(NIN): Network for Innovators

Total Papers: 11

Chair:
Franz W. Gatzweiler
Executive Director, ICSU-UNU-IAMP, Institute of Urban Environment,
Chinese Academy of Sciences, China
Co-Chair:
Soumodip Sarkar
University of Evora, Portugal

Time: 11:30-13:00
Venue: CR-1, KLMDC

1.

Innovation Networks: Social Capital and Successful Network Performance

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Innovation networks are loosely connected networks of various actors (including individuals, groups and organisations) which share information through horizontal, two-way communication, engage in high frequency of interactions, cooperate and collaborate in order to innovate. This paper conceptualises that successful network performance requires high degree of social capital. Social capital refers to the density and embeddedness of interactions rooted in trust, mutual understanding, co-operation, shared values and shared knowledge. The paper identifies a number of cases of successful innovation networks, for example, the Honey Bee Network, traditional knowledge networks, R&D networks, disaster management networks, the film-making network, the fashion designing network, labour networks and open-source software communities. The paper identifies the reasons for network success as high-density of interactions, two-way communication, horizontal information flow, power symmetry, trust, collaboration and reputation. The paper concludes that a high degree of social capital can lead to successful network performance. The imperative is to catalyse development of social capital at grassroots through appropriate institutional changes at macro (policy) level as well as micro (implementation) level.

2.

India's rurban spurt - towards self sustaining micro cities / living units and responsive policies & design

Shivaji
Architecture, Interiors, Furniture/ Product design, Design management

Design is a driver of innovation and is recognised as a key differentiator for providing a competitive edge to products and services. New avenues of innovation are needed to serve a billion. The idea to connect with the wider community for sustainable ideas and design is fundamentally about accessibility, ease and widespread research.

The usability of products, services, urban spaces, towns, cities lies in their intuitive response going back to its users. The systems needs to be in conscience with the evolving lifestyle and needs of humanity. The resources of nature may fall short soon hence a reverberating methodology is pre-emptive for survival, facing variety of challenges. Around the world vernacular styles have evolved over time, thriving over the odd challenges of nature. Traditional forms and features; because of their origin in the life and economics of rural societies; are seldom suited to urban conditions. With the application of latest technologies and material sciences an amalgamation can be achieved. In present day scenarios; Architecture and Design are not limited for designing tangible buildings and products but much more than that including a holistic approach towards providing total solution for living, working, sustaining nature and thriving in coherence with that. Holistic approach while designing a city, urban areas, neighbourhoods, dwelling units, commercial and recreational spaces, breathing zones, etc.

Harnessing energy will be the driving force, in designing machines around us. As generating power is getting more and more fuel consuming and polluting day by day, a new approach of designing gadgets, machines and everything around us can lead us towards cleaner ideas. Self sustaining building services, neighbourhoods and cities will be the new order of living tomorrow. Speciality City, Vertical Garden City, Underground City would take shape and would be providing comfortable condition within reach.

I'd like to cite example of tube hotels in Japan here. After all as per Albert Einstein "Imagination is more important than knowledge".

Keywords: Vertical Neighbourhoods, Self Sustaining, Harness, Venture below Earth Surface, Automation

3.

Not Janta, not Jaadoo, and not Jugaad: A critical reflection on the categorization of grassroots community members as users, innovators, and entrepreneurs

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Despite continued efforts to make development-oriented design empathic, participatory and user-centred, research and practice on *design for development* continue to distinguish between researchers, designers and users. Design efforts involving economically and socially marginalised communities in the Global South continue to frame the members of such communities as low-income, low literacy users for whom technological solutions need be designed (and who are presumably less capable of independently designing technological solutions). Joining with recent calls for greater reflexivity among design researchers and practitioners regarding their implicit assumptions and biases about communities as entities that must be designed for, I present a critique of social, material, and cultural differences that are cast as: (a) challenges to the research and practice in the field (e.g. Best & Smyth, 2011; Brewer et al., 2006; Dell, Vaidynathan, Medhi, Cutrell, & Thies, 2012), or, (b) clichéd accounts of entrepreneurial zeal and homogenised resourcefulness that is practised in the face of adversity (e.g., Rajdou, Prabhu, & Ahuja, 2012).

