# “The Nexus model for local economic development”


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# SECTION 1. Macroeconomic processes and regional economies management

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# The nexus model for local economic development

## Abstract

The theory and practice of local economic development has been increasing in significance in the last two decades. This paper offers a critique of the current discourse on local economic development (LED) drawing on the body of knowledge related to complex adaptive systems (CAS) and their properties. Furthermore, it develops on previous research on a proposed institutional framework for LED, resulting in a generalized model referred to as the nexus model, applicable to multistakeholder settings that span a variety of domains and geography for working with complexity at multiple scales and levels. The model is useful in the LED context for nurturing processes of social dialogue, and the creation of economic and social value. The application of the model is itself a demonstration of some of the principles of CAS including emergence, sensitive dependence on initial conditions and self-organization, albeit at a meta-level and in the realm of concepts. Within LED, the nexus model may now be applied not only at district and municipal level, but also at all geographic, administrative, economic and sectoral levels and scales.

**Keywords:** local economic development, LED, nexus model, institutional frameworks, value constellation, complexity theory, complex adaptive systems.
**JEL Classification:** F63.

## Introduction

The theory and practice of local economic development (LED) has been increasing in significance in the last two decades. In this paper, I draw on the concepts of complexity theory (Anderson, 1999; Escobar, 2003; Kauffman, 1995a; Levy, 2000; Price, 2004; Stacey, 2003, 2007; Urry, 2003; Waldrop, 1992) and the properties of complex adaptive systems (CAS) to explore the phenomenon of LED. In some ways it is a critique of the current discourse on LED, and in other ways it is complementary. In order to articulate some of the CAS principles and perspectives, I draw on previous work related to a proposed institutional framework for LED in the South African context. Thereafter, I subject that framework to a partial transformation in a cyclical way that shifts away from LED and then after the transformation returns to LED. The result is a generalized model, not limited merely to institutional framing for LED, but one that is applicable in all kinds of multistakeholder settings for value creation in complex, turbulent settings. I refer to this model as the nexus model, and submit that it is an effective model that spans a variety of domains and geography for working with complexity at multiple scales and levels.

## 1. Complex adaptive systems

If we view LED using a systems lens we may conceptualize it by considering complex adaptive systems. The following is a definition of a CAS

*"A complex adaptive system (CAS) is a system comprized of many heterogeneous agents that interact locally with each other based on local schema, such that the behavior of the system arises as a result of feedback relationships between the agents, and the system evolves as the schemata of the agents adapt based on the feedback"* (Bodhanya, 2008, p. 12).

In the context of CAS, the actors involved in LED are agents. These will include entrepreneurs, firms, councillors, municipal officials, banks and so on. It should be clear that all of these agents have diverse perspectives, goals and values and are therefore heterogeneous.

There is a variety of important properties of CAS (Anderson, 1999; Bodhanya, 2005, 2008, 2009; Cilliers, 2000; Goodwin, 2000; Kauffman, 1995b; Lissack, 1999; Maxfield, 1998; Pascale, 1999; Smith, 2002). I have identified the following characteristics as critical to understanding CAS:

- agents with schemata;
- sensitive dependence on initial conditions;
- path dependence;
- coevolution;
- edge of chaos;
- far-from-equilibrium;
- emergence;
- self-organization;
- artifacts as agents;
- egalitarianism.

It is beyond the scope of this chapter to consider all of these properties in the context of LED. However, for the purpose of illustration, I shall examine self-

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organization and emergence, two properties that partially go to the heart of understanding what LED is in the first instance. There has been some debate on whether LED is a deliberate process or an outcome. The property of emergence indicates that the macro-states of a system emerge from the bottom-up interactions of the agents within the system. Furthermore, the properties of the system are as a result of the interrelationships between the parts of system and do not reside in the parts themselves. Thus, a CAS perspective lends itself to the idea of LED as an emergent outcome. The process that leads to the outcomes are at their essence processes of interactions between actors, or in CAS terms, interactions between agents.

