A discussion on the appropriateness of the employment of the Complex Adaptive Systems theory for the research of Town-Centre Management

Abstract

The aim of this conference paper is to explore the idea of researching, analysing, presenting, and most importantly understanding town-centres as a complex adaptive system (CAS). Numerous researchers, scholars and practitioners, have discussed and highlighted the anthropomorphic characteristics of town-centres; some making a linguistic transcendence and some others in their attempt to describe relationships that move beyond the traditional norms of organisations. Wrigley and Lambiri (2014, p.15) have stressed the emergence of "*symbiotic relationships*" between corporate retailers and local independent stores stating also the gap in the research that will assess this issue. In the same study they concluded (ibid) that town centres can be viewed as "highly complex ecosystems with myriad capacities to adjust to change". Portas (2012, p.14) in her review on the future of the high-streets in a linguistic overrun she suggests that her vision is to "breathe life" back to the high-streets. The application of complexity theory in the organisational analysis is well-established however it has never been used to explore town-centre dynamics. This conceptual paper relates the fundamental ideas of complexity theory to town-centres and provides a framework for discussion of the systemic characteristics of stakeholders' integration within them.

Keywords: Town-Centre Management, Complex Adaptive Systems, Retail Evolution

Introduction

Town-centre management (TCM), and particularly the future of the retail town-centres, is among the most important areas of scholarly and practitioner research. Recent scholar

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research outputs of Parker, Ntounis, Quin, and Grime (2014) from their ESRC funded "High Street UK 2020" project indicate the complexity of TCM and the interrelation among numerous factors that influence their performance. Portas (2011), in her government commissioned review of the high streets, identified another set of factors that affect the seamless performance and are essential to be developed in order high-streets to stay vibrant and sustainable. Wrigley and Lambiri (2014), in their report for the ESRC funded project "The Great British High Street" have found that successful high streets will be the ones that will understand the emerging relationships within the town-centres and the high-streets that anyway shift away from the traditional retail provision to services of all types. Medway, Warnaby, Bennison, and Alexander (2000), identified over twenty stakeholders that are involved in the operation and performance of the high-streets categorising them into three categories; namely the public sector, the private sector, and the voluntary sector. Powe, Hart, and Bek (2009), reported that within the contemporary *open societies* (p.316) town centres have to persuade visitors, that are potential users and/or consumers of the provided products and services, to choose them over other town-centres but also other types of physical and virtual retail agglomerations. This is consistent with findings from previous research, for example Thomas and Bromley (2002) found that modern out-of-town retail establishments pose a substantial threat for the old and traditional town-centre retailing while Weltevreden (2007) and Dennis, Harris, and Sandhu (2002) made similar conclusion concerning the raising interest of consumers for the e-retailers, particularly during and after the great recession.

Even though this research area has attracted a lot of interest and a great number of factors influencing the future of town-centres has been identified, the relationship and interaction among them has not been mapped in a holistic framework that will move beyond the description of the factors to the complex relationships among them and the distinctiveness of the properties that emerge from the integration of the factors within one working organisation. This is furthermore enforced by Wrigley and Lambiri (2014) who suggested that the emerging forms of symbiotic relationships among the stakeholders of the town-centres have not been assessed. Viewing town-centres as living organisations with human characteristics, such as history, memory, evolution, life-cycles, preferences relates to systemic approaches and particularly to complexity and chaos theory that views systems as organisations that evolve as a result of planned and random choices that happen from them and for them. The use of complexity theory in the organisational analysis of retail location decisions is a new domain and few scholars have conducted research on this area. Theodoridis and Bennison (2009) and Wood and Reynolds (2013) have approached organisation based locational activity from a complex point of view however it is only Wrigley and Dolega (2011) to the authors knowledge that have approached the resilience attribute of the town-centre from the complex adaptive system point of view. This conference paper reports the initial conceptual considerations of the authors that aim to make a step further and provide a framework of analysis that will map all the potential stakeholders of the town-centres and the interactions among them. Evidently, town-centres are unique as any other organisation is, and therefore it is not the intention of the authors to produce a universal generalisable solution to the issue of understanding town-centres behaviour. However, it is their intention to shift the interest of the debate of the future of the town-centres to the holistic organisational nature of them rather than viewing them as a collection of incremental, and perhaps related, factors. This conference paper will introduce the basic concepts of complex adaptive systems and relate them to the contemporary town-centre management issues. As this is work in progress, this paper will be followed by a conceptual paper on the methodological considerations of doing research to inform complexity theorising and a

research paper where complex adaptive system thinking will be employed to holistically map town-centre evolution.