I trace such differences to scholarly assumptions regarding similarities and distinctions between the researchers', designers' and users' attributes and knowledge practices. I describe how the local epistemologies practised by members of marginalised communities have the potential to be neglected or discriminated in three circumstances that universalise and homogenise community members: (a) when the creative abilities and knowledge practices of community members are ignored or treated as constraints on field research (represented metaphorically by the label *janta*, the public), (b) when the creative attributes and knowledge practices of community members are valorised and cast as being incommensurably distinct from attributes and practices of their educated and resource-rich counterparts in the academy and industry (represented metaphorically by the label, jaadoo) and, (c) when resource-constrained individuals' enterprising abilities are framed as ideal templates for firm-level business practices of innovation (represented metaphorically by the label, jugaad).

To contest these labels, I identify communicative practices underlying collaborative knowledge sharing within grassroots communities by synthesising reflections on my assumptions, biases, and learning that occurred when conducting field research on the organisation of technological innovations with a critical review of the scholarly and popular literature on design, development, social innovation, and entrepreneurship. I share my learnings about the ways in which members develop novel, affordable technological solutions for locally occurring problems in their communities. In doing so, I draw on my participation in a five-day *Shodhyatra* in Jharkhand, India with members of the Honey Bee Network, and open-ended interviews, guided conversations and participant-observation of grassroots innovators and their local collaborators across 25 rural, semi-urban, and urban communities in India over three months.

I demonstrate how the "go-along" method can enable field researchers to "actively explore their subjects' stream of experiences and practices as they move through, and interact with, their physical and social environment" (Kusenbach, 2003, p. 463). My findings presented in part as a conversation with my informant, collaborator, and mentor Amrutbhai Agrawat suggest that individuals who develop technological innovations at the grassroots are frequently motivated by a perceived responsibility toward their local communities. Such *grassroots innovators* may or may not remain sanguine about the imitation of their designs by others. Their openness in sharing design-related knowledge is associated with the adoption of

an empathic design process in which innovators leverage their social and material embeddedness in local communities to observe and reflect on technology use in naturalistic settings. Grassroots innovators engage with human needs in specific geographical, economic, social, and cultural contexts and embody the potential for knowledge-rich, resource-poor communities to develop successful solutions to local problems. Grassroots innovations represent a community-based and user-driven model of technology design based on empathy and social responsibility that that problematises labels such as traditional, indigenous, and grassroots. As design for development scholarship develops its transnational agenda, we offer our research design and findings as points of entry for researchers to reconfigure the relationship between designers, users, and the contexts in which their interactions are situated.

4.

Soumodip Sarkar
Professor
University of Evora
Portugal

Our paper intends to make several contributions to the understanding of the innovation and entrepreneurship process in an area that has received scant attention. At a conceptual level, this study draws attention to how different streams of research thought merge in terms of organisational features and behaviour patterns. Our analysis of entrepreneurial behaviour based on different theoretical and methodical traditions, goes towards the enrichment of a "garden of entrepreneurial theories" ready for a variety of seeds from many different disciplines and perspectives. (Gartner et al., 1992, p. 27).

Keywords: grassroots innovation; social entrepreneurs

5.

An Ecological Perspective of Integrating Grassroots Innovation into Rural Development Strategy

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Rural development strategy is at present a big issue for Indonesia along with the implementation of Act 6-2014 that clearly states rural environment as a potential ecosystem to that should be made resilient. The diversity of this ecosystem on economic, socio-cultural and environment aspects is acknowledged as potential provider of resources essential for vitalisation of the rural economy. The policy provides privilege to approximately 79,000 villages to design and implement their own development plan. As a consequence, the need to have an appropriate strategy is utmost important.

In reference to the urge of focussing on local resources, we recommend utilisation of grassroots innovations (GRI) as a potential driver for rural development. As endogenous innovations initiated within the socio-ecological system, GRIs are utilised and developed further with the force of necessities. Those traits are strong foundations to attain sustainable productive utilisation. However to truly become the driving force of rural development, a strategy should be directed towards creation of enabling environment for the GRI to flourish and fulfil its role.

In reference to a case study of oyster mushroom farmers' group activity in Bandung District of West Java Province in Indonesia, we explore important components in the ecosystem of the grassroots innovation. Descriptive analysis of the case brings clear evidence that as an activity based on endogenous innovation, appropriate approach should always start from appreciation on the strategic role of the local innovators relevant to their ecosystem which is a prerequisite to establish rural development strategy in pursuit of rural prosperity.

Keywords: ecosystem, grassroots innovation, rural development.

6.