How does such a conceptualization assist us in understanding the phenomenon of LED? It actually offers us a contesting set of explanations of what LED is and how LED occurs from that of some of the extant literature, and indeed the practice of LED. As an example, we often find that municipalities are encouraged to develop LED strategies. The process of such strategy development is usually in the form of a call to external planning experts or strategy consultants who are required to develop the municipal LED strategy after a process of research and consultation with a variety of municipal officials and other stakeholders.

This is very problematic as the very notion of strategic planning is discredited when drawing on complexity theory (Stacey, 2007). It is shown that strategy cannot be designed and implemented in the form of what is referred to as strategic choice. Rather, strategy is itself an emergent prospect. Therefore, we have to find alternative approaches to dealing with strategy. This is beyond the scope of this paper, but it does provide us with a sense of how we have to radically alter our conception of LED theory and practice when drawing on the theoretical perspectives of CAS. It suffices to note, therefore, that rather than focus on the content of LED strategy we have to shift our focus to catalyze the strategic outcomes that may be desired.

Abrahams defines LED as: *"Local economic development refers to the process of creating wealth through the organized mobilization of human, physical, capital and natural resources in a locality. The aim of LED is to produce higher standards of living, improve the quality of life, alleviate poverty, create more and better jobs, advance skills and build capacity for sustained development in the future"* (Abrahams, 2003, p. 188).

She cites (DPLG 2000) in describing it. *"As an outcome stemming from local initiative and driven by local stakeholders"*

Finally the World Bank defines it as *"Local Economic Development (LED) is the process by which public, business and non-governmental sector partners work collectively to create better conditions for economic growth and employment generation. The aim is to improve quality of life for all."* World Bank LED primer.

An examination of some of the extant definitions of LED above indicates that while they are not inconsistent with a CAS perspective and may be considered as complementary, there needs to be a shift or focus away from top-down design, control and strict planning perspectives, towards more organic notions that resonate with the properties of self-organization, evolutionary trajectories, path dependence and emergence (Anderson, 1999; Maxfield, 1998).

**1.1. Unit of analysis.** One of the fundamental issues that I wish to problematize is that of the appropriate unit of analysis when it comes to LED. There are numerous candidates that we may consider, each having their own merits and demerits. I shall begin with the most obvious, but somewhat less utilized one, that is, the locality under question. The notion of local implies a given spatial unit that, in the South African context, is usually associated with a political or administrative boundary, namely a municipality. This could mean a metropolitan, district or local municipality. It does not require any deep philosophical engagement to realize that such administrative boundaries do not overlap precisely as economic units. In simple terms, economic activity while conditioned by political and administrative boundaries do not coincide or co-locate with them. The next candidate is that of the entrepreneur. The assumption is that it is the entrepreneur that generates economic value through engaging in some kind of business activity, and hence that is the appropriate unit of analysis. Yet another candidate may be the firm. Here the focus is on the activities undertaken by the entrepreneurs, albeit in a collective form of organizing, rather than the entrepreneurs themselves. This is based on the underlying theory of the firm driven by transaction costs. Thus, any efforts to stimulate LED revolve around creating the conditions that are conducive for firms to operate and thrive, reducing bureaucratic red-tape, providing incentives, reducing corporate taxes etc. and putting mechanisms in place to reduce anti-competitive

behavior. When LED is seen as primarily a government mandate, then the unit of analysis tends to focus on municipal structures such as LED forums, or business support offices such as one-stop shops. In some cases these even extend to LED Agencies (LEDAs) as implementing agencies.