Town-centre management: The current debates

Warnaby, Alexander, and Medway (1998, 17) synthesised a number of different definitions of TCM to propose that:

> *"Town centre management is the search for competitive advantage through the maintenance and/or strategic development of both private areas and interests within town centres, initiated and undertaken by stakeholders drawn from a combination of the public, private and voluntary sectors."*

However, more recently, the strategic role of the town-centre manager is highlighted and as Whyatt (2004, 352) noted TCM concerns the:

> *"...gathering and sharing market information, enabling stakeholders to work together in the strategic planning process, setting up formal and informal communication and social networks between partners, training the town's stakeholder employees to implement the regeneration strategy and maintain a marketing orientation, and evaluating success, in order to both motivate all involved and to assess progress"*

The organisational dimension of TCM is highlighted by a number of scholars. Warnaby, Alexander, and Medway (1998) stressed that the initiation and development of town-centre management teams is defined by their organisational structure. Interestingly, in earlier attempts to define TCM the focus was on the manager's mission to promote, manage, and develop the town centre (Stansbury 1991) while later the focus shifted to the retailers' (Medway et al. 1999, Medway et al. 2000, Warnaby, Bennison, and Davies 2005) or the wider public sector (Cook 2009) involvement. Cook (2010) suggested that research shall focus on the introduction, evolution, and social relationships of the TCMs and as Wrigley and Lambiri (2014) suggested understanding users' interaction with the town-centre, which is more complex than a simple functional one will improve its performance. McAteer and Stephens (2011) referred to TCM as a process that enables various stakeholders to interact towards a common target, the vitality and viability of towns, and as Warnaby, Bennison, and Davies (2005) suggested it is an organised way to compete against alternative locations.

The Association of Town Centre Management (nd) suggested that TCM can involve a number of different and diverse in some cases activities:

- create environments that are clean and safe by investing in maintenance and security
- improve transport, parking, orientation and accessibility
- add vitality through professional marketing and events programmes
- stimulate growth by inward investment and development and through work with existing businesses
- develop branding that stresses distinctiveness and changes perceptions
- celebrate local heritage through tourism and destination management

- expand opportunities through developing training and employment programmes
- increase choice and diversity by promoting and integrating new amenities, residential development and the night-time economy
- enhance quality through public art and major infrastructure improvements to the public realm
- ensure that the town or city centre is welcoming to all and an experience worth having

And they also maintain that:

> *Centre management initiatives are bringing about real change in our towns and cities. At one level we are seeing an improvement in environmental quality with planting, greening, cleansing and community safety schemes, and this is making these centres more attractive places to visit or in which to trade. The more strategic initiatives are playing a key role in attracting substantial investment into the centre; in helping to resolve transport and access deficiencies; in making centres places people want to live; and in creating vibrant trading and business environments.*

However, it remains to be seen whether the change that ATCM is one that is linear and predicted or the forces of change operate separately and unpredictably (Wrigley and Lambiri 2014) and relate to various environmental issues such as the massive evolution of online trading, the competition from out-of-town retailers, and the changing consumer behaviour that still looks to balance after the recession (Wrigley and Lambiri 2014). Their findings are similar to Powe, Hart, and Bek (2009) who also identified that town-centres are affected by the increase of the access of people to transport means, which subsequently created a greater need for parking space that is usually considered to be the biggest problem for the attractiveness of a town-centre, the changes in the planning policies that are related to the out-of-town retailing, and consumers' need to consume the place rather than consume in a place. These, related to the findings of Hart, Stachow, and Cadogan (2013) on the factors that create the town-centre image where the retail assortment, the atmosphere, and the accessibility to/from the place top consumers' preference, suggest that TCM is in reality a complex system[1] that is influenced by a number of direct and indirect stakeholders that need to be researched, ordered, and mapped.

Complex adaptive systems: Their characteristics

There is a number of books and other scholar publications that discuss in detail the characteristics of the complex adaptive systems (CAS) (see Mitleton-Kelly, 2003 for a comprehensive review). The purpose of this section of the paper is to discuss the major characteristics of complex adaptive systems from a town-centre management point of view. It is also the purpose of the authors to stress and explain that theories of complexity are a way of thinking and viewing the world rather than an *ad-hoc* solution to a management problem.

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1 Not to mention that intentionally in this paper there is no reference to the funding of the

TCM scheme, public, private or joint as this will complicate the debate even more.

1. The first characteristic of the CAS is the *connectivity* and *interdependence* of its parts. Anderson (1999) stressed that CAS are made by parts that are connected together and as a schema find their role within a larger environment. Comunian (2010) found that urban economies can benefit for the small and large scale structures that emerge when an organisation faces a challenge. This benefit can be either tacit or materialistic.

