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Urban Knowledge Exchange in South Africa:

the role of online platforms in promoting knowledge exchange
and improving innovative practice in urban development
and human settlement delivery

Conference sub-theme 5: Science and Technology Innovations for Sustainable
Human Settlements

“This sub-theme addresses itself to the question of “Which alternative and innovative building systems, water provision, energy, information and telecommunication, planning and decision-support tools should be explored to expedite the creation of more transformative, self-sustaining, liveable and carbon neutral neighbourhoods and cities?”

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ABSTRACT

Knowledge management has become increasingly important within South African government and its agencies over the past five years. Many municipalities and provinces have created knowledge management portfolios, and a range of human settlement agencies have developed knowledge management strategies to improve delivery on their respective mandates. Part of knowledge management is the creation and dissemination of credible knowledge and information about good practice. This is often achieved through the development of online knowledge platforms.

This paper draws on research of a broad range of urban and human settlement development knowledge hubs globally, and then discusses why it is crucial to focus on knowledge production, and knowledge sharing, in pursuit of better practice across the country and the region. It also discusses the key success factors for knowledge exchange platforms.

The paper will make the case for establishing a national initiative and platform to promote knowledge sharing and innovation to assist in more efficient and effective delivery of human settlements, and in achieving improved urban development outcomes.

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INTRODUCTION

One of the doyens of housing theory and practice, John FC Turner, stressed the need for knowledge sharing about good practice as early as 1976. In his book, *Housing by People*, having discussed the ways that people build settlements and cities, he argued for support to improve and scale up these kinds of practices. In concluding the book, Turner made a number of proposals for how this might be achieved.

“The first and most important proposal is to increase communication between people in action. All over the world there are many people practising these principles - in fact there are millions who are exercising their freedom to build and there are vast areas of housing by people.

... Proposal One is to *set up an international communications network in order to intensify the use of existing channels of communication (both formal and informal)*...

By far the greatest need and the most frustrated demand is for case studies and materials. ... Proposal Two, therefore, is to *set up a number of centres where case materials will be collected, indexed and made available to those needing access to the precedents set. All such centres will be interconnected so that anyone can search the rest for particular documents or topics.*”

(Turner, 1976, p. 157)(italics in original)

Apart from recognizing that learning from practice in different countries and cities was a crucial element for improving the housing situation, it is notable that the vision and proposal of an inter-connected community of practice predated the public introduction of the internet.

This call by John Turner, and others since, remained in the foreground of many housing programmes, projects, conferences and fora that promoted the ideas of sharing good practice around support for better housing for all.

Once the internet had become mainstream, in 1996 after the Habitat II gathering in Istanbul, UN Habitat set up its Best Practices Database (UN-Habitat, 1996). Running from 1996 until 2010, with some subsequent activity, the site is a collection of more

than 4,000 urban best practice case studies, based on submissions for award competitions held more or less bi-annually. An observation that has been made about this database is that the scale of searchable, available information is very positive, but that there is little in the way of evidence-based independent validation of the best practice materials (Wagner & Mahayni, 2016, p. 363). However, the intention of promoting better practice by linking numerous practitioners together to share experiences and knowledge, is what links back to Turner's call. What Turner may not have been able to anticipate was that as the internet itself grew in its reach, functionality and volume of content, the tools for global knowledge sharing also became more and more powerful.

Moving forward to Habitat III held in Quito in October 2016, the New Urban Agenda adopted at that event reiterated the need for access to data, information and knowledge to support the effective implementation of the new agenda. Excerpts from three of the clauses in the 'means of implementation' section make this clear:

126. We recognize that the implementation of the New Urban Agenda requires an enabling environment and a wide range of means of implementation including access to science, technology, and innovation and *enhanced knowledge sharing* on mutually agreed terms ...

150. We underscore the need for enhanced cooperation and *knowledge exchange on science, technology and innovation to the benefit of sustainable urban development* ...

