

The new enlightenment: a potential objective for the KM4Dev community

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The network Knowledge Management for Development, KM4Dev, has been growing around the idea that knowledge can contribute to the development of poor countries and groups in a disadvantaged situation. This idea has a great potential, because knowledge is the meta-resource of all resources. However, the role of knowledge in development refers to a systemic and macro phenomenon that goes beyond the field of management, and cannot be approached only from the micro perspective of management. For bridging the micro and macro perspectives of this problem, two experiences were analysed: The British Enlightenment in the eighteenth century and the current flow of emails in KM4Dev. The first experience was visited as a source of inspiration for applying knowledge in development, and the second was analysed to explore concrete possibilities. It was found that KM4Dev is a highly effective network, answering questions almost at real time. The conclusion is that KM4Dev can lead the creation of a new Enlightenment in the context of the twenty-first century. To reach synergy, the component of knowledge management should include the programmatic challenges that development agencies are facing currently, and the component of knowledge for development should focus on creating the right environment for making local innovation successful.

Knowledge is power
Francis Bacon

Introduction

After three and a half centuries of scientific and technological revolutions, humanity struggles with the existence of three billion people under the poverty line, one billion people who are poor and becoming poorer, and the existence of paradoxical islands of poverty inside countries with highly educated populations, mighty corporations, and sophisticated institutional frameworks. Despite the daunting complexity of this problem, we have three billion reasons for doing our best to discover ways of addressing the challenges of development, particularly in the issues of poverty and inequity.¹

Currently, in the field of development, there is awareness of inequities concerning income, race, technology, civil rights, etcetera, but the inequity regarding knowledge is not so well known. However, when people face the challenge of getting out of poverty, the wealth of knowledge they can manage and the types of reasoning they can do are decisive for being or not being able to create viable solutions, and development or stagnation is the aggregated result of their successes and failures.

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Poverty is not an easy problem to solve. It is systemic and also contextual. It depends simultaneously on global variables and on the specificities of local conditions and actors. Who has the knowledge for designing effective solutions for such a problem? Part of this knowledge is in universities, research institutions, and development agencies, but the biggest part is dispersed in the minds and practical experience of millions of people who are exploring successfully, or not so successfully, new ways of getting out of poverty.

Knowledge Management for Development (KM4Dev), a global network of people who value the importance of knowledge for development, is exploring the potential of being connected for sharing knowledge, and it is working well. Nine years after its creation, the initial momentum has not vanished, the number of members keeps growing, the technological architecture is becoming more effective, the flow of knowledge is continuous, and the social network is becoming denser. What can KM4Dev do to support millions of innovative experimenters in poor countries as well as to leverage their knowledge from micro to macro scales?

To explore answers to these questions this article explores two main sources of evidence: the history of innovation and the flow of email in KM4Dev. The history of innovation is explored for understanding under what conditions innovative experiences are more likely to succeed. Particular attention is given to the Enlightenment, a massive social movement that supported innovative groups in England and helped them to build momentum, and to end 12,000 years of economic stagnation.

In addition to that historical information, the flow of emails in KM4Dev is analysed to understand the questions and answers that are flowing in its veins. As a spontaneous phenomenon, that flow of emails is like the exchanges in a marketplace, where the demand of knowledge meets its supply. A qualitative analysis of the content of those emails was done to bring light to the expectations that generate the questions as well as the conditions that sustain the answers.

Based on these two sets of evidences, the article explores some roles that KM4Dev can play to build on its initial achievements and to open a new phase in this global phenomenon of knowledge sharing among creative people and institutions from the South and from the North.

Knowledge Management for Development

Knowledge Management for Development (KM4Dev) defines itself as ‘a community of international development practitioners who are interested in knowledge management and knowledge sharing issues and approaches, and who seek to share ideas and experiences in this domain’ (www.km4dev.com 2009). According with Ferguson and Cummings (2008, p. 14): ‘The community traces its origins back to two face-to-face workshops held respectively in February and June 2000, hosted by the Benton Foundation (Washington, USA) and the Institute for Development Studies (University of Sussex, Brighton, UK) respectively’.

Currently, most members of KM4Dev are professionals from development agencies, universities and research agencies, and also the private professional service sector. It is a highly collaborative, global, Internet based, and spontaneous network. KM4Dev gathers people interested in sharing knowledge about knowledge management and development subjects. It is a distinctive emergent phenomenon of the twenty-first century.

In its short history, KM4Dev has been able to affiliate approximately 800 members, and to construct a Core Group of 19 volunteers,² a community of practice around that Core Group, a webpage, a Wiki, a journal on knowledge management and a continuous and lively flow of questions, information and knowledge through its mailing list.³ Nine

years after its creation, KM4Dev is a vibrant community; it is evolving, and appears to be a seed of the future.

Knowledge Management for Development, as a network of professionals who work on development, has committed itself with the idea that knowledge can be managed in a way to contribute more effectively to development of countries and groups in disadvantaged situation. Based on the content of the emails and the articles in the *Journal* I assume that most KM4Dev members work in agencies that are doing or are related to direct work in the development field, and that they are interested in exploring ways of making real the idea of knowledge for development.

