Developing a local innovation ecosystem through a university coordinated innovation platform: The University of Fort Hare

Sara S. (Saartjie) Grobbelaar

Department of Industrial Engineering and DST-NRF CoE in Scientometrics and Science, Technology and Innovation Policy, Stellenbosch University, Stellenbosch, South Africa

ABSTRACT
This article builds on the concept of the ‘Development University’ and draws on findings from previous studies by the author on the transformation pathway and a university-coordinated intermediary platform at the University of Fort Hare. The article places the university at the centre of the development of an innovation ecosystem to facilitate the development of ecosystem platform architectures for engaged scholarship projects and their implementation for the benefit of local communities. The platform ecosystem design framework derived in this article approaches the analysis from three levels: (1) Contextual considerations and design requirements through a development pathway framework; (2) distinguishing between top-down creation of institutional mechanisms and the emergence of bottom-up engaged scholarship activities; and (3) some reflection on the governance and orchestration of the intermediary platform architectural design considerations.

1. Introduction and problem statement
Although universities have existed for hundreds of years, it is a common phenomenon that society has come to question to what extent and with what success universities have engaged with society and contributed to human development (Thakrar, 2015). Worldwide developments such as globalisation, the digital revolution, policy changes towards university autonomy and internally, pressure from students to reduce fees and adopt curricula to local needs and contexts impact on universities. It is within this context that universities need to develop mechanisms through which they could aim to coherently achieve their core missions (Brennan et al., 2004; Schreuder, 2013; Grobbelaar & De Wet, 2016; Grobbelaar et al., 2016).

This reality is also acknowledged in the South African White Paper on Higher Education of 1997 (DoE, 1997) which states that universities play an important role in social and cultural development and should contribute to develop a new social order and learning society. This position was bolstered in the National Development Plan...
which acknowledged universities as a key driver of development in the knowledge economy.

Within this context, the University of Fort Hare (UFH) is at the centre of the question of how universities in South Africa could respond to transformational challenges. Established by British missionaries in 1916, the university has over its 100-year history been concerned with the development of African people. UFH’s development initiatives and rural improvement initiatives can be traced back to the 1920s. The university has also produced an impressive list of leaders who have shaped the transformation landscape in South Africa and Africa at large (e.g. Nelson Mandela and Govan Mbeki) (Thakrar, 2015).

During the 1990s, South Africa underwent large-scale political change during which the process of transforming UFH from a Bantustan-defined university was initiated. Changes included new management structures and the incorporation of the East London Rhodes campus in 2004. Infrastructures for the coordination of research can be traced back to a Senate Research Committee since the 1980s, but it was only in 2004 that the research and development mission has really started to receive increased attention (Govan Mbeki Research and Development Centre, 2009; De Wet, 2013). Since 2007/8 dramatic changes are evident in research output and doctoral degrees awarded (De Wet, 2013).

More recently, after close to 20 years of turmoil, the 2009–16 Strategic Plan was developed that envisions a ‘development role’ for the university and that context and impact on the immediate environment should play a greater role in research programmes. However, up to 2016, the UFH made little progress in community engagement which led to strained relationships and a breakdown of trust between the university and communities in and around Alice (Thakrar, 2015).

The university has therefore been confronted by the question: What has the university done with all the knowledge extracted from the surrounding communities over the years? And why is the impact of its existence not evident in the immediate environment?

By increased attention to this issue the university started to reconsider its relationship with surrounding communities in particular in terms of the uptake of research towards improving livelihoods. This prompted a series of meetings with local traditional leaders around Alice and led to the establishment of a transformation steering committee and a memorandum of understanding (MoU) signed between the university and traditional leaders in April 2016.

This article now positions the case study of Fort Hare around the development of mechanisms and tactical moves for managing the emergence of an innovation ecosystem organised around a university-supported multi-stakeholder platform. Although this article has been applied to the Fort Hare context, the proposals made in this paper may have consequences for how other universities design support infrastructure and mechanisms to orchestrate emergent engaged scholarship activities.

### 2. Methods

The author reflects on the case study of Fort Hare and consider the formation and functioning of a multi-stakeholder platform (See section 4). The author used interview data to position her understanding of the dynamics and findings to develop a framework that maps design choices for a multi-stakeholder platform.
Core sources of data and learning that underpin the suggestions made in this paper included community engagement activities, staff engagement activities as well as engagement and buy-in by leadership on various levels (Grobbelaar & De Wet, 2016; Grobbelaar et al., 2016). The author has drawn on interviews and engagements undertaken as outlined in Table 1.

### Table 1. Sources of data and learning to develop the framework.

| Sources of data and learning | How this was used in the paper |
|-----------------------------|--------------------------------|
| Community engagement        | Extensive consultations across multiple stakeholder groups, i.e. 11 local chiefs of traditional communities surrounding the Alice campus which resulted in the signing of a MoU regarding the relationship between the university and communities. |
| Engagement with staff       | Wide consultation was conducted across all academic and research departments with the outcome that some departments are embracing a scholarship approach to engagement. |
| Engagement with leadership  | Buy-in and agreement was achieved on an institutional level involving deans of faculties, university management resulting in the vice-chancellor signing the MoU with the local traditional chiefs. |

MoU, memorandum of understanding.