157. We will support science, research, and innovation, including a focus on social, technological, digital and nature-based innovation, robust science-policy interfaces in urban and territorial planning and policy formulation, as well as *institutionalized mechanisms for sharing and exchanging information, knowledge and expertise* ... (UN-Habitat, 2016)(italics added)

Given Turner's original call in 1976 to share good practice (which coincidentally was the year of the Habitat I gathering in Vancouver), followed by growing efforts and commitments to make knowledge exchange a reality through the years, it is evident that there has been a sustained commitment in the housing and urban development

sector to improve practice by sharing information and experience across projects and programmes.

As alluded to, while this thinking and practice was developing in the urban development sector, the internet as a platform for lodging and sharing information was also rapidly developing.

Against this background, this paper reviews the state of urban development knowledge platforms based on a prior review of thirty three such initiatives, discusses key success factors, traces the emergence of knowledge management in the South African government-related urban development sector, and proposes how an urban knowledge sharing platform could be designed to address knowledge needs.

THE EXPANSION OF URBAN KNOWLEDGE PLATFORMS

As discussed, the intention to share knowledge to improve urban development practice had been in evidence for a number of decades. The means of sharing have altered as the functionality and reach of the tools and platforms have advanced. In the process of building knowledge sharing platforms, and with the pace of technology development, many initiatives have started, some have become established, and many have ended. So in reviewing a range of urban knowledge sharing platforms, the intention was to ascertain, as far as was possible from cursory inspection of available information, what was sustaining the successful initiatives.

The generic name for the online platforms used to support such knowledge sharing is 'knowledge hubs'. The following was adopted as a useful definition to scope the types of knowledge sharing initiatives under review.

"Knowledge Hubs are institutions or networks, dedicated to capture, share and exchange development experiences with national and international partners in order to accelerate development. ...Thematic knowledge hubs are usually practitioner-driven and tend to proactively involve broad groups of specialized actors, including central governments, local authorities, academia, the private sector, and civil society organizations." (World_Bank, 2015)

In this definition the emphasis is on resources to support better practice across a broad set of development issues, with urban development being of specific interest to this investigation.

In the urban development knowledge hub area, as defined in this paper, three main types of urban knowledge platform emerged:

1. Broad urban development knowledge hubs
2. Focused thematic knowledge hubs
3. Online learning networks or platforms

Each of these types of platform could be further classified according to whether their focus was at global, regional, national or municipal level.

Not directly addressed in this paper are another set of online platforms devoted to accessing, sharing and interpreting development and spatial data. These may be designed for the purposes of research, planning, policy making, and decision support. These are slightly beyond the scope of this work because of the focus on good practice and innovation in applied urban development. However, the data portals and analytical tools are not irrelevant to supporting improved practice, and certainly were emphasized in the New Urban Agenda (UN-Habitat, 2016) referred to earlier.

BROAD URBAN DEVELOPMENT KNOWLEDGE HUBS

A good example of a global, broadly defined knowledge hub was the Global Development Network (GDN)¹. Established in 1999, their core business was to build research capacity across a broad spectrum of development competencies. GDN worked in collaboration with regional network partners, international donor organisations and governments, research institutes, academic institutions, think tanks and individual researchers worldwide. Two of GDN's main activities were the Global Research Capacity Building Programme, and the Networking and Outreach Programme (or 'GDNet'). The GDNet programme was GDN's knowledge service which supported developing country researchers to contribute and debate ideas in development for over a decade. This was where researchers could build a profile

¹ <http://www.gdn.int/>

and submit materials. The GDNNet programme formally closed in June 2014. However, the other programmes and the knowledge hub continue, with the online platform providing access to GDN-specific publications and resources.

Other broadly focused, global level urban development knowledge hubs include the Zunia Knowledge Exchange and Urban Gateway which was established and is managed by UN Habitat. Zunia has a broad development focus including thematic areas such as the economy, education, environment, governance, health, and science and technology. Urban Gateway's scope is directly linked to UN Habitat programmes, and was mandated to maintain the momentum, discussions and networks developed at World Urban Forum meetings, strengthen partnerships and highlight the impact of UN Habitat's World Urban Campaign.

It is useful to note that the Global Development Network and Urban Gateway do not exist as purely online platforms but are also linked to a series of 'real world' activities such as the convening of world forums and global award ceremonies, the development of agenda's, and capacity building programmes. New content from a wide range of sources is continually lodged on these sites but there are additional periods of high activity (including new content and online collaboration) around the times of key events hosted or supported by the institutions standing behind the platforms. The link between real time events (or direct human engagement rather than just online engagement) and generating additional online traffic and interest is an important success factor.