Knowledge management and knowledge for development

Knowledge management for development, as a conceptual field, combines two very different branches of knowledge: knowledge management (a field of management) and knowledge for development (a field of development). What KM4Dev, as a network, is doing is working in two different conceptual realms at the same time, applying the concepts of one realm to the other one. By doing so, it is possible not only to create fertile territories of cross-pollination, but also increase greatly the complexity of the work. The problem is when people use analogies from one field to the other field, not being aware of the profound differences between these two fields.

These two branches of knowledge have different histories and characteristics and need to be understood in their particularities. If we review the history of knowledge management, we find that it is a branch of management that stresses the importance of intangible assets of companies, and of knowledge as a component of those intangible assets. It develops methods for improving the recovery and use of knowledge throughout the organisation, and explores how companies can expand their capital of knowledge by learning, as well as by creating and deploying knowledge. The titles and the subjects of the wave of books published in the 1990s are illustrative of the origin and the sub-branches of knowledge management: learning organisations, intellectual capital, knowledge creation, community of practice, knowledge harvesting, working knowledge, etc.

As a sub-branch of management, knowledge management was created for working mainly inside organisations and in networks of individuals and organisations. The leading thinkers of knowledge management have developed conceptual frameworks, methods, and tools consistent with its management nature. Management is a technical field developed for addressing micro-social phenomena, and so is the conceptual framework of knowledge management.⁴

Growth, poverty, and inequity are systemic phenomena, and cannot be approached only at micro level. For example, the living conditions of Malawi's population depend on the characteristics of its regions, and on the internal policies of its government, but they are also influenced by what is happening in Mozambique, Tanzania and Zambia, as well as by the international price of maize, sugar, etc.

For that reason, development agencies and practitioners permanently face the challenge of making micro interventions, looking for the meaning of those activities in development, requiring from development agencies to create bridges for going from micro to macro levels.

Knowledge for development is a field carefully studied by historians and philosophers, and during the last decades by economists.⁵ Fifty years ago, Robert Solo established the role of knowledge in the continuity of economic growth, and won a Nobel Prize for that. After Solo's work, most economists have considered knowledge to be a driver of growth.

Knowledge and the industrial revolution

The first industrial revolution had elements that can be useful for addressing the relation between knowledge and development. Why is an industrial revolution (in the eighteenth century in England) meaningful for understanding the role of knowledge for development in poor countries, such as South Africa now, in the twenty-first century? We can learn from that long-ago experience because of the similitudes between the cognitive contexts of those British innovators and that of most development agents and social agents who work today in poor countries: fragmentation of knowledge, high costs for accessing knowledge, limitations for adopting knowledge, conflicting theories, etc.

If we look at the history of material production of humanity, we find that something very radical happened around 1750, when the industrial revolution started. Why did the industrial revolution break an interregnum of 12,000 years in economic non-development and put humanity, for good and for bad, on a new platform?

There were many factors, but currently economic historians (Mokyr 2002) agree that the level of fragmentation of knowledge before the scientific revolution was critical for preventing innovations and for keeping innovators from being successful. The emergence of a scientific attitude and the creation of the scientific method in the seventeenth century made possible the accumulation of knowledge and improved the accuracy of empirical knowledge; more reliable knowledge, despite its fragmentation, contributed greatly to improving the cognitive base for doing more rewarding technological experimentation. The new richness of the cognitive environment of innovators increased greatly the likelihood of their innovative ideas becoming real innovations. The likelihood of success of innovative initiatives was decisive for bringing more people into that effort, developing synergy among innovations and making possible a gain in momentum toward a revolution.

For an understanding of the importance of the cognitive base, we should make explicit a conceptual framework that expresses the relation between theory and practice in a different way than the positivist paradigm, and integrates tacit and explicit knowledge. This unified approach is based on the concept of useful knowledge, understanding that useful knowledge is any type of knowledge that can be used for thinking or for carrying out activities. Science is just a small part of useful knowledge. According to Mokyr (2002), useful knowledge can be classified into two main types: propositional knowledge and prescriptive knowledge.

Propositional knowledge

describes and catalogues all natural phenomena and the relationships between them . . . [it] contains what we call today science . . . but it [also] contains . . . geographical knowledge, artisanal and agricultural knowledge, and any other natural regularity and phenomenon that can be exploited in some way (Mokyr 2001)

Propositional knowledge contains as well the catalogue of all techniques that are known to work, as well as the principles of their operation.

Prescriptive knowledge is the whole set of techniques, blueprints, rules, whether explicit or tacit, a society could carry out. The elements of prescriptive knowledge 'consist of a set of [explicit] instructions, much like a recipe' (Mokyr 2001) and another set of the tacit skills required for applying those explicit instructions.

