://sussci.org/events/>), the team decided to work together to launch a Science-led call for collaboration among scientists as well as practitioners and educators to contribute towards overcoming the traditional divide between knowledge domains and communities and to foster a shared effort for addressing the challenges of sustainability and a smarter planet.

Our interpretative methodology builds upon common roots in systems thinking (von Bertalanffy, 1968). Systems thinking and, specifically, the *Viable Systems Approach (VSA)* are implicitly adopted as meta-level frameworks that provide general interpretation schemes used to abstract general principles and concepts from the investigated disciplinary domains so as to bridge them. On this methodological basis, we apply the approach of the *Service Dominant-logic (SDL)* to achieve resource integration and collaboration in the context of knowledge creation for sustainability.

The paper is organized as follows: first the views and the scientific positioning of Service Science and Sustainability Science are presented; then, commonalities and convergences between the two are identified by adopting a systems thinking approach to overcome current distances; subsequently, an integrated framework is developed to foster knowledge resources integration and co-creation between the two scientific communities in a shared effort to promote sustainability and sustainable development; finally, the main practical and research implications are briefly outlined.

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