Core sources of data and learning that underpin the suggestions made in this paper included community engagement activities, staff engagement activities as well as engagement and buy-in by leadership on various levels (Grobbelaar & De Wet, 2016; Grobbelaar et al., 2016). The author has drawn on interviews and engagements undertaken as outlined in Table 1.

### 3. A brief literature review

#### 3.1. Pathways to development impact for universities

‘Innovation for Inclusive Development’ (I4ID) entails various dimensions of inclusion where marginalised individuals are not only seen as customers but as partners and co-producers of value (Foster & Heeks, 2015). This concept has implications for inclusion in various stages of the innovation process such as framing challenges and the problem statement, the process of developing a new innovation (e.g. service or product), the adoption or absorption of innovation (that may have development outcomes) and economic inclusion (Dutz, 2007; George et al., 2012; Foster & Heeks, 2013; Heeks et al., 2014; Swaans et al., 2014). A growing body of knowledge is exploring how this concept finds expression in the university context where the university plays a more important role in local and regional development.

The expectation that a university should play a role in a country’s development and be included in development planning is not new (Brennan et al., 2004). This has taken many shapes and forms with the Soviet model of the university as instrument of the state where the focus was on ‘man-power development’ and ‘political socialisation’ of an elite (Castells & Cardoso, 2005), ‘industrial development’ as illustrated by Japanese universities that assisted government in modernisation and industrialisation. The ‘entrepreneurial university’ has been used to describe the role of universities such as Stanford, MIT, Oxford and Cambridge as engines of growth and industry formation (Jones, 1995; Etzkowitz & Leydesdorff, 2000; Clark, 2004; Cloete et al., 2011; Grobbelaar & De Wet, 2016).

In parallel to the concept of the ‘developmental university’, the ‘engaged university’ movement has emerged. This has established thinking that engaged scholarship entails: (1) Embedding engagement in the missions of the university, (2) supporting evidence-based practice, and (3) achieving mutual benefit for stakeholder groups involved (Bringle & Hatcher, 2000, 2002). Engagement is a dynamic process, highly dependent on a partnership that evolves from shallow to more institutionalised approaches and
A conceptual framework for the development(al) university considers the context, drivers of focus and changes in control, governance and university functions to the end of defining a potential development pathway (see Figure 1). Core principles of the engaged university were integrated in this framework in terms of engagement with the community, engaged scholarship and the goal of mutual benefit and co-creation.

3.2. Innovation system perspectives and innovation platforms

The ecosystem perspective as utilised for this article can be argued to be useful in taking a systems view on innovation when considering a multi-stakeholder platform as the unit of analysis. Where the traditional innovation systems framework mostly considers components and innovation functions (Hekkert et al., no date), the ecosystem approach considers the evolutionary nature of the ecosystem. The innovation ecosystem perspective was developed in a business context and maintains that certain actors create whole ecosystems usually around certain products (Moore, 1993; Iansiti & Levien, 2004). Ecosystem leaders, often a large firm, establish the ecosystem around a platform such as a technological platform, supply-chain platform or industry platform with leadership provided through concertation and orchestration of platforms (van Rooyen et al., 2013). The ecosystem’s evolution depends on interconnectedness and interdependence between actors where they play three functional roles: Initiators that develop the ecosystem, specialists that add value to a central platform, and the adopter that co-develops the platform (Tucker et al., 2013).

Furthermore, the innovation ecosystem framework attempts to make some distinction between innovation events and innovation structures which include economic agents and the relations between them and non-economic issues such as technology institutions and
culture (Mercan & Göktaş, 2011). This framework also goes to some length to help include the evolutionary features of interactions between individuals, their relationships and relations to the environment (Durst & Poutanen, 2013). Here a central concept to the concertation and coordination of an ecosystem is complexity theory principles which have been used to explain the process of emergence of ecosystems and interaction around a principle of self-organisation (Gawer, 2014).

It has also become common place in innovation programmes in developmental contexts to not only focus on technology-push drives but to develop multi-stakeholder innovation platforms (Sanyang et al., 2015; Schut et al., 2016). Innovation platforms have consequently been applied in a vast range of areas to facilitate multi-stakeholder engagement and innovation (Bullinger et al., 2012; Duncan et al., 2013). Such platforms are multi-stakeholder partnerships where actors engage to identify problems and provide insights about the biophysical, technological and institutional dimensions of a challenge (Tomekpe et al., 2011; Adekunle & Fatunbi, 2012; Esparcia, 2014). Multi-stakeholder engagement helps stakeholders to realise their interdependence and collective action in problem solving and to reach objectives. Platforms also put a strong emphasis on a systematic and iterative process of learning through reflection and a space to negotiate power dynamics (Ngwenya & Hagmann, 2011), where exchange of knowledge and learning complements the capacity to innovate amongst the actors. This is achieved by continuously identifying and prioritising problems and opportunities and experimenting with social and technical options (Dror et al., 2015).