2. The second characteristic of the CAS is the *co-evolution*. The core of co-evolution is that systems evolve as whole and within the environment they exist (Mitleton-Kelly, 2003). The idea of co-evolution is common in arts and fashion. Djelic and Ainamo (1999) have stressed that change happens as a cycle that moves from environmental dislocations to organisational transformation. Town-centre evolution often happens as a result of environmental shifts that call for organisational changes. Schiller's (1994) research on retail decentralisation is an example of that.

3. The third characteristic of the CAS is the emergence of *dissipative structures*. Anderson (1999) suggests that dissipative structures inject energy to the system and this is the only way the system can sustain itself. The idea of purpose made town-centre groups is very common in town-centre management and Portas in her post-review evaluation of the Portas pilots have commended on the positive impact that town-centre management teams had on the success of the projects.

4. The fourth characteristic of the CAS is the *feedback*. Feedback in the CAS includes a number of different elements. It refers to mechanisms that transmit messages among the parts of the system, the dissipative structures, and the larger environment. Graugaard (2012) stressed the importance of the positive and negative feedback loops on the understanding of resilience as a method to understand socio-ecological change. Resilience is one of the key aspects that explain the evolution of town-centres as N Wrigley and Lambiri (2014) suggest in their research findings.

5. The fifth characteristic of the CAS is the *self-organisation*. Mitleton-Kelly (2003) defines *self-organisation* as the spontaneous order that the systems move to when the environmental conditions change. The major impact of self-organisation is that it happens as a response to the whole. The systems find balance within the larger emerging environment. Portugali (2012) and his colleagues has produced a considerable amount of research where they showed that in some cases the planning of even a whole city can be self-driven, or self-planned as he (2012, p.235) calls it.

CAS are fundamentally based on the concept of evolution. CAS have a meaning and a purpose if only are seen as part of a holistic larger scheme of things that is driven and defined by the change that happens unintentionally as a result of the change of its parts. Within this process the systems destabilise and after conflict and negotiation a new state of equilibrium emerges. With regards to the town-centres this emergence is a pivotal moment because it happens after the conflict and negotiation among the stakeholders and the groups they create. Parker et al. (2014) have provided a list of factors that spur the destabilisation of the town-centre. The implication made is that the various stakeholders of the town-centres have conflicting interests on these twelve factors and they put their interest and effort on the ones that will maximise their stake in the high street. It is also implied that different stakeholders live in different stages of their life-cycle and therefore prioritising different aims is vital for their existence. Resistance to change is a major problem in the evolution. It is well documented in the retail literature as well within the retail change theories and particularly in the conflict and ecological approaches (Roth & Klein, 1993). Etgar (2002) described this evolutionary process as one that results to novel organisations which is compatible to the evolution of the town-centres of the UK that shifted from retail to service dominated.

Therefore, it is argued that town-centres can be viewed as CAS and hence researching them in a holistic complex way can be seen as a possible alternative.

Conceptualising the application of CAS on the research of town-centre

management

The major reason that the authors of the paper propose that CAS are a compatible method for the analysis of town-centre management is their explanatory feature of the evolution of systems (Edgren and Barnard 2012). Rhodes and Murray (2007, 82) illustrated, in a simple way, how CAS framework explains the operation of a complex system (see Figure 1).

----- Insert Figure 1 here -----

Town-centres have been viewed and researched as systems by a number of scholars. Pal and Sanders (1997) suggested that TCM calls for a systemic analysis of inputs and outputs that will allow town-centre managers to evaluate their performance. Warnaby (1998, 55) applied the concept of the "*Urban Retail Systems*" to describe the town centre locations where complex interactions take place in order for the retail product and service to find its destination to final consumer. Prior to Warnaby, urban retail systems were used by Potter (1981) to describe cycles of agents/stakeholders that interact in different layers, internally and externally, to establish various groupings of urban business activities. Whyatt (2004) referring to the management of the agents of the town-centre, stressed that there is a need for sharing of knowledge and skills in order to make the system operational. Otsuka and Reeve (2007) raised the issue of the conflict between different agents, namely they suggest that public and private sector agents pursue different priorities and therefore they have different aims.