Finally, the unit of analysis that appears to be quite prevalent in LED practice based on European Union type grants to support LED in the South African context is that of project. This could have some linkages with one or more of the other units of analysis considered thus far. It must be noted that these different candidates as the appropriate unit of analysis for LED are not merely semantic differences, but rather, embed very different value positions, and hence choosing any one of these units of analysis means that our conception of LED may be very different had we chosen a different candidate. A CAS perspective based on LED as an emergent outcome of bottom-up interactions implies that all of these candidates may under certain conditions be relevant, but none of them are sufficient on their own. Rather, what is required is a higher order conceptualization that does not exclude the other candidates but in a way transcends them all. The point of departure is that LED is as a result of co-creation through the activities of agents spanning public and private sectors.

The unit of analysis in LED is therefore not straight-forward. The answer lay in multiple units of analysis. While project as the unit of analysis for implementation may be appropriate, it does not cover the holistic aspects of LED, and a higher level unit is required. The most appropriate, is that of generative or productive networks. If we remain at the unit of project, we may end up with projects that are successful in terms of their limited scope, but fail at the level of LED, especially if LED is an emergent outcome of complex interactions of entities and actors.

How do we go about enabling such productive networks? One answer offered later in this paper is that of a proposed model for LED that I now refer to as the nexus model. It is not entirely new but rather an elaboration of earlier work.

**1.2. Comparative and competitive advantage for LED.** There is an underlying assumption in the field of LED that because certain localities are able to achieve growth and development, we may be able to recreate it in other localities provided we can replicate what they had or what they did. In the LED field, what they have is often referred to as comparative advantage. The focus, therefore, is on the local resource endowments available that other competing localities do not possess. We note that the term comparative advantage is actually based on the Ricardian notion of factor endowments. This is not explicitly acknowledged by LED approaches that refer to comparative advantage and they also tend to be silent about the underlying assumption of benefits from specialization and trade under comparative advantage.

The second concept that is applied is that of competitive advantage. While the Ricardian approach looks at factor endowments, it is felt that in the knowledge age what is needed are more advanced, created factors. None of these are problematic in and of themselves. But an over-emphasis on competitive advantage without the concomitant focus on the systemic societal factors is somewhat misplaced in the context of a developmental state. We are not an advanced economy such as that found in the North. Our imperatives are different. When there are sufficient social nets in place, the focus can be on economic growth for its own sake. When these do not exist, then growth through competitive advantage has to be tempered with other pro-poor goals and interventions.

Some countries, such as Germany and Japan, have not been successful in trying to re-create their own versions of Silicon Valley (Smith, 2002). Such attempts to replicate economic success found in one locality elsewhere in the world, is a natural outcome of economic development ideologies based on comparative or competitive advantage. However, the failure to achieve this is not surprising in a CAS view. CAS has the property of sensitive dependence on initial conditions. Thus, a minor difference in starting conditions can have hugely divergent outcomes. If we use a cooking analogy, where we have all of the right ingredients in the right proportions, but just one ingredient is different then the broth will taste completely different as well. This is literally what happens in the case of LED. We are unable to precisely recreate all of the same conditions. Furthermore, complex systems exhibit path dependence. What this shows is that "history matters". Historical accidents tend to become locked in and outcomes cannot be reversed; this is the same concept as the "arrow of time" from thermo-dynamics. There are many examples of path dependence in the economy (Arthur, 1990).

Our efforts are therefore misplaced if we try to replicate success stories from one locality into other ones. This does not mean that we should not be open to learning from successful LED elsewhere. It also does not mean that we should not attempt to replicate

some of the key features but what we have to understand is that if LED is considered as a system, then it is simply not possible to replicate that system in another location. Every system is unique and has its own idiosyncrasies, each of which impact what it can and cannot achieve in ways that are somewhat unfathomable, even in principle.

Thus, one of the key lessons from CAS is that the context matters, and therefore the context of the locality in which we wish to stimulate LED matters. While there may be standard components of LED such as place marketing, investment promotion, reduction of red tape and bureaucracy, tax breaks, tourism promotion packages etc., it is not these components that are important, but rather the unique combination of the components that yield LED.