In the search for innovation platform design principles, ecosystem success factors straddle across natural, structural, organisational and cultural factors and include effective resources and resource management, governance issues, effective partnering and partnerships, and the management of people and technology (Boudreau, 2008; Durst & Poutanen, 2013; Gawer & Cusumano, 2014; Madsen & Cruickshank, 2015). Autio & Llewellyn (2014) explored the implication of ecosystems for innovation management and developed an overarching innovation management that outline factors such as control mechanisms, value creation dynamics, architectures, various levels of strategy and capacity development factors. Here design principles include the definition of architectures to explore the process of ecosystem creation. This approach draws on core literature of life cycles, network structure and network management principles (Gawer, 2014; Gawer & Cusumano, 2014). These architectures include: (1) The physical platform and technology architecture, which sets out design principles of shared resources and has implications for the spaces, places and accessibility of opportunities through platform design; (2) Activity architecture relates to the composition of participants and structure of the emergence of activities within the ecosystem environment; and (3) Value architecture is an interplay between the physical and activity architectures and define the value dynamic (Autio & Llewellyn, 2014).

4. Analytical framework: Nurturing an ecosystem

This section links up with the university transformation pathway discussion with design considerations for a university-coordinated intermediary platform to facilitate and nurture the development of an innovation ecosystem that facilitates development outcomes for local communities. As shown in the platform ecosystem design framework, this article
approaches the discussion from three perspectives, namely: (1) Contextual considerations and design requirements; (2) distinguishing between top-down creation of architectures and facilitation of and emergence of bottom-up activities; and (3) governance and orchestration through platform and ecosystem architectural considerations (Figure 2).

The analytical framework as shown in Table 2 explores top-down design considerations and platform architectures to facilitate bottom-up activities and emergence of locally relevant solutions and innovations for the local environment through platform design principles.

5. Case study: Fort Hare University as orchestrator of an inclusive innovation ecosystem

The transformation pathway framework proposed in this article provides a framework against which to consider the complexities of facilitating the attempts by UFH to reposition its core foci. It is proposed here that critical lessons can be learned that will take the developmental model to new levels of inclusion and complexity – specifically for how this may contribute to facilitate emergent activities within the university for the benefit of surrounding communities.

5.1. Top-down activities: Institutional design and mechanisms

After a decade of uncertainty and sustainability challenges over the 1994 to 2004 period, UFH started to settle down and align itself to be better organised. This can be seen through the restructuring of the faculty system, investments in research administration and capacity development, better financial control and the appointment of, for example, a Dean of Research and a Deputy-Vice Chancellor of Academic Affairs. Since 2007, there has been a dramatic increase in all forms of accredited research outputs (from 64 to 208.57 units) and doctoral degrees awarded from only 10 in 2007 to 47 in 2012 (more than 700%) (Grobbelaar & De Wet, 2016). A range of changes in the forms and focus of core missions have taken place and are briefly discussed below.
Over the 2009–16 period, the link with community-based projects has proved important in the research function. This has allowed researchers to tap into national and international funding sources. Many of the projects that received funding had a community focus and helped to attract funding from the South African Science system. A further measure implemented was to set minimum research output targets for senior researchers. Furthermore, an annual research budget was created to make provision for funded research activities and provides seed funding for capital expenditure. The university has 19 associated entities such as institutes, centres and units all of which have strong development agendas and to which funding is allocated for development projects.

Moreover, the university attempts to strengthen and improve the management of more sustainable networks and relationships with both international and local communities. This included the establishment of the international relations office which facilitates mobility and exchange programmes, a scholarship programme, which benefits a large number of postdoctoral and visiting fellows.

The university provides support to staff for engagement with industry and the research community through the tech-transfer and intellectual property function with a regional tech-transfer office assisting with the protection of intellectual property and the sourcing of seed funding. The Technology Innovation Agency (TIA) has also provided seed funding to a number of patents, which are being considered for potential commercialisation. The Senate Technology Transfer and Innovation Committee, established in 2013, monitors the

| Table 2. Platform design and ecosystem orchestration framework. |
|---------------------------------------------------------------|
| **Dimensions** | **Design considerations** |
| **Top-down activities: Institutional design and mechanisms** |  |
| Transformation pathway and institutional changes |  |
|  | • External and internal barriers to a development role |
|  | • Changes in institutional control and governance |
|  | • Focus and form of teaching mission |
|  | • The form and focus of the research mission |
|  | • Form and focus of engagement mission |
| **Facilitating emergent activities: Platform-level design framework** |  |
| Activity architecture |  |
|  | • Partnering and partnership management |
|  | • Platform engagement & facilitation |
|  | • Conflict resolution & dealing with power dynamics |
|  | • Structure of networks and platform composition considerations |
|  | • Network and platform evolution planning |
|  | • Guiding the search, visioning and planning |
|  | • Demand articulation |
| Physical and technology architecture |  |
|  | • Physical design considerations |
|  | • Resource allocation and availability |
|  | • Actor capabilities and capability development; knowledge skills and interests |
|  | • Supporting entrepreneurial activity |
| Value architecture: |  |
|  | • Value creation and capture and the interplay between activity and technological architecture |
|  | • Basis of value creation and appropriation of value |
|  | • Network effects to boost value creation benefits |
|  | • Collective experimentation, participation and co-creation of knowledge and value |
development activities, and relationships are governed by a clear code of ethics which falls in the domain of the University Research Ethics Committee. Progress on development is actively monitored by these structures, which also bring together the staff who work on developmental issues, although this is still at an early stage. Unfortunately, the system is still fragmented, and there is a lack of facilitation and governance. Clearly, changing the existing culture is taking time.