Remaining with knowledge hubs that maintain a broad, urban development focus, another set of hubs focuses on geographic regions at scales below that of global. Global hubs may have the advantage of bringing together large and diverse user groups, and assembling large volumes of content. However, when setting out with the objective of addressing regionally-specific development issues it is often more effective to foster knowledge creation and sharing at more local levels. Examples of these kinds of hubs include Urban Africa which focused on cities on the African continent, the South East Asia Urban Knowledge Hub with its focus on improving evidence-based urban policy making (in India, Nepal, Sri Lanka and Bangladesh), and the Chinese Urban Knowledge Hub that facilitates information and experience exchange between the Pacific Rim countries.

These kinds of initiative tend to be sponsored by organisations with a regional mandate, such as the African or Asian development banks, and multilaterals and international donor organisations such as Cities Alliance and the Gates Foundation. Similar to the World Bank's South-South Knowledge Exchange², in addition to maintaining an online presence and resources, they often involve physical travel in the regions by groups of officials and practitioners wishing to share and learn about specific urban development issues and approaches.

These initiatives are not always focused in a contiguous geographic region. The India-Brazil-South Africa Dialogue Forum fosters dialogue between these three distant countries on a broad set of development issues, including human settlements as a key working group of the Forum. In this last case the interaction between the partners is more important than the online knowledge hub which is mostly maintained as a record of assemblies and discussions.

FOCUSED THEMATIC KNOWLEDGE HUBS

Moving to more focused thematic knowledge initiatives, the range of interest groups and connected thematic areas are many and varied. Again there are global, regional and local examples of thematically focused online hubs.

The themes include land issues, climate change, sustainability, transport, energy, support to local authorities, support to civil society organisations, and many others. Only a few examples will be covered in this paper.

On land issues, the Global Land Tools Network (GLTN) is a partner-based network established by UN Habitat, as an alliance of global, regional and national partners contributing to poverty alleviation through land reform, improved land management and security of tenure particularly through the development and dissemination of pro-poor and gender-sensitive land tools³. GLTN's mandate and institutional structure mean that it is strongly focused on the network of partners and on generating new practice-specific content. In contrast, the Land Portal (established by the Land Portal Foundation and hosted by the University of Groningen) is more of an information

² This was the original name of the initiative, and then it was renamed the Knowledge Sharing for Results (KS4R) programme

³ <https://www.gltn.net/>

sharing portal; a platform to share land-related information, to monitor trends, and to identify information gaps to promote effective and sustainable land governance⁴.

On climate change there are many platforms, but the Climate and Development Knowledge Network (CDKN) deserves mention. Its mandate is to support decision-makers in designing and delivering climate compatible development. They combine research, advisory services and knowledge management in support of locally owned and managed policy processes, working in partnership with decision-makers in the public, private and non-governmental sectors nationally, regionally and globally⁵.

An example of a continent-wide thematic hub is the Africa Portal⁶. Its stated objective is to broaden the availability, accessibility and use of policy research on issues critical to the future of Africa. Its thematic focus is mainly on trade and labour policy. It is a collaborative project between the Canadian Centre for International Governance Innovation (CIGI) and the South African Institute of International Affairs (SAIIA).

Other hubs work to support organisations at a much more local level, such as 'Locality', a UK national network of community-led organisations devoted to neighbourhood improvement. The network provides support to organisations working on community enterprise, community asset ownership, community rights, collaboration, commissioning support and social action. The network consists of over 500 community-led organisations and 200 associate members⁷.

An example of a thematic city-based hub is the Centre for Liveable Cities – Singapore (CLC). The purpose of the Centre for Liveable Cities is to disseminate and create knowledge on liveable and sustainable cities. The Centres' work spans three main areas, namely research, capability development and knowledge platforms. Complementing its mission, CLC serves as a hub connecting Singapore's public sector agencies with a wide spectrum of local and international partners with a

⁴ <https://landportal.info/>

⁵ <https://cdkn.org/>

⁶ <https://www.africaportal.org/>

⁷ <https://locality.org.uk/>

focus on the areas of knowledge building, expanding networks, and promoting and creating opportunities for liveable and sustainable cities⁸.

