



ELSEVIER

Contents lists available at ScienceDirect

## Technological Forecasting &amp; Social Change

journal homepage: [www.elsevier.com/locate/techfore](http://www.elsevier.com/locate/techfore)

# Innovation, entrepreneurial, knowledge, and business ecosystems: Old wine in new bottles?

Laurent Scaringella<sup>a,\*</sup>, Agnieszka Radziwon<sup>b</sup>

<sup>a</sup> Rennes School of Business, 2 rue d'Arbrissel - CS 76522, 35000 Rennes Cedex, France

<sup>b</sup> Department of Business Development and Technology, Aarhus University, Denmark

## A B S T R A C T

Rooted in the territorial approach, this theoretical paper offers a systematic literature review (SLR) of ecosystems based on a selection of 104 articles and books and their archetypes. First, we identify and discuss the four main types of ecosystems – business, innovation, entrepreneurial, and knowledge ecosystems – and indicate the presence of other transversal concepts. Second, we provide an overview of related and well-established theories from the territorial approach that have been largely omitted although they are ecosystem archetypes. Third, we identify the invariants across the four diverging streams from the ecosystem approach and the seven diverging streams from the territorial approach. Finally, we propose a research framework based on the comparison between key invariants from both approaches and discuss their similarities and differences that could serve as a foundation for future empirical research. This study therefore links the ecosystem and territorial approaches under the complex evolutionary system umbrella by creating a theoretical framework that reflects the complex interconnection between models, theories, and emerging concepts.

## 1. Introduction

Only two decades after the introduction of an *ecosystem* parallel (Moore, 1993) in the management field, researchers have started to use this term more frequently. According to Web of Science (WoS), until 2015, one could only find 39 articles exclusively related to business, management, and economics that responded to the search string 'ecosystem\*' AND 'business\*' AND 'innovat\*'. In contrast, in 2015 and 2016 alone, one could find 21 and 26 new publications, respectively. This rapid growth justifies the recent emerging discussions, such as by De Vasconcelos Gomes et al. (2016), Dedehayir et al. (2016), Oh et al. (2016), and Ritala and Almpantopoulou (2017).

Scholars contributed to the early development of research in this field by first considering the concept of the *business ecosystem* (Moore, 1993), then the *innovation ecosystem* (Adner, 2006) and the *entrepreneurial ecosystem* (Prahalad, 2005), and most recently, the *knowledge (based) ecosystem* (van der Borgh et al., 2012).<sup>1</sup> We ask, are those concepts complementary, supplementary, competing, convergent, or divergent? Because of its relatively broad conceptual scope, the ecosystem term runs the risk of being overused and only temporarily settling into the literature until it goes out of fashion (Oh et al., 2016).

Therefore, there is a need for conducting a systematic literature review (SLR) to identify the common invariants across the diverging streams of literature dealing with ecosystems to better structure the existing knowledge and avoid potential misuse of this term.

Ecosystems have been studied through the lens of different theories, such as the institutional theory (DiMaggio and Powell, 1983) or the resource dependency theory (Pfeffer and Salancik, 1978), and at three different levels of analysis: the industrial or network level (Nambisan and Sawhney, 2011; Teece, 2007), the firm level (Zott and Amit, 2010), and the individual level (Nambisan and Baron, 2013). Furthermore, scholars have linked the concept of ecosystems with open innovation (Chesbrough, 2003) or dynamic capabilities (Teece, 2007). Nevertheless, more theoretical works grounded in well-established theories are urgently needed to strengthen the foundation of the field of ecosystems.

However, following Mitleton-Kelly's (2003) perception of the business ecosystem as a complex evolutionary system, we see a promising direction in coupling the ecosystem approach with the literature that deals with the territorial approach. Exploring the ecosystems' roots and archetypes and anchoring the growing literature on ecosystems to more established theories can contribute to greater legitimacy. More

\* Corresponding author.

E-mail addresses: [laurent.scaringella@rennes-sb.com](mailto:laurent.scaringella@rennes-sb.com) (L. Scaringella), [agra@btech.au.dk](mailto:agra@btech.au.dk) (A. Radziwon).

<sup>1</sup> To simplify the terminology used in the article, we will often refer to the extended notion of a business, entrepreneurial, innovation, or knowledge ecosystem by using the shortcut term *ecosystem*, unless we are providing some insights into a particular literature stream.

<https://doi.org/10.1016/j.techfore.2017.09.023>

Received 23 December 2015; Received in revised form 13 September 2017; Accepted 25 September 2017  
0040-1625/ © 2017 Elsevier Inc. All rights reserved.

precisely, what is needed is an investigation into the similarities and differences between the ecosystem approach and the territorial approach as well as development of a common research framework that will constitute a sound base for further research.

The objectives of this study are (1) to explore and present the terminology that management scholars use when referring to the various streams of research dedicated to ecosystems by systematically reviewing a wide range of papers from business, management, and economics; (2) to list the invariants that appear unchanged despite the timing and framing of a literature stream; (3) to link the ecosystems' growing stream of literature to the well-established and mature literature dealing with the territorial approach; and (4) to build the framework that will be a base for further research.