Despite a range of measures such as establishing a directorate of community engagement and establishing a deputy dean of community engagement in each faculty, communities’ perception that researchers exploit them and do not plough back findings in the community remains a core issue. This is acknowledged in the university’s policy on community engagement and the university’s approach is to refocus its research philosophy towards a strong participatory approach with an emphasis on sustainability. Capacity development is taking place through workshops and teaching on appropriate means to enter community spaces.

The university’s strategic plan includes the integration of ‘knowledge in action’ in the teaching and research activities of the university. This is done through the integration of local context and experiences into core curricula and the development of case studies grounded in the local environment. The case studies enrich teaching and curricula through improved understanding of practical implementation, while research and projects are influenced by these case studies as they are rich and agnostic of local context.

A focus on capability development has resulted in some prioritisation processes undertaken by the university with a focus on vital scarce skills disciplines, i.e. science, agriculture and education. This has received impetus through nine research niche areas that specifically state the requirement of trans-disciplinary teams and research. The nine niche areas that operate within this requirement of trans-disciplinarily is intended to assist in the firm anchoring of projects in community-based involvement. These initiatives are intended to drive the development of UFH to become more knowledge and research focused as an institution.

Engagement support provided in the Faculty of Science and Agriculture has a rich history through project research and related engagements. The Directorate of Community Engagement established in 2009/10 aims to foster a positive relationship with researchers and offers capacity development workshops on who to approach and enter community spaces. Each faculty has a deputy dean who is tasked with a community-engaged portfolio with a quarterly report submitted to Senate Committee on Community Engagement. Nevertheless, in spite of all these measures, the accusation is made that researchers enter communities to gather data, formulate theories and findings, students graduate and staff deliver papers at conferences all over the world and never take the time to drive uptake of findings in communities.

Engagement between researchers and stakeholder groups remains fraught and requires a specific focus. For one, power relations offer a challenge as well as the unrealistic hopes and expectations around communities’ immediate material environment. Special attention must be given here to respect cultural customs and treat participants with dignity. Although the university’s policies are highly sensitive to these matters and that communities are trapped in poverty and desperation, it also acknowledges that these individuals should be empowered to make a difference to their own situation. This factor is a key aspect of how engagement and programmes could be designed around the forms and
focus of engagement. To this end, the university has created an innovation platform initiative.

The following sections provide more detail regarding the design consideration for establishment of this platform with a core focus on how the university may coordinate the emerging local innovation ecosystem.

5.2. Facilitating emergent activities: Platform-level design framework

Already, in 2008 an agricultural intermediary development platform was envisioned that would engage core stakeholders in creating an environment that is conducive to improve training, research and partnering with local and international stakeholders. The initial platform goals were mostly focused on economic outcomes: (1) To enhance the efficiency with which agricultural production takes place in the region; (2) to create market opportunities for excess production; and (3) to engage in a range of agricultural value-added activities for achieving increased profits.

The intention was that the platform would be sustainable through community inputs and labour and help understand local challenges while postgraduate students would engage in ongoing research projects. Societal impact would be achieved through the REAP (Rural Education Access Programme) training and capacity-development programmes and projects. Unfortunately, REAP, although it had institutional support at UFH, never materialised.

Important lessons were learned through this failed initiative:

- Expectation of communities need to be managed as they may become disillusioned if especially economic outcomes or material change to living conditions are not achieved;
- The development of platforms and continued engagement exceed the time available to a single researchers or postgraduate student;
- Usually research-to-action machinery does not exist which makes the implementation of findings difficult;
- Finding role players that embody the legitimacy, interest and knowledge to participate proved challenging;
- The development of specific skills is required to ensure that the platform functioning and governance take place in an effective, orderly and sustainable fashion.

Another core lesson learned from the early attempt to facilitate and develop an intermediary was that the university’s best chance to success would be to take a leading role in such a set-up and to create an environment around this platform where research activities could emerge and be fed back to community structures.

A renewed attempt to develop an intermediary structure for community engagement was revived in 2015. Here trust had to be re-established with the community. To this end, a series of meetings were held with 11 of the local chiefs in the immediate vicinity of the Alice campus. A number of organising architectures were formed namely: A steering committee, a research committee and a MoU between the traditional leaders (local chiefs) and the university which took place on 13 April 2016.