TSM is commonly concerned with the evaluation of the performance of the town-centre. This attempt is associated with rational ways of quantifying the concept, design, and use of the town-centre (Hogg, Medway, and Warnaby 2007). The same authors (Hogg, Medway, and Warnaby 2004) researched the areas where individuals involved to the TCM employ KPIs to monitor their performance and interestingly the major themes that emerged were related to car-park, crime, and rates. The reason that this quantification of performance is interesting is that the KPIs that are used measure different types of numerical representations assuming that number that describe different variables of the system can predict its behaviour. Even though this is a common approach to TCM it is totally different to CAS as the basic premise of CAS is that they follow rules but their behaviour is unpredictable. This does not imply that the reflection of the history of a system, a town-centre in this case, on to numerical information is irrelevant or unimportant. Systems have history, called *path dependence* in the CAS jargon that can determine their future. Scholars such as Garud, Kumaraswamy, and Karnøe (2010) pointed that the concept of path dependence, particularly in management research, is used loosely and most importantly instead of path dependence being in the centre of research its predictors attract the focus. Sydow, Schreyorg, and Koch (2009) suggested that path dependent systems exhibit a number of characteristics. For the purposes of this paper there are three in particular that are very relevant, namely the inflexibility, the inefficiency, and the nonpredictability.

TCM, as any other managerial activity, is appraised by measuring the performance of strategies and tactics. This occurs by utilising various historical data and information and

contrasting them against predetermined benchmarks. Parker et al. (2014), in their research review, concluded that the measurement of economic impact is not necessarily a good predictor of the performance of a town-centre. They also argued that issues like the nature of information that informs decisions and the inertia of the mid-sets of people that are involved in the management of the town-centres are areas that are not researched enough (Parker et al. 2014). The issues they raised are in alignment with the findings of the research of Wrigley and Lambiri (2014) who concluded that the resilience of the town-centres is a complex phenomenon that calls for research. The view of the authors is that CAS can act as an intermediate that will explain the behaviour and performance of town-centres. Behaviour and performance both describe the same actual outcome, a story that can be told with fruitful descriptions or with numbers. However, they are the two sides of the same coin. An explanation of why things happen justified by the number that are always necessary by managers to reduce complex information into manageable proportions. An interesting finding of Hogg, Medway, and Warnaby (2004) research was that almost 80% of the recipients of performance information are Local Authorities managers and it is to be found what is the best format of information for this audience. Wollin and Perry (2004) referred to the non-constant rules of interaction among the agents of the system and the resistance to adapt to the evolving needs of communication. TCM has largely been a problem-solving exercise for Local Authorities Managers however this deterministic approach limits the co-evolution of the town-centre with the rest of the environment.

The CAS approach embraces self-organisation as a way of evolution. Self-organisation is a reflexive response of the system to the emerging challenges, internal and external, or a way to find balance in a rapidly changing lifeworld. Rigid rules and plans prevent the self-organisation of the system and it needs to be researched whether town-centres that thrive are more or less open to self-organisation and in what way. Wollin and Perry (2004) suggested that a characteristic of a CAS is that non-average outcomes are expected. Managing town-centres against benchmarks may be a safe way to operate, which reduces the uncertainty of managers and all the other involved agents of the system, but the impact that this may have to the system itself is not proportional and it is against a basic rule of the systems; all systems are different.

Conclusion and future research

The authors of the paper provided a brief overview of CAS theory and how it ties to the research of TCM. It was discussed that town-centres are in effect CAS that need to be explored and mapped as a totality of stakeholders that self-organise and interact purposing to achieve smaller or partial and greater goals. It was also argued that viewing town-centres as CAS provides a framework of analysis that captures both the changes if the agents of the system and the processes that link them together.

The purpose of the authors is to develop a theory that will explain the reasons that town-centres fail to move at the same pace their stakeholders move and provide an analytical framework that will embrace the characteristics and needs of the stakeholders within a collective scheme that will aim for the sustainability and success of the town-centre as a whole. Fieldwork that will inform this research is organised and the results will be published in due course.

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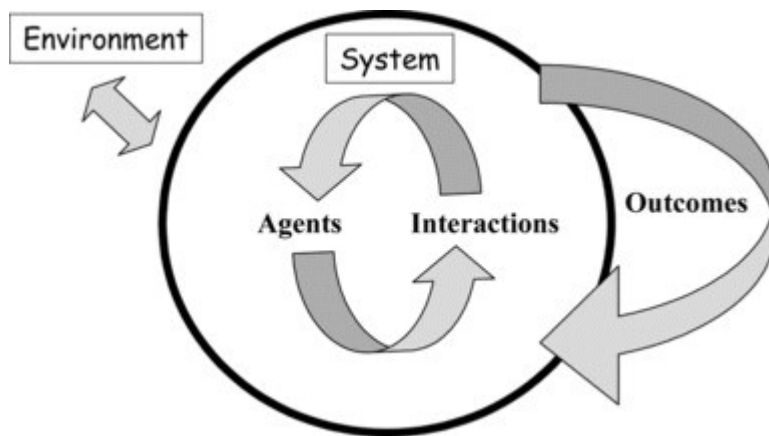
Figures

Figure 1: General CAS Modelling Framework, (Rhodes and Murray (2007, 82)