ONLINE LEARNING PLATFORMS

The third type of hub is devoted to offering online learning and collaboration. Of course any one of the other types of hub can have this as one of their offerings or functions alongside other services. However, the activity of online learning and collaboration is quite specialised and therefore lends itself to specialised support platforms. An example of a specialised learning platform is the World Bank's Open Learning Campus⁹. It offers online content such as podcasts, webinars, videos and the like. It offers a range of development-related online courses (self-paced or facilitated). And it offers online collaboration, for example through its associated Collaboration for Development platform¹⁰.

Learning and collaboration platforms are becoming increasingly popular, and are an essential component of knowledge exchange for improving urban practice.

So having touched on a range of examples of different types of online platforms, what could be gleaned about what made the platforms work well (for users, knowledge contributors, and hub managers), and what factors improved the chances that such platforms and associated activities could be sustained through time?

KEY SUCCESS FACTORS

Firstly, of course, not all online initiatives intend to remain active indefinitely. For example the India-Brazil-South Africa platform¹¹ was designed to support the tripartite engagement between the countries while it lasted, and levels of online activity (discussions and new content) mirrored real world activity. However, for initiatives that intend to gather and make a set of resources and services available over a longer time span, what were the factors that assisted in this?

⁸ <http://www.clc.gov.sg/index.htm>

⁹ <https://olc.worldbank.org/>

¹⁰ <https://collaboration.worldbank.org/welcome>

¹¹ <http://www.ibsa-trilateral.org/>

Based on a broad assessment of thirty three knowledge hubs, some of which have been mentioned in this paper, it is important to note the following distinguishing qualities about specific knowledge hubs.

- Some knowledge hubs are mainly information portals that network a range of organisations and materials together so that users can access recently released information. In this model, less information is lodged in the actual hubs, and the success of the portal is dependent on keeping links to other sites up to date and live.
- Some knowledge hubs are more focused on being more permanent repositories of information gathered from many sources, but lodged in the hub. This is more stable, in that information remains available even if the original sources change. But it requires information sharing and intellectual property agreements for each knowledge product or resource.
- Some knowledge hubs are more activity-based, hosting the sharing of information on specific initiatives, discussions between experts and knowledge forums (like communities of practice), and disseminating findings from projects funded by the initiative. These hubs are high on collaborative and information sharing functionality, but tend to last only as long as the project or activities are funded and then become static. The converse is knowledge hubs that are mainly online platforms with little direct engagement between users and collaborators (other than virtual).
- Some hubs have a strong knowledge directory component, where databases of experts are linked to user queries and sometimes online discussions. This tends to be the case when a main objective of establishing the knowledge hub is to provide a professional service or promote a specific development agenda, rather than purely to act as a knowledge repository or portal.

The larger regional or global knowledge hubs often combine many or all of these elements and tend to last longer if underpinned by a viable business model which allows them to be funded beyond the initial development period.

Even with larger global initiatives, the business model that stands behind the hub determines the length of time that the knowledge hub remains active and is maintained. One of the largest initiatives, the Global Development Network, is no

longer as active as it used to be, although they have managed to maintain certain core activities.

The user experience is often very important for success. An attractive, easy to use, intuitive interface that targets the users attracts more traffic and means that people return. This builds up the user base over time especially if the site content and functionality are maintained and updated.

Linked to this, designing a hub to achieve a critical mass of useful and reliable content in the early stages of its development also contributes to its ongoing success. After the initial investment to achieve critical mass, the expansion of content can be through self-submission of material, and thematic areas curated by collaborating organisations.

Hubs that depend on networks of practitioners are generally more successful if human engagement is core to their operation, than ones that have only an online presence. For example, online discussion forums in the absence of real gatherings and events are rarely successful unless participation in the discussions is incentivised in some other way. This observation is made in the context of urban development practice knowledge hubs. Other platforms such as Research Gate¹² are broad enough in scope and provide a useful enough service not to be dependent on real gatherings of its users.