The MoU sets out the basis of the agreement and how research will contribute to socio-economic development in response to expressed needs of the community. The core
architecture that was developed here was a multi-stakeholders inclusive innovation platform. This was a novel project for the university and surrounding communities. The following sections unpack the envisioned design principles and goals of the platform. Although admittedly still aspirational, this provides some useful insights in how the UFH is aiming to achieve these objectives.

### 5.2.1. Activity architectures

In order to set goals for the platform, the university had to ensure that they consider the availability of expertise and other resources, the nature of research conducted in the university and the needs and priorities of communities. The aim of the formation stage of the platform is to ensure that activities of the platform provide five academic faculties (each with a large range of projects) a means to align research with local challenges. The main aim here is that researchers will not unilaterally decide on projects but gain input through alignment and mutual goal-setting with stakeholder groups.

Two philosophies underpin the activity architecture of this platform: The quintuple helix philosophy which acknowledges the importance of various communities and their contexts. The systems included in the platform were the socio-cultural context (the community); the educational context (the researcher); the economic context (business); the governmental and non-governmental contexts (traditional leaders, local municipality etc.) and the environmental context (specific actors, resources). Furthermore, the principles of I4ID underpin the engagement of various communities in the whole process of developing and implementing solutions and innovations. This means that it aims to engage the community to more than merely be subjects of research but to participate in the uptake of findings for improvement of lives.

The platform activities are supported through expertise and resources from the various stakeholder groups and by the articulated requirements of the community. With five faculties on campus, a huge amount of research projects exist that may be community-based, ranging from energy, early childhood development, entrepreneurship and social innovation.

From a practical perspective and as far as platform engagement and facilitation are concerned, the dynamics of the functioning of the platform include the following steps:

1. A researcher who wants to do research will submit a potential research problem to the secretariat of the platform;
2. A database will be drawn on with voiced community challenges and consultations will take place with relevant community members;
3. The engagement process will assist in refining the problem statement in order to be realistic and to acknowledge contextual issues;
4. The ultimate research proposal is developed and submitted to the platform committee for recommendation to the senate;
5. Upon completion of studies, findings need to be fed back to communities and the potential of developing an initiative based on the findings needs to be considered; this will include a feasibility analysis; and
6. The platform and its programmes need to be regularly evaluated in order to ensure that it is effectively executing its objectives and real benefit accrues to the community.
The platform requires here to support the following:

- Various actors from the quintuple helix need to be included and, crucially, remain included in the functioning of the platform. This means that some traditional participants in the innovation ecosystems, e.g. the university and local business as well as some non-traditional actors such as community structures, need to be included to ensure adequate representation;
- The governance rules of the platform need to be drawn up through consultation and need to outline the level of engagement, integration, responsibilities and actions of the various participants;
- Research objectives of community engagement research are informed by community needs;
- A clear and shared vision needs to be developed by participants regarding how research outcome and transfer of technology will support community development – utilised as a mechanism through which expectations may be managed;
- Through platform structures such as the establishment of a steering committee and research committee, tangible and intangible resources need to be identified and made available;
- The platform participants need to ensure that research-to-action machinery is developed for the effective diffusion of ideas and technologies or processes and to include community members as participants in the process;
- The need for good information and educational material must be informed by continuous research done on such projects;
- The transdisciplinary nature of these projects provides endless opportunities for researchers to contribute to societal change and the identification of future research topics.

5.2.2. Physical and technology architecture

The role of the university (which is a traditional actor in the system) is to play a non-traditional role in the innovation ecosystem which is to coordinate a platform for engagement over a prolonged period of time. Core to the engagement of the various actors is the development of appropriate capabilities to engage with stakeholders perpetuating a dynamic that increases in depth and value over time. More specifically, creating a platform that could facilitate the development of an ecosystem requires novel ways of understanding and positioning research programmes within the community engagement premise. Here researchers will need to gain an additional set of skills to engage more effectively with communities while community structures will need to be developed to engage in processes that may be new to them. Such issues have implications for the type of learning, knowledge production and how scholarship may be approached in the university.

Also, the interactions between actors may take different forms. Here the structure of networks and platform composition come into play. The various actors need to be involved by forming partnerships with formal and informal participants. It is necessary to ensure the interlinking of systems both in the community but also in terms of university committee structures and governance requirements. The formation phase requires setting
in place various agreement and contractual agreements as well as a supportive policy environment in the university.

The platform includes both hard and soft infrastructure with initial planning for resource requirements, exploring the range of resources available through the quintuple helix actors involved and finally securing resources. The functioning of the knowledge-sharing machinery of the platform requires human, financial and physical resources required to successfully engage and implement projects. During the formation phase, it is important to set up feedback into curricula and teaching in the university, with appropriate knowledge of the range of skills and knowledge of various actors that participate in the platform.