Approaches to Pro-poor Grassroots Innovation Making in India in a Historical and Comparative Way: A Critical Assessment

Dinesh Abrol, Amshika George, Amit Akoijam, John Rollins, Praveen ranjan, Sunny Dhiman, T P Raghunath and Vikram Singh

In this paper, we argue that the challenge of promotion of pro-poor grassroots innovation-making needs to be viewed as the problem of management of transition to a new path of pro-poor development involving a shift to the practice of paradigms of sustainable agro-industrial production in India. Pro-poor grassroots innovation-making calls for an exploration of context specific paradigms of multi-sectoral agro-industrial production in which peasants, artisans and rural labour can learn to participate and implement the values of socially sustainable development. It argues that under the resource constrained conditions that prevail in their own context of the limited access to resources, capabilities and markets they are required to use diversity-sensitive agro-ecological approaches for the design of socially sustainable development. In order to achieve the goals of this kind of transition the social movements must mobilise the poor to organise and emerge as the social carriers of pro-poor grassroots innovations by working in collaboration with the institutions of formal S&T sector for the implementation of such approaches.

With a view to understand the implications of the newly emergent scenario for the future interventions, in this paper, we have therefore, chosen to focus on the relevant political aspects of pro-poor innovation-making in India. In what follows, we discuss the role and contribution of the political traditions in the mobilisation of people for creation of pro-poor grassroots innovations. First of all, the focus is on the socio-technical frames used by the leaders of these political traditions to guide the course of societal interventions for the achievement of a pro-poor socio-technical success in India. Now, while the number of social carriers of innovation who can directly contribute in the mobilisation of the people for pro-poor innovation-making is greater than ever before, but in this connection we ask - what are

the lessons that can be learnt from the past efforts of the State and those of the social movements to stimulate pro-poor innovation generation in India? What determines success and failure?Finally, what kind of measures does the State need to take to make the transition to a new path of agro-industrial development?

In this context, the paper examines the experience of implementation of pro-poor grassroots innovation-making at the level of efforts undertaken in particular for the development of rural livelihoods since the beginning of Indian independence. Section 1 traces the evolution of the three main phases of pro-poor experiments in innovation-making with respect to the development of rural industries. A brief outline of the accommodation of the pro-poor grassroots innovation-making efforts by the three main political schools of thought namely Nehruvian, Gandhian and Left in India is presented. Second, it then attempts to answer the central question of learning appropriate lessons through the presentation of three detailed case studies of the "politics of institution building in formal S&T sector and higher education", the "promotion of knowledge production in State sector research and development (R&D) agencies" and the "innovation system building by social movements for pro-poor technology implementation".

It is argued that during the 1950s and 1960s, there was a lot of diversity in initiatives, and these were put into place by a variety of actors. After the mainstream Nehruvian leadership decided to give priority to the development of basic and capital goods industry, the same leadership also chose to accommodate in the planning process, the technological upgrading of economic activities being undertaken by the poor in India. A trajectory of gradual niche 'involvements' to uplift the poor followed during the 1970s and 1980s in the context of development of appropriate technologies in which the activists of different political traditions took actively part and tried innovation-making.

Second, with liberalisation, after the 1990s the strategy of State including of the knowledge institutions vis-à-vis pro-poor innovation making changed to a new configuration of interventions along with the changes in the strategies of pro-poor development the diversity of initiatives by the social movements is now under challenge. In the midst of these developments an important new pathway is under promotion through the National Innovation Foundation (NIF) directly under the leadership of Honey Bee Network (HBN).

Section 2 discusses the main results of the investigations undertaken into the work of the PSMs and the Honey Bee Network identified non-formal innovators in India. The authors conclude that the HBN needs to incorporate the principles of cooperation and collective participation in the selected strategies of intermediation to accelerate the outcomes and impact of grassroots innovations. However, the authors also note that today among the actors promoting "pro-poor innovations" in India we should include also several new actors and very unlikely champions of the poor – namely large firms, including foreign multinationals. They are also seeking to be the carriers of inclusive and frugal innovation in order to cater to the consumption needs of the poor. In the case of their own strategy, as things stand, corporate self-interest dominates. Corporations are not able to offer to the poor the benefits of competence enhancement and organisation of local production.

The authors point out that we are seeing the multiplication of failures to build partnerships with the poor as producers on the part of these corporations because of higher transaction costs given the diversity of interactions, difficulties in interpreting local demand, inability to

deal with heterogeneity and underestimation of the investment required in local capacity building for deeper inclusion of the peasants, artisans and rural workers. Since these limitations are because of the way these corporations handle the construction of vertically integrated supply chains or even networked systems there is a need for the initiative from the social movements as a whole to explore how we can cooperate to deal with the emerging challenge.