The platforms and sharing protocols between them have recently become well established, and so initiatives that seek to join knowledge hubs together using shared protocols and coding conventions are important.

If these are some of the observations from a review of various types of urban knowledge hub across the globe, what is the situation in South Africa, especially as this relates to the demand for platforms that support the exchange of urban knowledge, innovation and good practice?

¹² <https://www.researchgate.net>

KNOWLEDGE MANAGEMENT IN THE SOUTH AFRICAN STATE AND BEYOND

The release of information and resources through online platforms, the discussion of these resources, and the formation of interest groups such as communities of practice, are all examples of elements of a wider knowledge management approach. To populate knowledge hubs it is necessary to have an effective knowledge management cycle. Knowledge management, although well established as an approach starting in the 1950s, has more recently been receiving greater attention from South African state departments and agencies.

Created and developed originally more for the use of private sector organisations, knowledge management is “a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets. These assets may include databases, documents, policies, procedures, and previously uncaptured expertise and experience in individual workers” (Srikantaiah & Koenig, 2000).

According to Tiwana, knowledge management “...enables the creation, distribution, and exploitation of knowledge to create and retain greater value from core business competencies. ... The primary goal of knowledge management in a business context is to facilitate opportunistic application of fragmented knowledge through integration” (Tiwana, 2002).

For state departments in South Africa, moving from paper-based records and resources to digital platforms, in the context of a rapidly changing and expanding policy, programme and data environment, has meant that state agencies have been forced to consider how best to manage knowledge. And so a more holistic approach has been found in the knowledge management sector. This is also accompanied by the recognition that organisations, whether government or non-government, need to be learning organisations (Roper & Pettit, 2002) if they are to remain relevant, and so knowledge sharing and exchange has come more to the fore in South Africa during the last five to ten years.

As an example, the South African Local Government Association (SALGA) and the SA Cities Network (SACN) have highlighted the need for more effective knowledge

management in municipalities to achieve specific benefits, including “reduced costs, increased efficiencies, motivated staff, better responsiveness, enhanced decision-making, greater accountability, more democratic governance, [and] improved service delivery” (SACN-SALGA, 2013). To achieve the objectives they outline in their knowledge management policy, they require a knowledge base as a way to enable collaboration, the sharing of information, the dissemination of good practice, and support for knowledge networks and forums (e.g. communities of practice).

Other organisations which have similar policies and have declared an interest in developing knowledge bases include the Department of Human Settlements, the Housing Development Agency, National Treasury’s Government Technical Advisory Centre (GTAC), the Council for the Built Environment, and the Department for Performance Monitoring and Evaluation.

For the national Department of Science and Technology, the promotion of knowledge management in general, and the development of online sharing platforms in particular, will strengthen the national system of innovation. This includes the key dimensions of developing human capital, promoting sustainable economic growth and improving quality of life, which can potentially be strengthened by supporting and enabling the sharing of knowledge and the consequent improvement in the speed and quality of service delivery.

Alongside the state’s own efforts to improve and coordinate urban development, there are a range of private sector, tertiary and non-government organisations also devoted to promoting urban development.

Given therefore the number of organisations, and individual practitioners and professionals, active in the urban development sector in SA, the need for online knowledge sharing and collaboration has been recognized for some time. Examples of localised or sectorally-specific responses to this need include the establishment of:

- the Municipal Institute of Learning (MILE);
- UrbanAfrica.net;
- the Good Governance Learning Network (GGLN); and
- the Centre for Municipal Research and Advice (CMRA).

These examples illustrate initiatives that have been initiated and supported by state agencies (MILE), universities (urbanafrica.net), non-government organisations (GGLN), and bilateral donor organisations (CMRA).

However, despite many such significant advances in the establishment of knowledge sharing and support platforms over the last five to ten years, there remains a need for a national platform that spans the different types of agencies and is devoted to promoting good practice and innovation in urban development.

NATURE OF DEMAND FOR A NATIONAL URBAN DEVELOPMENT KNOWLEDGE PLATFORM

To establish the nature of demand for a national platform for the exchange of urban knowledge about practice, in March 2016 the CSIR undertook an online assessment of the needs of potential users of such an online platform. The aim was to identify and profile the range of user types who would form the core group exchanging information on such a platform.