The functioning of the platform will require effective two-way information flows to ensure continued strength of linkages and trust relationships. In summary:

- Clearly define and discuss roles, functions and expectations of each participant in order to vision and develop goals through participatory approaches and engagement;
- Secure institutional support through endorsed and accepted relevant policies and strategic research frameworks such as the innovation and tech-transfer policy, the research uptake policy, the community engagement policy;
- Embed the principles of the innovation platform in the institutional set-up and the introduction of the principles of platform into the university’s approach to scholarly community engagement; this entails awareness of contextual inclusivity to ensure relevant research and findings and the formulation of a communication research policy and strategy;
- The use of mixed media and social media strategies should be done regularly taking into account the contextual requirements such as cultural and educational diversities and needs;
- Feeding back platform participant concerns considered in the university’s research and community engagement strategy and innovation strategy – informed by all the platform stakeholders;
- Having a well-equipped intellectual property office with supporting systems and staff including a research information and data management system is very important for the monitoring and evaluation of the research and development processes; and
- A database would be developed of community needs that will inform potential researchable needs of the community; this will allow that needs and research programmes be grouped and will eliminate the process of unilaterally deciding on projects by academics.

5.2.3. Value architecture

It is the interplay between physical technology and activity architectures where the functioning of the platform is dependent on the development of appropriate institutions. A core issue during the set-up phase of the platform is to ensure that the stakeholders will be able to develop and extract value from the platform. This is the only condition under which continued participation can be ensured and that such a platform may become sustainable. A number of considerations are outlined below.

The platform allows for synergies to exist between the core university functions such as making use of case studies from research that are used to enrich teaching and curricula in
order to provide relevant and practical examples. This also feeds back into research programmes that are informed by these case studies. Such studies are important to develop insight into contextual issues and participatory frameworks to increase the depth and quality of research programmes. Such activities also richly contribute to insights into the complexities of the environment and the challenges that accompany knowledge production and the dissemination of results.

In particular the development of trust and enduring collaborations are aligned through the formulation of the problem statement in close collaboration with various actors around mutual value creation:

- Buy-in from the university from highest level had to be obtained; also, to manage risks and potential conflicts. This may include the consequences of the platform on research agendas, scholarship development and methodological training.
- Through the functioning of the platform co-production of knowledge takes place in a trans-disciplinary context with skills training, ethics and the monitoring and evaluation of development outcomes as important functions;
- The platform needs to contribute to the development of new institutions or the ‘reinvention of the commons’. Examples are how intellectual property could collectively benefit the community. It is in this regard where the governance framework in this case study is of crucial importance.

6. Conclusion

This article aimed to position a discussion of the core design choices for a multi-stakeholder platform in order to create a university-orchestrated innovation platform towards nurturing a local innovation ecosystem. The article makes a proposal of how learning and scholarship can evolve to be embedded in this context.

It can be concluded that ensuring a greater developmental role for the UFH includes a number of changes on the institutional as well as infrastructural level. The development pathway approach was unpacked to describe efforts by the university to create an institutional environment conducive to a development role. In particular, drivers that affect the university’s form and focus of functions, and changes in the form and focus of the three missions were considered.

Flowing from the development pathway discussion (institutional level changes) the author explored a platform intervention that is being implemented by the UFH. Here a new and diverse range of actors are engaged through the platform in order to contribute to a wider range of experiences, perspectives, histories and expectations. This contributes to the creation of spaces for engagement, collective experimentation and capacity development. It creates a mechanism through which the UFH and regional stakeholders may discuss needs and possibly incubate ideas.

Critically reflecting on the above suggestions, the effective and successful implementation of the suggested infrastructures depend wholly on its acceptance and implementation on an institutional level. This requires a change in the disengaged science model of the past decade. Of crucial importance is that the sustainability of the platform is dependent on resourcing both soft and hard, as well as learning from and sharing of tangible
results and outcomes to be reached. This entails the development of monitoring and evaluation infrastructures and the sharing of success stories through appropriate channels. Finally, constructive and productive collaborations can only be achieved through ensuring formal and informal engagement processes which are largely dependent on the development of appropriate capabilities in all actors.

Future research efforts may include a more detailed unpacking of development pathway factors and how those relate to infrastructural innovations such as intermediary platforms. Although the role of innovation platforms in the concertation and coordination of the innovation ecosystem have been explored in business context, its application in university context remains sparse – an idea for future research.

Acknowledgements

The author particularly recognises the valuable inputs that have been gained from two colleagues namely Prof. Gideon De Wet (previous Dean of Research at UFH) as well as Ulene Schiller (Senior Lecturer at the Department of Social Work and Social Development at UFH). Without prior research collaborations and outputs developed in partnership with these individuals as well as their valuable inputs and insight into the context and application of the platform at the university this article would not have been possible.

Disclosure statement

No potential conflict of interest was reported by the author.

Funding

This work was supported by Ford Foundation.

References

Adekunle, AA & Fatunbi, AO, 2012. Approaches for setting-up multi-stakeholder platforms for agricultural research and development. World Applied Sciences Journal 16(7), 981–8.