Section 3 argues that while in the case of social movements some of the grassroots innovations do address the production and consumption needs related problems of the poor people, but even in their case the capacity to empower them to become producers cannot come without augmenting at the level of local markets the arrangements of intermediation away from the direction of making each one of them competitive as individual producer. Results indicate that while the desire to share and help each and every one remains strong among non-formal grassroots innovators, the HBN and PSMs need to look into the challenge of competition arising from larger scale businesses in the markets under consideration.

On the basis of the analysis of the field experience carried out under the project on grassroots innovation movements at the CSSP, JNU, the paper concludes that though much success has been obtained in respect of insertion of the grassroots innovation making initiatives, but the tendency to leave to the individual producer to function on his own and grow as such without changing the organisation of production the system of production and innovation is coming in the way of upgrading the systems of production and consumption as a whole.

7.

Network of business and dynamics of internationalization of the S.M.E.

Hamid Akdim
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The insertion of companies in networks of partnership is a lever of competitiveness. The managing entrepreneur can, on one hand, fill the lack of the resources from which suffer most of the S.M.E., and on the other hand, to break its isolation by mobilising on common projects with other business managers, in optics of mutualisation of the skills. This communication has for objective to make an abstract contribution allowing understanding the contribution of networks in the dynamics of the process of internationalisation of the S.M.E. To this end, we led a qualitative research with S.M.E. of the region of Fès-Boulmane. We were able to notice that the network has four main contributions: an informative contribution, a commercial contribution, an organisational contribution and a strategic contribution.

Keywords: S.M.E., Internationalisation, Networks

8.

Institutional and technological innovations in polycentric order

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Technological innovations can lead to productivity growth among marginalised poor smallholders in agriculture. Depending on the institutional environment - which can be enabling or inhibiting - innovation, adoption and diffusion can contribute to improving productivity. Successful and sustainable technological innovations need to be accompanied by institutional changes which secure respective benefit flows to the marginalised and thereby reduce marginality. This contribution explains specific features of institutions, their polycentric organisation in nested hierarchies and the emergence of value from innovations, and how technological and institutional innovations mutually affect each other. Examples are provided in which different institutional environments have led to the creation, adoption and diffusion of technological innovations among rural smallholders. The cases show that overcoming institutional constraints and building new institutions and social infrastructure is as important as the technological innovations themselves. Understanding institutional environments and creating incentives to engage in the innovation process will help marginalised smallholders to live better lives.

Keywords: Institutions Innovation, Polycentric order, Marginality, Poverty

9.

Interactions With Makers and Grassroots Innovators

Anna Waldman-Brown
MIT, Fab Lab Network

The global ‘Maker Movement ‘is a trend toward the democratisation of technology by means of do-it-yourself culture, open-source sharing, and small scale manufacturing. Related initiatives include community workshops such as makerspaces and Fab Labs, giant Maker Faire festivals worldwide, and support for new inventions (and their inventors) through entrepreneurial competitions and activities. This movement has attracted significant media attention and interest from educators, multinational corporations (including GE, Intel, Cognizant, Microsoft, and Godrej Group) and national governments (including the United States, the United Kingdom, Russia, Nigeria, South Africa, Peru, and China).Although informal sector activities often overlap with do-it-yourself culture, our research indicates that many Maker initiatives in developing countries have ignored existing grassroots innovators--often in favour of top-down policies that supplant existing initiatives while attempting to target similar users. This paper discusses how the present lack of integration between Maker

initiatives and the informal sector resembles neo-colonialism through technological determinism; in addition, the popularity of creating new community workshops detracts from the support available for existing grassroots facilities and industrial clusters. This paper discusses how Maker Movements in the United States, Ghana, Nigeria, and Kenya attract elite actors, who ironically celebrate the methods and frugal creativity of grassroots innovators while ignoring the informal sector. There lacks a collaborative effort to incorporate grassroots innovators into spurring local technological development and creating opportunities for bottom-up innovation. This would require targeted initiatives to tap into the local skill and expertise from the informal sector, including their deep understanding of local markets for the goods and services that they provide. Due to the difficulty of documenting ideas from grassroots innovators, their contribution to the global Maker discussion remains limited and underappreciated. The paper identifies successful international collaborations with the informal sector, including Peru (bringing traditional weavers into Fab Lab Lima), Togo (collaborations with electronic waste-pickers and WoeLab Fab Lab), and Ghana (introduction of beekeeping through the Ghana Regional Appropriate Technology Information Service). The authors use exploratory and case study research methods to develop a framework for assessing how these interventions succeeded. To conclude, the authors provide recommendations for how the Maker Movement can embrace grassroots innovators in mutually beneficial collaborations.