This idea has some resonance with ideas from resource-based view (RBV) (Barney, 1991; Eisenhardt & Martin, 2000; Grant, 1991). While the RBV is appropriate at the level of firms, the idea of heterogeneous bundles of resources that possess certain characteristics that underlie competitive advantage may be carried across to the locality level. We may now tie it in with another of the complexity theory ideas. Each set of resource stocks actually represent the accumulated history of the locality in terms of how these stocks were accrued and developed or drained over time (Warren, 2002). Moreover, it shows that slightly different levels of resource stocks can have very different resultant outcomes. This is consistent with sensitive dependence on initial conditions. Furthermore, the history of a system is distributed within the system itself (Cilliers, 2000). Thus, the original Silicon Valley has all of its history embedded in its asset stocks, and it is not just the level of the stocks but the interconnections between them, that makes it uniquely Silicon Valley and gives it its unique advantage relative to other localities and regions.

**1.3. Toxic LED.** From the point of view of a given region, territory or locality, the argument for LED based on comparative and competitive advantage makes sense. However, there is a paradox when LED is considered for a province or country as a whole. The growth in one locality as a result of LED is seldom innocuous, but rather can be toxic when it is at the expense of some other locality. For example, let us say a particular locality has the potential to develop a shoe factory that utilizes goatskins. It attempts to draw inward investment from setting up the plant through place marketing and offering incentives to potential investors. Now let us suppose that a neighboring municipality, offers better incentives and investment is drawn to the alternate locality at the expense of the first one. In fact, the first may result in the most efficient allocation of resources, but it loses out to the second as a result of the latter's LED strategy and programs.

There are other cases of toxic LED. The most obvious is when we transfer public good benefits to private entrepreneurs. While LED is ostensibly meant to stimulate growth through market mechanisms, there is the danger that it instead causes more market distortions. One of the more extreme cases results in the privatization of gains and socialization of costs (Korten, 1995). An example is when public funds are utilized to stimulate economic activity by subsidizing local firms in the name of LED, where the benefits accrue to the stockholders of the firms. Some of the costs of such activity by the firms in the form of pollution, negative effects on the social well-being of communities, and adverse effects on public health are externalized to society at large through public funding.

The foregoing discussion highlights that, firstly, the unit of analysis for LED is not straightforward and a case has been made for productive networks. Secondly, merely attempting to apply best practice from elsewhere and attempting to replicate comparative or competitive advantage is insufficient. Thirdly, there is a danger that standard prescriptions for LED, if applied uncritically, can lead to toxic LED by way of displacement of efficient economic activity to the wrong locality or through generating other kinds of market distortions. In the next section, I draw on and extend earlier work by Bodhanya & Hardman (2008) to develop a model that may address some of these issues. There had been a call by Hindson & Vicente-Hindson (2005) for an appropriate conceptual framework to give order to the dynamic interplay between economic, social, environmental and political dimensions of LED. Such a framework would incorporate the "key actors, processes, institutions and outcomes of LED initiatives". The work by the authors in earlier commissioned research (Gijima, 2008) was an attempt to heed that call, and the work in this paper further develops that conceptual framework in the form of the nexus model to be discussed below.

## 2. The nexus model

I begin with a short description of the original framework illustrated below.