Autio, E & Llewellyn, DWT, 2014. Innovation ecosystems: Implications for innovation management. The Oxford Handbook of Innovation Management (January), 204–28. doi:10.1093/oxfordhb/9780199694945.013.012.

Bender, G, 2008. Exploring conceptual models for community engagement at higher education institutions in South Africa. Perspectives in Education 26(1), 81–95.

Boudreau, K, 2008. Does opening a platform stimulate innovation? Effects on modular and systemic innovation. Organization (West 2003), 1–33. doi:10.2139/ssrn.913402.

Brennan, J, King, R & Lebeau, Y, 2004. The role of universities in the transformation of societies. An international research project. Synthesis Report. London. http://www.open.ac.uk/personalpages/y.lebeau/Transfo.pdf Accessed 18 May 2008. https://www.open.ac.uk/cheri/documents/transf-final-report.pdf.

Bringle, RG & Hatcher, Ja, 2000. Institutionalization of service learning in higher education. Journal of Higher Education 71(3), 273–90. doi:10.2307/2649291.

Bringle, RG & Hatcher, Ja, 2002. Campus-community partnerships: The terms of engagement. Journal of Social Issues 58(3), 503–16. doi:10.1111/1540-4560.00273.

Bullinger, AC, Rass, M, Adamczyk, S, Moeslein, KM & Sohn, S, 2012. Open innovation in health care: Analysis of an open health platform. Health Policy. Elsevier Ireland Ltd 105(2–3), 165–75. doi:10.1016/j.healthpol.2012.02.009.
Castells, M & Cardoso, G, 2005. The network society: From knowledge to policy. Edited by Castells, M & Cardoso, G. Washington, DC: John Hopkins Center for Transatlantic Relations.

Clark, BR, 2004. Delineating the character of the entrepreneurial university. Higher Education Policy 17, 355–70. doi:10.1057/palgrave.hep.8300062.

Cloete, N, Bailey, T & Pillay, PB, 2011. Universities and economic development in Africa.

De Wet, G, 2013. Introduction, in: Beyond the apartheid university: Critical voices on transformation in the university sector. Edited by University of Fort Hare Press. University of Fort Hare Press, Alice, Eastern Cape, South Africa.

Denison, DR, Hart, SL & Kahn, JA, 1996. From chimneys to cross-functional teams: Developing and validating a diagnostic model. Academy of Management Journal 39(4), 1005–23. doi:10.2307/256721.

DoE, R, 1997. Education white paper 3: A programme for the transformation of higher education. Department of Education, Pretoria.

Dror, I, Cadilhon, J-J, Schut, M & Misiko, M, 2015. Innovation platforms for agricultural development. doi:10.4324/9781315646817.

Duncan, A, Le Borgne, E, Maute, F & Tucker, J, 2013. Impact of innovation platforms. ILRI. https://cgspace.cgor.org/bitstream/handle/10568/34271/Brief12.pdf?sequence=1

Durst, S & Poutanen, P, 2013. Success factors of innovation ecosystems: A literature review. In Smeds, R & Irrmann, O (Eds.), CO-CREATE 2013: The boundary-crossing conference on co-design in innovation. Helsinki: Aalto University Publication series SCIENCE + TECHNOLOGY.

Dutz, M, 2007. Unleashing India’s innovation. World Bank report. The World Bank, Washington, DC. doi:10.1596/978-0-8213-7197-8.

Esparcia, J, 2014. Innovation and networks in rural areas. An analysis from European innovative projects. Journal of Rural Studies Elsevier Ltd 34, 1–14. doi:10.1016/j.jrurstud.2013.12.004.

Etzkowitz, H & Leydesdorff, L, 2000. The dynamics of innovation: From national systems and “mode 2” to a triple helix of university–industry–government relations. Research Policy 29, 109–23. doi:10.1016/S0048-7333(99)00055-4.

Foster, C & Heeks, R, 2013. Analyzing policy for inclusive innovation: The mobile sector and base-of-the-pyramid markets in Kenya. Innovation and Development 3(1), 103–19. doi:10.1080/2157930X.2013.764628.

Foster, C & Heeks, R, 2015. Policies to support inclusive innovation. Development Informatics 61. doi:10.1016/j.tds.890003-0.

Gawer, A, 2014. Bridging differing perspectives on technological platforms: Toward an integrative framework. Research Policy Elsevier B.V. 43(7), 1239–49. doi:10.1016/j.respol.2014.03.006.

Gawer, A, & Cusumano, MA, 2014. Industry platforms and ecosystem innovation. Journal of Product Innovation Management 31(3), 417–33.

George, G, McGahan, AM & Prabhu, J, 2012. Innovation for inclusive growth: Towards a theoretical framework and a research agenda. Journal of Management Studies 49(4), 661–83. doi:10.1111/j.1467-6486.2012.01048.x.

Govan Mbeki Research and Development Centre. 2009. University of Fort Hare strategic research plan.

Grobbelaar, S & De Wet, G, 2016. Exploring pathways towards an integrated development role: The University of Fort Hare. South African Journal of Higher Education 30(1), 1–25. doi:10.20853/30-1-558.