Keywords: Informal sector, distributed manufacturing, innovation, Africa, fab labs, intellectual property, technology

10.

How traditional society can question the potential of smart cities in Africa. The Low High Tech experience in Togo

Agbodjinou Koffi
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L'Africaine d'architecture

Innovative co-working spaces (third places?) - Collaborative arrangements between work and relaxation - are emerging in many major sites of the city of tomorrow. Why develop these areas in Africa? What shape what size gives them? What role can they play in the revival of African cities? Why is it important to give an experimental and creative dimension to this revolution? These are concerns that have mobilised the research “L'Africaine d'architecture” in the development of inclusive urban utopia "African HubCities" and its "#RepLab"programme of creation and duplication of small local tech-hubs, of which, WoeLab is the first model. L'Africaine d'architecture explored the possibilities of an alternative architecture as practiced in Africa today by highlighting the so-called "modernity anchored" whose purpose is to serve strictly modern line projects delivering up to date

traditional forms but also to promote resources dynamic and knowledge of wine. The real challenge of this neo-vernacular posture was far to explore the urban scale. The platform is interested in new technologies since 2012 and a correspondence identified by Koffi Agbodjinou between the “hacker ethic”□ and African traditional societies values. #LowHighTech concept emphasises this paradoxical closeness and make possible a new approach of technology; putting it in the reach of all; including the poorest strata of society. #Lowhightech finds its application at the urban scale in HubCity□ an African "smart city"project. WoeLab was the first tech-hub established to serve this urban ambition. Today it is an unusual place- the only one in Africa open free of cost to everybody as perthe Democracy Technology ethic. WoeLab is, in fact, a real neighbourhood Fab Lab incubator-accelerator for boosting both open native hardware technology projects and international approaches of digital solidarity. It is a single framework for emulation where young Africans through their collective intelligence and free mentoring can get direct access to the inventorsThe WoeLabs project that best embodies #LowHighTech philosophy is the W.Afate 3D printer in recycled materials. This is the first African contribution to the 3D print technology presented as being at the source of a new industrial revolution."

Keywords: Technology, Democracy, Smart City, Sharing City, FabLab, 3D printno vernacular earth, architecture, anthropology, making open source, Technology Commons, grassroots; rooted modernity

11.

SOCIAL NETWORKS IN EDUCATION AND SOCIAL ISSUES

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Social networks combine different groups of people around the globe, in this regard, they provide wide opportunities for educational and social issues. Social networks became a tool of educational organization and self-organization of students. Research shows, that students who have an access to socialization of information, are also successful in learning. Different kinds of communities are actively developing in social networks. Many of them have been created especially for educational purposes in a wide range of disciplines and adjusted for different levels of education. For example, there are few well-known communities for foreign languages learning. Social networks provide a unique space for collective interaction, where students can discuss information they are interested in, collect data for common projects or support informal communication. Some of teachers and researchers are also using social networks as a platform for sharing methods of using social networks on different educational levels. Teacher can upload to social networks any studying material with no worries about sufficient amount of copies for the students. In social networks, you can directly lead work of students, answer their questions, discuss difficult tasks in case of lack of time in a classroom. Social networks give an opportunity to organize individual learning. Teacher can shift to the network a work with the strongest students as individual discussions, or vice

versa, clarify difficult issues for weak students. For classroom load reduction it is possible to organize group training in social networks. In this case, students could be divided into the groups where strong students helping to weak ones. Social networks can be productively used on all levels of educational process and extracurricular activities. Recently in Russian Federation increased popularity of using international and national social networks in context of help providing to socially vulnerable groups. They actively used for creation of charity communities both on regional and federal levels. Social networks give opportunities for attracting attention not only to individuals but for promotion entire regions which need additional attention and urgent funding. Social networks usage experience for educational or social problem solving shows, that each of these problems can be presented as a project that can be successful under the following conditions: 1. Presentation of complete, relevant and reliable information about the goals, methods and stages of the project.2. Regular presence in social networks community leader or project moderator, which actualize constant monitoring and information updates during project realization;3. Form of presentation of information is also important and should attract interest and emotional response from potential participants in the project. The fulfilment of these conditions is not a trivial task, therefore successful project implementation requires high level of motivation and responsibility of its leaders.