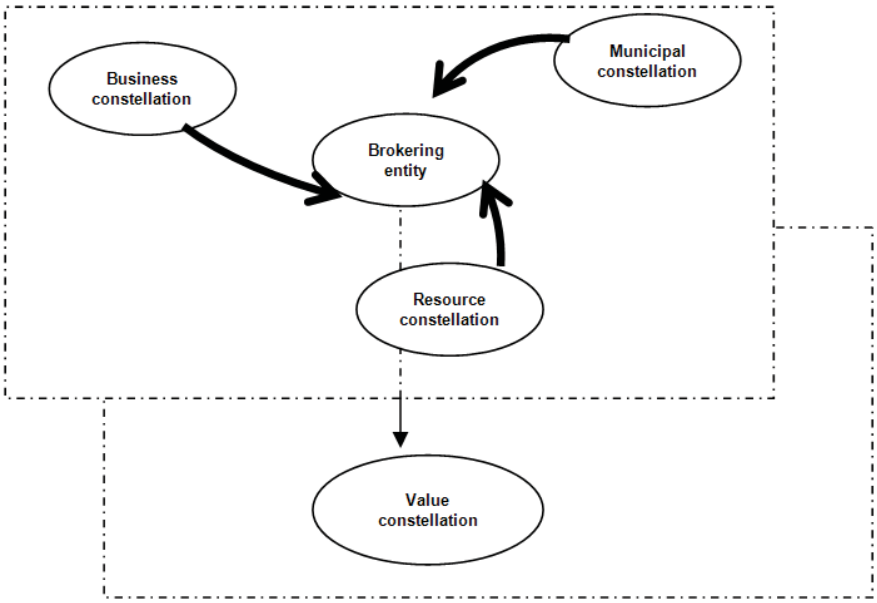


**Fig. 1. Institutional framework for LED**

The diagram above indicates an appropriate institutional framework for LED. We need to begin with the concept of constellations. This term implies a systemic relationship of subsystems that are part of a bigger system or constellation. The business constellation represents all of the components that relate to broader entrepreneurial activity. It, however, also includes organized activity that exists to support entrepreneurial activity. Thus, it would include business associations and chambers of commerce and industry.

The municipal constellation covers all of the major functions within the municipal government. Since LED requires multifunctional support, important components of the municipal constellation will be all of those departments that engage in planning, development of the Integrated Development Plan (IDP) and infrastructure provision etc. The resource constellation includes all providers of resources to fulfil LED requirements. This would include, for example, commercial banks, development banks, universities, research and development institutions, and other providers of resources.

The role of the brokering entity is to stimulate and catalyze LED in the form of value creation by drawing on each of the constellations in the most appropriate way. Thus, the brokering entity is responsible for generating an underlying value constellation. It is important to note that it is unlikely that the components of the various constellations do not exist. Many of the components are already in existence and are likely to be functional. However, what is missing is the systemic connections between the various components, and therefore, the constellations may need to be "seeded". In particular when it comes to the value constellation this becomes a key task of the brokering entity.

**2.1. Generalizing the nexus model.** Although the model was first developed as an institutional framework for LED, it is actually a generalizable model that has much wider application. In order to generalize the model, I engage in several transformations of the original framework. The first modification is to change the term brokering entity to nexus, hence the renaming to the nexus model. Nexus implies the bringing together of disparate and independent strands in a way that creates interdependence and coherence. While a nexus incorporates brokering as originally conceived it is now much broader and embraces other forms of complex interactions consistent with the definition of a CAS.

A nexus could include any form of brokering or organizing formation that bring stakeholders together to create higher order value from diverse sectors, disciplines, functions, contexts and even spanning, geographic locations. In the case of LED at a local level, the nexus may range from a single individual, to LED forum or even a fully-fledged LED Agency (LEDA). At a provincial level, a practical example would be a nexus formed to bridge across various government departments including those responsible for LED, cooperative government and traditional affairs, rural development and land affairs, and other agencies such as development banks. Another practical example would be a special purpose vehicle to stimulate tourism development, for instance, across several municipal areas.

In the second transformation, I retain the basic structure and organization of the model, but "strip" out the specific content that was previously embedded in it. The result of this transformation is shown below.