An online, electronic questionnaire format was chosen to assess user needs as the most appropriate instrument to inform an urban development knowledge platform. Respondents were invited to participate in the survey via an email containing the link to the questionnaire interface. A list of 587 individuals was contacted and the response rate was just under 10% (57 responses).

The following groups of survey questions were asked of the participants and the organisation they represented:

- how the individual and their organisation engage with information;
- what the need is for specific types of information;
- how the individual and their organisation can contribute to a national urban knowledge hub; and
- what the perceived need is for a national online information exchange platform.

The majority of participants that filled in the questionnaire were from academic or research related organisations, civil society organisations, the private sector and government departments.

Apart from gaining a detailed understanding of the online habits and interests of potential user groups, the survey indicated strong support for the establishment of a national knowledge hub. Some 91% of respondents stated that they would actively contribute to an urban knowledge platform and 89% of respondents stated that their organisations would consider collaborating as a partner in activities, events and forums.

The online survey of user needs was an effective tool in gathering a range of views from potential knowledge hub users.

The user needs assessment assisted to sort the typical users into identifiable user groups who would want to access slightly different types of knowledge in different ways, suggesting that the hub would need to have several ways of offering access to information, depending on the needs of the user groups. The user groups so identified included university and other researchers, government officials, civil society organisation practitioners, private sector professionals, development finance organisations, and a global audience including donor organisations.

PROPOSITION

The process of review, research and survey outlined in this paper has led to a proposal to establish a national, online “Urban Knowledge Exchange”. Funded for the first three years by the Department of Science and Technology, and championed by the CSIR, the purpose of the Urban Knowledge Exchange would be to improve the delivery of quality human settlements, towns and cities by making reliable, evidence-based knowledge more widely accessible. A strong initial base of content partners comprising urban development organisations has been established to support and guide the initiative.

The value proposition to users and collaborators in the project would be to provide an effective and efficient way to explore and share quality urban knowledge to improve practice.

The knowledge platform would encompass thematic areas such as sustainable human settlement development and management, better infrastructure and services, access to well-located land, efficient shelter production, a more functional residential property market, improved transport networks, more equitable urban development, good governance, building resilience and responding to climate change, and promoting more affordable housing finance.

The main functional components of such a platform would include an online library of resources, a directory of experts and specialised organisations, a diary of activities and events, a strong search and browse function, and opportunities to participate in online discussions and raising queries about available information or expertise.

The design of the platform, and the supporting institutional, governance and funding arrangements, would take into account the key success factors outlined earlier that were garnered from observations of similar platforms around the world.

As the knowledge exchange and online collaboration platform becomes more established, including a growing number of content partners and users, further functions would be added and the platform could begin to serve a broader audience, expanding into the southern African region and the continent as resources allowed.

CONCLUSION

As societies become more interconnected through the internet and social media, there is greater potential for the exchange of knowledge that can, in turn, result in better practice 'on the ground'. The built environment professions and support organisations have perhaps lagged slightly behind other professions in exploiting these opportunities to improve knowledge sharing and online collaboration. Similarly the application of knowledge management approaches to improve the effectiveness of organisations and their networks has only recently caught hold in South African state and non-state agencies.

The multi-dimensional challenges of rapidly urbanising African cities and towns, and how various urban actors can best respond to these challenges, begs the question of how horizontal and vertical learning can be improved. The processes that shape the built environment of human settlements, towns and cities take many decades to

have an effect on the wider built form, and built form affects urban efficiency and access to economic and other opportunities for all urban residents. Learning and sharing between practitioners who are active in the area of shaping the built environment have always been important elements of promoting better urban development and systems. The enhancement of this process of sharing and learning by using constantly improving online collaboration tools and connectivity is now a priority, as is the promotion of more consistent and rigorous practices of knowledge creation and sharing. In this way we may go further towards realising John Turner's vision of an international communications network that improves the interaction of people in action. This paper has attempted to make the case for the need for such networks and platforms, and how they might be designed and sustained to meet the demand for knowledge about better urban practice.

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