TOURISM POLICIES AND FASHION, ART AND FOOD INDUSTRIES

Sustainability transitions

Lecture 21

Pasquale Marcello Falcone

Università degli Studi di Napoli Parthenope

Learning Objectives

- ✓ Socio-technical and sustainability transition
- ✓ Historical perspective
- ✓ Conceptual approaches in transition studies:
  - Technological innovation system (TIS)
  - Transition management (TM)
  - Strategic niche management (SNM)
  - Multi-level perspective (MLP)

Introduction

Sectors like energy supply, water supply, or transportation can be conceptualized as **socio-technical systems**.

A **socio-technical transition** is a set of processes that lead to a fundamental shift in socio-technical systems (Geels and Schot, 2010).

Transitions involve a broad range of actors and typically unfold over considerable time-spans.

Historical examples of socio-technical transitions include the shift from carriages to automobiles (Geels, 2005).

Introduction

- Socio-technical transitions differ from technological transitions in that they include changes in user practices and institutional (e.g., regulatory and cultural) structures, in addition to the technological dimension.
- Sustainability transitions are long-term, multi-dimensional, and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption.

From historical transitions to sustainability transitions

During the last 50 years, the concept of transition assumed great relevance in areas such as political and power relations to identify the changes that have taken place in economic and social views of some countries.

Sustainability transitions (ST) differ from historical transitions in the following aspects:

- long time effects
- composite solutions
- normative aims

ST need to be encouraged and supported by political as well as regulatory actors.

Conceptual approaches on transitions

In theoretical terms, four frameworks so far have achieved quite prominence in transition studies. These include:

1. Technological Innovation Systems
2. Transition Management
3. Multi-Level Perspective
4. Strategic Niche Management

Technological Innovation System (TIS)

The system components of TIS are called structures and are divided into:

- **Actors.** They involve organizations contributing to a technology, as a developer or adopter, or indirectly as a regulator, financier, etc.
- **Institutions.** They are at the core of the innovation system concept. It is common to consider institutions as "the rules of the game" in a socio-technical system.
- **Technological factors.** Technological structures consist of artefacts and the technological infrastructures in which they are integrated.

TIS: Innovation system functions

Functions to be applied when mapping the key activities in innovation system :

- entrepreneurial activities
- knowledge development
- knowledge diffusion through networks
- guidance of the search
- market formation
- resources mobilization
- creation of legitimacy/counteract resistance to change

Functions influence each other. Fulfilment of a certain function quite likely has its effects on the fulfilment of other functions.

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Transition Management (TM)

In the TM framework, four different governance levels are recognized to be significant for sociotechnical transitions:

- strategic level
- tactical level
- operational level
- reflexive level

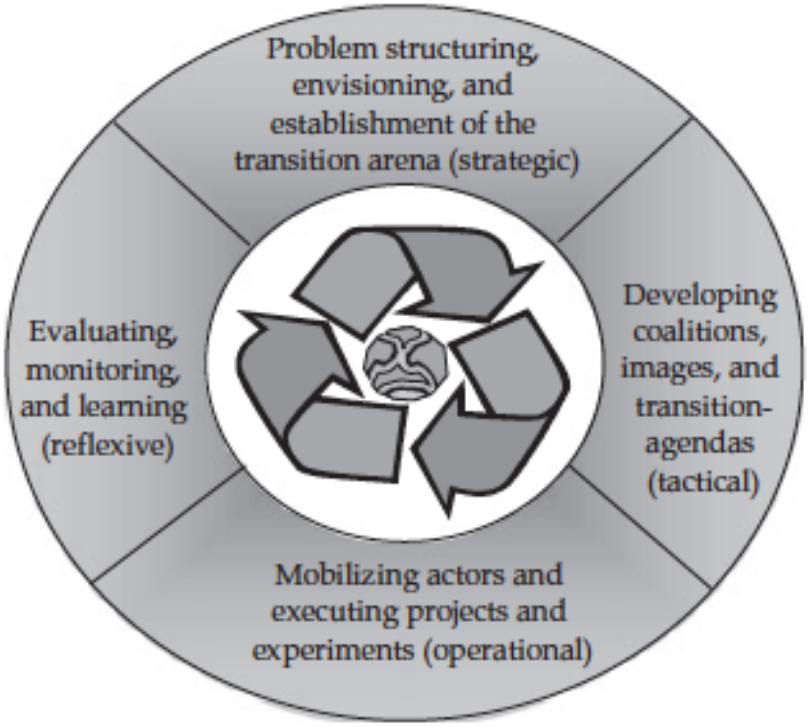


Figure 1. *Transition Management Cycle (Loorbach, 2010)*

Strategic Niche Management (SNM)

Kemp et al. (1998) proposed the following definition:

”SNM is the creation, development and controlled phase-out of protected spaces for the development and use of promising technologies by means of experimentation, with the aim of (I) learning about the desirability of the new technology and (II) enhancing the further development and the rate of application of the new technology.”

… SNM is thus a concentrated effort to develop protected spaces for certain applications of a new technology.

Niche internal processes

Grounded on a series of considerations from innovation studies, three internal mechanisms have been single out for technological niche to succeed:

(i) ***expectations*** considered crucial for niche development because they provide direction to learning processes.

(ii) ***learning process*** at multiple dimension (technical, cultural, infrastructural, societal and environmental).