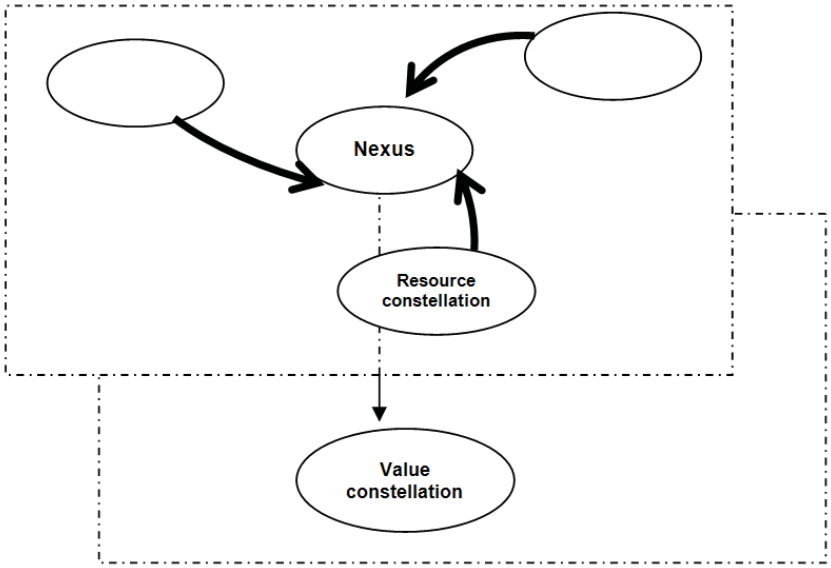


**Fig. 2. Generalized nexus model**

While the model as a brokering entity was created for LED at a district and local level, the generalized nexus model may be applied at varying levels and in differing contexts. For example, a nexus may be created at provincial level within government as a means for effective multistakeholder engagement. Similarly, it could be applied at a national level as well within the administrative government context. One example of this would be a nexus that catalyzes the various national departments that form, say, the security or the economic clusters of government.

From a theoretical point of view, the nexus may be seen as a mechanism for social learning (Wenger, McDermott & Snyder, 2002). It is therefore important in local institutional contexts as a means of garnering, replicating and diffusing knowledge for value creation. It is also a means of fostering the generation of communities of practice.

The value constellation is generic in the sense that value creation is as a result of systemic relationships between several components that represent the base constituents for value to be realized. However, every application of the nexus identifies the specific components that are necessary for value creation at that level of application and in the specific context in which it is being applied. For example, our original conception of the model identified the following components for LED as indicated in the figure.

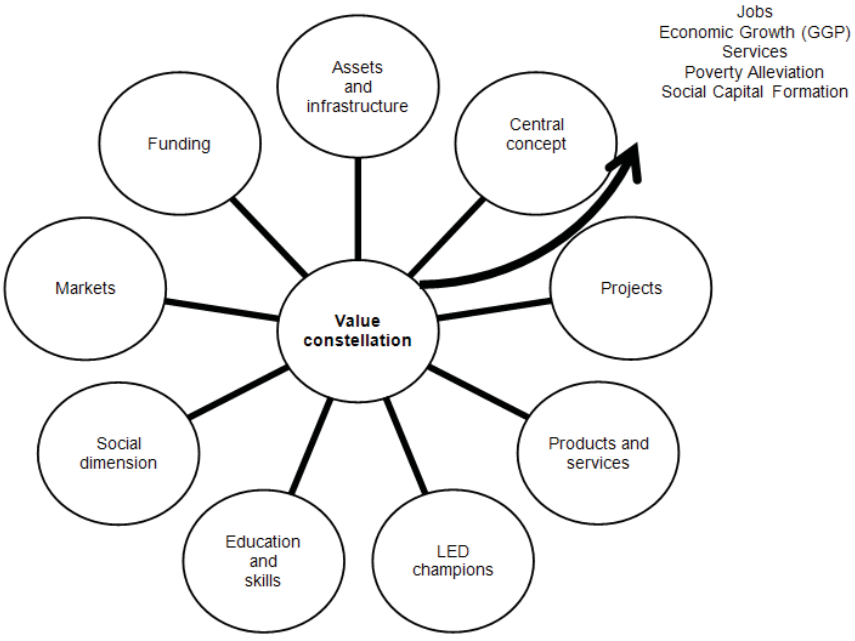


**Fig. 3. Value constellation for LED**

In that instance, it was shown that each of the components above is critical for LED when conceptualized at the district or local municipal level. The following section draws significantly from our initial conception (Bodhanya & Hardman, 2008; Gijima, 2008).