Grobbelaar, SSS, Schiller, U & De Wet, G, 2016. University-supported inclusive innovation platform: The case of University of Fort Hare. Innovation and Development Taylor & Francis 0 (0), 1–22. doi:10.1080/2157930X.2016.1252376.

Grobbelaar, S, Tijssen, RJW & Dijksterhuis, M, 2016. University-driven inclusive innovations in the Western Cape of South Africa: Towards a research framework of innovation regimes. African Journal of Science, Technology, Innovation and Development Routledge 9, 7–19. doi:10.1080/20421338.2016.1225549.

Heeks, R, Foster, C & Nugroho, Y, 2014. New models of inclusive innovation for development. Innovation and Development 4(2), 175–85. doi:10.1080/2157930X.2014.928982.
Hekkert, MP, Suurs, RAA, Negro, SO, Kuhlmann, S & Smits, REHM, no date. Functions of innovation systems: A new approach for analysing technological change. doi:10.1016/j.techfore.2006.03.002.

Iansiti, M & Levien, R, 2004. The keystone advantage: What the new dynamics of business ecosystems mean. Harvard Business School Press, Boston. https://books.google.co.za/books?hl=en&dr=&id=T_2QFhjzGPAC&oi=fnd&pg=PP15&dq=Iansiti+and+Levien++business+ecosystems&ots=UgB9S9nMm3&sig=v65DI2FK91P7vvWTvzm4r5lTCQI#v=onepage&q=IansitiandLevienbusinessecosystems&f=false Accessed 6 March 2017.

Jones, TM, 1995. Instrumental stakeholder theory: A synthesis of ethics and economics. Academy of Management Review 20(2), 404–37. doi:10.5465/AMR.1995.9507312924.

Madsen, TL & Cruickshank, D, 2015. Ecosystem dynamic capabilities: Enabling co-innovation & growth. DRUID15. Rome. http://druid8.sit.aau.dk/acc_papers/55aiktj8n8iuse92go73ke7nj6o.pdf Accessed 7 March 2017.

Mercan, B & Götkas, D, 2011. Components of innovation ecosystems. International Research Journal of Finance and Economics 76(76), 102–12. doi:1450-2887.

Moore, JF, 1993. Predators and prey: A new ecology of competition. Harvard Business Review 71(3), 75–86.

Ngwenya, H & Hagmann, J, 2011. Making innovation systems work in practice: Experiences in integrating innovation, social learning and knowledge in innovation platforms. Knowledge Management for Development Journal 7(1), 109–24. doi:10.1080/19474199.2011.593867.

NPC, 2011. National development plan. Pretoria. https://www.gov.za/issues/national-development-plan-2030.

van Rooyen, A, Swaans, K, Cullen, B, Lema, Z & Ballantyne, P, 2013. Facilitating innovation platforms. Innovation Platforms Practice Brief 10(November), 1–4.

Sanyang, S, Taonda, SJ-B, Kuiseu, J, Coulibaly, N & Konaté, L, 2015. A paradigm shift in African agricultural research for development: The role of innovation platforms. International Journal of Agricultural Sustainability 5903(October), 1–27. doi:10.1080/14735903.2015.1070065.

Schreuder, DM, 2013. Universities for a new world: Making a global network in international higher education, 1913–2013. SAGE Publications, New Delhi.

Schut, BM, Klerkx, L, Sartas, M, Lamers, D & Campbell, MMC, 2016. Innovation platforms: Experiences with their institutional embedding in agricultural research for development. Experimental 52, 537–61. doi:10.1007/S001447971500023X.

Swaans, K, Boogaard, B, Bendapudi, R, Taye, H, Hendrickx, S & Klerkx, L, 2014. Operationalizing inclusive innovation: Lessons from innovation platforms in livestock value chains in India and Mozambique. Innovation and Development 4(July 2015), 239–57. doi:10.1080/2157930X.2014.925246.

Thakrar, JS, 2015. Re-imagining the engaged university: A critical and comparative review of University-community engagement. University of Fort Hare, Alice, Eastern Cape, South Africa.

Tomekpe, K, Kwa, M, Dzomeku, BM & Ganry, J, 2011. CARBAP and innovation on the plantain banana in Western and Central Africa (Special issue: Sustainable intensification: increasing productivity in African food and agricultural systems). International Journal of Agricultural Sustainability 9(1), 264–73. doi:10.3763/ijas.2010.0565.

Tucker, J, Schut, M & Klerkx, L, 2013. Linking action at different levels through innovation platforms. ILRI. https://cgspace.cgiar.org/bitstream/handle/10568/34163/Brief9.pdf?sequence=1.

Van de Ven, AH, 2007. Engaged scholarship: Creating knowledge for science and practice. Oxford University Press, Oxford.

Van De Ven, AH & Poole, MS, 1995. Explaining development and change in organizations Andrew H. van de Ven; Marshall Scott Poole. Management 20, 510–40.