(iii) ***network formation*** to create a constituency behind the new technology.

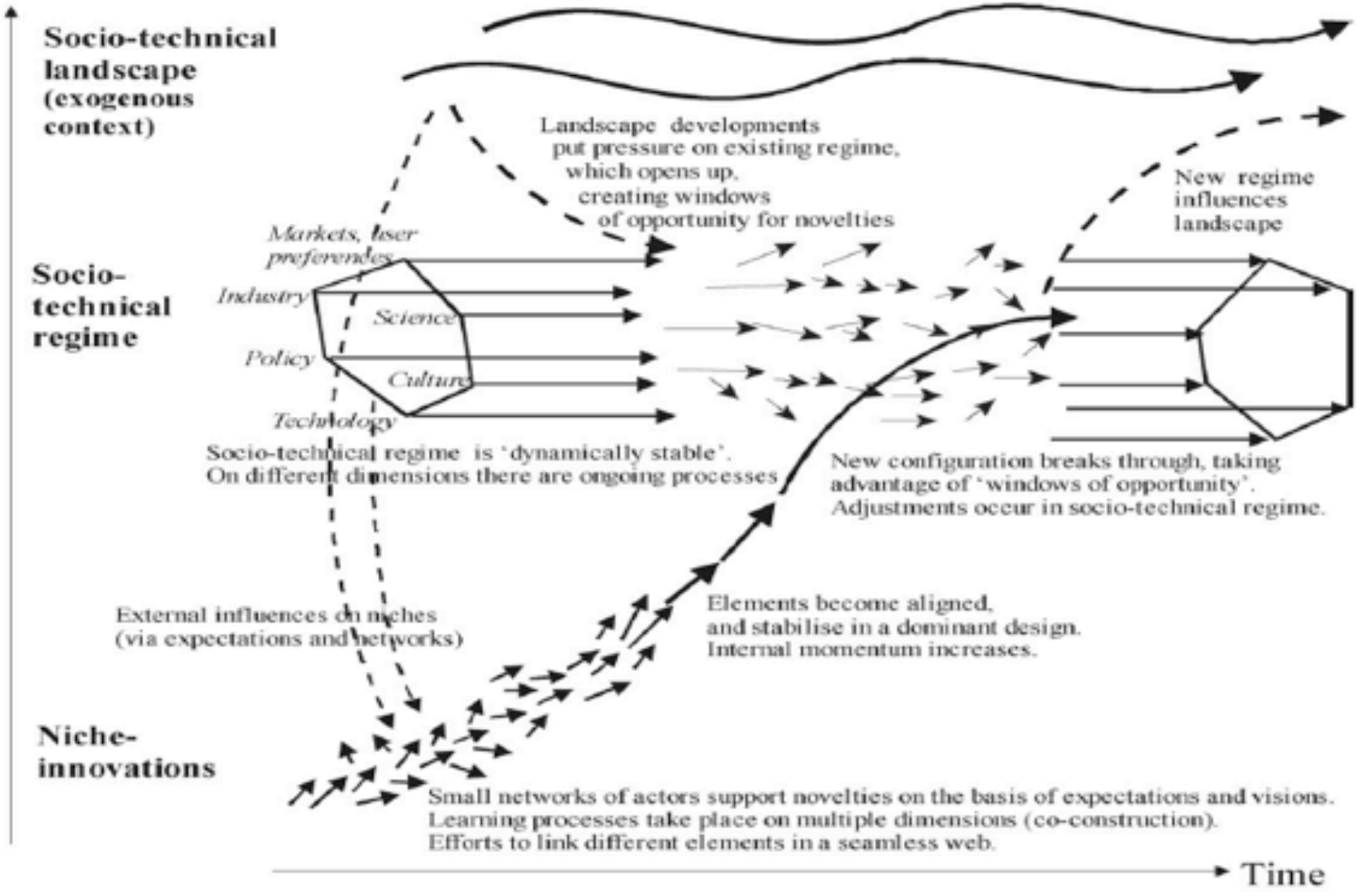
Multi-level perspective (MLP)

As the name implies, the MLP posits three analytical and heuristic levels on which processes interact and align to result in socio-technical system transformations:

- **niche** (the locus for radical innovations)
- socio-technical **regime** (the locus of established practices and associated rules that stabilize existing systems)
- and an exogenous sociotechnical **landscape**

MLP attributes socio-technical transitions to the interaction of stabilising forces at the regime level with destabilising forces from both the landscape and niche levels.

MLP on socio-technical transitions



Transition pathways

Four transition pathways:

i. **Transformation**: A socio-technical regime that changes without the emergence of a monopolising technology.

ii. **De-alignment and Re-alignment**: Weaknesses in the regime sees the advent of competing new technologies leading to a dominant model. (e.g. the automobile replacing the horse as the primary means of land transport).

iii. **Technological substitution**: An incumbent technology is replaced by a radical innovation resulting in a new socio-technical regime.

iv. **Re-configuration**: When multiple, interlinked technologies are replaced by a similarly linked alternative set.

Contacts and office hours

Contacts

- **Email:** pasquale.falcone@uniparthenope.it
- **Tel.:** 0815474127
- **Web page:** www.pmfalcone.eu

Office Hours

- **Day and time:** Tuesday from 11:00 to 12:00
- **Place:** Room 309, III Piano Palazzo Pacanowski.