The *central concept* gives strategic coherence to LED for a given locality. It is based on the local context, its distinguishing features, distinctive competencies and the locational advantages, and thus draws heavily on, but is not limited to both the comparative (resource endowments, geography etc.) as well as competitive advantage of the locality. It is developed at a broad enough level to embrace a variety of projects that are strategically coherent for that locality. The unit of analysis when it comes to implementation is that of a project. In constructing a value constellation, it is important that the full portfolio of projects in a location have overall coherence with the central concept. In this way, we are able to avoid a "wishlist" of projects that do not go beyond aspirations but are translated into "on the ground" realities. All projects must therefore be assessed in terms of their contribution to a viable value constellation and their systemic relationships with other projects and with the other components of the value constellation. Every LED project needs to be assessed in terms of whether it makes any difference to the overall value constellation if it was not implemented, whether it is viable on its own or is reliant on the success of a set of other projects, the risks and knock-on effects if the project fails or is not implemented. Consideration should be given to whether a project contributes to a single component or several components of the value constellation. LED requires that there is productive economic activity in a locality. This implies that there will be the provision of appropriate *products and services* which form the basis of economic activity. In the context of a robust value constellation, these products and services need to be explicitly identified, and they must be provided efficiently and competitively.

While there is a general acceptance of the need for *LED Champions* in a local area, there has to be a more nuanced and detailed analysis and understanding of the LED champion role. There should be an assessment of the attributes that make them champions and the underlying source of their energy, support and passion for LED. A LED Champion is not a robust mechanism in and of itself, as it is susceptible to environmental, contextual and political changes. It is therefore important to understand the impact on the value constellation if an LED Champion is reassigned or migrates out of a locality. Effort has to be expended in building in redundancy in the role of LED Champions. This may be achieved by having several LED Champions covering various levels, and by existing LED champions nurturing broader networks that will still be accessible to the locality if the champion leaves.

The value constellation will not be robust and resilient, in the absence of the necessary *education and skills* to support all of the other components. An assessment has to be made of whether the required skills are readily available in a locality, and if not whether they can be attracted into the locality. This must be supported by contingency actions to mitigate the risk of key skills migrating out of the locality. A distinction is made between generic skills and self-programing skills (Castells, 1996/ 2000). Generic skills are those that are likely to be found in many localities, and are readily replaceable. Self-programing skills are those inherently embedded in sophisticated knowledge-based work involving life-long learning and the ability to reprogam to adapt to a dynamic, changing environment. It is therefore necessary for strong relationships to be nurtured with higher education institutions, Further Education and Training (FET) Colleges, research bodies and to focus on education provision that is in consonance with the specific needs of the locality as embedded in the various components of the value constellation.

In the absence of a strong *social dimension*, it may be argued that even if there is viable economic activity in a locality, it does not constitute LED in the context of a developmental state. This component of the value constellation is an explicit recognition of pro-poor growth. The beneficiaries and how they benefit must be known, together with the duration of the benefit whether in perpetuity or only while funding lasts.

A value constellation is incomplete without adequate *markets* for the products and services that are generated within the locality. This may range from local through to national and international markets. If markets do not exist, then mechanisms have to be put in place to create and develop markets. Even where markets do exist, much of the gains may accrue to market intermediaries that are outside of the locality, so they may be susceptible to premature saturation as a result of displacement to other localities.