In order to reach these objectives, we address the following research question: *What are the conceptualizations of the ecosystem approach, its invariants, and its links with the territorial approach?*

Our intended contribution is (1) to build a common understanding of the term ecosystem by identifying and discussing four main types of ecosystems; (2) to define the ecosystems invariants and thus fill the gaps between various ecosystem approaches and conceptualizations; (3) to position the literature on ecosystems at the intersection of not only business and management but also the economic geography by identifying and exploring the ecosystems archetypes, such as the territorial approaches; and (4) to bridge business and territorial approaches by proposing a research framework based on the key invariants that will constitute a conceptual base for identifying the future research agenda.

The article is structured as follows: first, we introduce the review design of the systematic literature review on ecosystems; second, we characterize the emergence of the ecosystem approach along with four major streams of literature; third, we present the ecosystems archetypes through the territorial approach; fourth, we scrutinize, analyze, and combine the ecosystems and territorial approaches to discuss a set of invariants by taking part in a research framework that bridges these two perspectives; and finally, we proceed to the conclusion and propose further research.

## 2. Review design

The concept of an ecosystem is neither well-defined nor well-established. As a term, it emerges in various literature streams within biology, environmental engineering, agriculture, computer science, marketing, management, and economics. Therefore, before further conceptualizations and discussions, there is a strong need to clarify the different taxonomies, which requires the use of a structured literature review.

In this study, we conducted an SLR following [Tranfield et al.'s \(2003\)](#) three stages of systematic review and [Greenhalgh et al.'s \(2005\)](#) metanarrative review phases. We specifically explored peer-reviewed research studies related to ecosystems from a management perspective. [Fig. 1](#) presents our entire literature review process with all its objectives, steps, and outcomes. The seven steps that will be elaborated upon are: 1) initial search, 2) scoping studies, 3) article search, 4) article selection, 5) reference backtracking, 6) content analysis, and 7) invariant analysis.

### 2.1. Search protocol

The database selection process concluded with the selection of the WoS database. We considered the Ulrich list, the European Research Index for the Humanities (ERIH), the Norwegian reference list, the Australian Excellence in Research list (ERA), WoS, and Scopus. This raises a question about the academic relevance and quality of those journal lists. The incompleteness of WoS versus the inclusiveness of the non-scholarly content in Scopus are some of the issues presented by [Hicks and Wang \(2011\)](#). The following three arguments made us choose

WoS instead of Scopus. First, [Ball and Tunger \(2006\)](#) argued that WoS has the highest number of quality journals and articles and, consequently, can be considered the worldwide number one. Second, [Bauer and Bakalbasi \(2005\)](#) contended that WoS best retrieves older sources. Third, [Hicks and Wang \(2011\)](#) used Venn diagrams to represent the coverage across the various lists. The results indicate that almost all journals included in WoS are also included in Scopus and other lists. The authors argued that it is necessary to achieve a 100% overlap between the lists to ensure consensus on what is considered scholarly literature within social sciences and humanities. Being the most restrictive, WoS also seems to be the most appropriate because it only includes well-recognized content.

Subsequently, we performed a few initial searches (Step 1) based on the preliminary list of search keywords and started the scoping studies (Step 2). Following [Tranfield et al. \(2003\)](#), we initially considered journals and also conference proceedings, industry trials, and internet sources, but after reviewing the content of some of these records, we resolved to narrow our search criteria. Consequently, to generate the most "reliable knowledge" ([Tranfield et al., 2003, p. 5](#)), we decided to exclude proceedings and only focus on peer-reviewed articles and books (see [Table 1](#)).

Since the term ecosystem is widely used, especially in environmental sciences and in computer science, we modified the search criteria to reduce our search to management, business, and economics studies. An overview of all inclusion and exclusion criteria is outlined in [Table 1](#).

In one of the oldest studies of ecosystems in the field of management, [Moore \(1993\)](#) introduced the term *business ecosystem*, which became a starting point for our search. Later studies further developed the ecosystem concept by focusing on innovation ([Adner, 2006](#); [Adner and Kapoor, 2010](#)). That is why 'ecosystem\*', 'business\*' and 'innovat\*' were the most frequently used keywords. Other keywords such as 'entr\*' was added after the initial scoping studies had identified another type of ecosystem, namely the entrepreneurial/entrepreneurship ecosystem. Finally, 'network\*' as a keyword was added after consulting a list of potential keywords by scholars having published influential studies in the field, as explained in the data collection discussion.

### 2.2. Data collection

During the process of searching for and collecting articles (Step 3), we also identified the most influential (most-cited) studies (articles and/or books) and sought advice from experts in the field (as suggested by [Greenhalgh et al., 2004](#)) by contacting the authors from such studies to collect a set of keywords/terms that they associate with ecosystems. The most frequent terms – platforms, innovation, networks, and orchestration – were used in the data collection, the (sub)categorization, and the process of identifying the ecosystem invariants.

In order to get the most relevant results, we conducted three rounds of searches:

- 1) the core search (searches 1–3), which gave us a total of 133 different records;
- 2) the supporting searches (searches 4–6), which numbered 153 records; and
- 3) the saturation check searches (searches 7–10), which totaled 354 records, but only gave us 8 additional core items.

All ten searches totaled 35 primary, 30 secondary, 117 peripheral, and 172 non-relevant records. All the data (number of records) are presented in [Appendix I](#).

### 2.3. Data categorization

In order to identify the core papers, we started the selection process by clustering papers into several subdivisions. To conduct the selection

Download English Version:

<https://daneshyari.com/en/article/13404489>

Download Persian Version:

<https://daneshyari.com/article/13404489>

[Daneshyari.com](https://daneshyari.com)