Given that LED support is meant to cater for the absence of natural entrepreneurial activity as a result of market failures, *funding* is a significant component of the value constellation. The nature of

the funding, the balance of funding between grant and commercial funding, restrictions tied to the available funding, the proportion of funding allocated to public goods provision, and the proportion allocated to capacitation and training are all important considerations. The vulnerability of the value constellation may be assessed by evaluating what the impact will be if the funding is stopped before the planned duration. Since grant funding is meant to catalyze development, particular attention must be paid to the sustainability mechanisms once the planned funding streams reach completion. The extent of private investment for every rand of public investment is an important barometer of the leverage gained from funding.

*Assets and infrastructure* are a basic foundation for economic growth, the absence of which means that there cannot be successful LED. Water, sanitation, electricity, transport and communications infra-structure together with associated service delivery to individuals, communities and firms are all components that are required for basic economic activity. The more sophisticated these components are, the more opportunities arise for higher level combinations and more advanced level enterprises. Ailing or deteriorating infrastructure are impediments to efficiency and adds costs to economic activity. This component of the value constellation, therefore, indicates the extent to which there truly is integrated development in a locality. Consideration must be given to the public goods infrastructure, the supporting private infrastructure and asset creation that is needed, and the synergies between the public goods infrastructure and the private infrastructure. The opportunities for spin-offs from infrastructure provision must be assessed. This includes service provision to marginalized communities when investing in infrastructure for new entrepreneurial activity. Conversely, it also includes opportunities for entrepreneurial activity and new enterprise creation when backbone public infrastructure is built for service provision. This component of the value constellation highlights the importance of vibrant intra-relationships between line departments responsible for infrastructure and service delivery and LED officials.

The value constellation is itself a CAS. It is dynamic and is constantly changing and being upgraded as existing plans are realized and projects are implemented together with new initiatives being drawn into the value constellation.

The result of a viable and robust value constellation is the creation of jobs, economic growth and gross geographic product (GGP), poverty alleviation, social upliftment, service provision and social capital formation[1]. In short, LED.

For the purpose of this paper, each of the components of the value constellation as discussed above is still relevant as they fit in well with LED requirements at a district or local municipal level. However, it must be kept in mind that this is but one articulation of a value constellation. There is a myriad other possibilities and each of these have to be formulated for a specific need and context. It has already been shown that context is very significant in CAS. For example, the nexus model may be applied in a particular commodity sector for agribusiness and agroprocessing. In such an articulation, each of the stakeholder constellations may be the various categories of value chain actors in the specific commodity sector. Another constellation could include farmers' associations and other agricultural producer bodies. The resource constellation would include all of the resource provision actors such as the Land Bank, seed manufacturers, commodity research and develop-ment institutes, commercial banks, Depart-ment of Agriculture, and internal and external extension services. It is beyond the scope of this paper to identify all of the components of the agribusiness value constellation, however, it suffices to say that it would have to be subject to on the ground research and would need to include all of the components that are necessary and sufficient for value generation in agribusiness and agro-processing. The nexus would be the mechanism to catalyze the construction of each of the constellations, to bring them together to unleash value generation and to stimulate macrolevel outcomes through processes of emergence and self-organization.

## Conclusion

The nexus model is a generalized model that is applicable at a variety of levels and scales for multi-stakeholder interaction, processes of social dialogue, and the creation of economic and social value. It is based on the elaboration and development of previous work on a brokering entity, and is now shown to be consistent with CAS. The development of the model has been based on a series of transfor-mations of the original LED institutionally based framework. An interesting outcome of these transformations is that we now have a model that can be applied in a variety of problem situations and contexts that have nothing to do with LED. This

[1]While the focus of this paper is not on the specific outcome measures, it does not preclude such measures. It is important, however, to note that a CAS perspective indicates that such measures of success may not necessarily be predicted in advance.

itself is a demonstration of some of the principles of CAS including emergence, sensitive dependence on initial conditions and self-organization, albeit at a meta-level and in the realm of concepts. Within LED, the nexus model may now be applied not just at district and municipal level, but at all geographic, administrative, economic and sectoral levels and scales.

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