The cognitive environment of innovators is the sum of propositional and prescriptive knowledge they can access when carrying out their initiatives. Their capacity for effectively adopting knowledge that is accessible in their environment and combining it with their own knowledge, the epistemic base of their work, clearly influences their likelihood of success. Currently most innovators in less developed countries have almost no support

for improving the epistemic base of their initiatives, under the same conditions as the innovators in the centuries before the emergence of a new cognitive environment.

Industrial enlightenment

An aspect of the first industrial revolution that is illustrative for thinking about current challenges of knowledge for development is the role of the industrial Enlightenment. In the first moments of the British industrial revolution, most scientific fields were still in their beginnings, and science was almost disconnected from technology. However, the British society developed a broad social movement to fill the gap and to increase the likelihood of success of innovative initiatives. Mokyr named that movement ‘Industrial Enlightenment’, a movement oriented to ‘observing, understanding and manipulating natural forces’ (Mokyr 2002).

The role of this movement was to bridge the gap between the existing propositional knowledge (Mokyr 2001) and the requirements of innovators, between people who were discovering the laws of natural sciences such as mechanics, electricity, chemistry, thermodynamics and the like, and those who were working in factories, garages and private ‘laboratories’ trying to invent better looms, spinning mules, new production methods and new tools. The members of the Enlightenment did their work by writing articles in newspapers, creating newsletters and journals; gathering people, carrying out seminars, conferences and informal meetings; building social networks, developing mechanisms of social recognition of innovators; contacting innovators with sources of knowledge and resources, etc.⁶

The Enlightenment movement worked as a cognitive bridge and enabler. Once a technical problem was identified the members of the Enlightenment were capable of mapping out the elements of propositional knowledge identifying and organising pieces that could be helpful to the solution of the problem.⁷ When required, they identified the pieces of knowledge that were missing, the questions that had no answers, and the issues that should become agenda for scientists and theoretically qualified people.⁸

The members of the Enlightenment also played the role of diffusion of all improvement in the state of theoretical knowledge and of new development at the technical level (the portfolio of emerging technologies). Complementary to that role, they contributed to improving the capacity of innovators for assimilating theoretical discoveries, for understanding the foundation of emerging technologies and for applying new knowledge.⁹

If we review the sanitary revolution that took place in the second half of the nineteenth century in Europe and North America we find the same pattern of a social movement promoting the application of the scientific discoveries and also of the new hygiene practices required for protecting the household health. Before the understanding of how epidemics spread and of the bacteriological cause of contagious diseases, the cognitive base of medicine was very limited. Once the base of reliable knowledge became broader, hospitals were redesigned, health policies redone, and brigades of volunteers went to the streets promoting cleanliness for houses, clothes, and hands.

In terms of natural sciences and physical technologies, the cognitive base today is highly consistent throughout the world, and the route from basic science, to applied science, to technological research and to product development is very well structured; but if we examine social technologies, we find that the cognitive base for innovating is much less clear. Despite the broadening of the agreement about sound macroeconomic policies, global and local development agencies and Nobel Prize winners in economics still have deep differences among them when proposing concrete policies and programmes for addressing poverty and inequity.

Social innovation in the twenty-first century

Development is, most of all, the result of the synergy among millions of innovative initiatives people take everyday in their local societies, generating new and more effective ways of producing, trading, and managing their resources and their institutions. The work of policy makers and development agencies may contribute greatly to the success of those initiatives, may shape them, or may undermine those efforts.

What type of innovation drives development in the twenty-first century in less developed countries? It is mainly innovations in social technologies, such as institutional frameworks, business models, environmental policies, market rules, political norms, etc. The belief that physical technologies were the primary variable for developing less developed countries was predominant in the first three decades after World War II, but experience showed that the capacity of local societies for adapting themselves was decisive to the level of adoption of physical technologies. At the global level there is already a wealth of physical technologies that can be used in less developed countries, but the filtering, combination, adaptation, or re-creation of them depends primarily on how the local or national society can change to make their use viable. Most physical technologies cannot be used without a new set of social technologies that reorganise local social life around their new features.

Which are the current cognitive conditions for people who are innovating in social technologies in less developed countries? What is the epistemic base of their innovative initiatives? How supportive is the current cognitive environment in the context of less developed countries for people who are, on the ground, trying to make things work? How can they access, adopt and adapt the knowledge they need to be successful? For most development and social agents in less developed countries the cognitive environment is not so different from that of England three centuries ago, before the industrial revolution.

There are, however, three main differences between today and the conditions of the eighteenth century: (1) the issues today are not about the understanding of the physical world (chemistry, biology, physics, etc.) for creating new machines but about the understanding of the systemic problems of current society (ecology, economy, epidemiology, etc.) for creating new institutions and business models, (2) the diversity of sources of information today is overwhelming and (3) the level of complexity of current useful knowledge is much higher than before. Therefore, the barriers for finding and selecting useful knowledge are still challenging.

Knowledge for innovation

Knowledge is important for the work of development agencies from two different perspectives, as social resource and as agency resource. (1) Knowledge can be seen as a social resource if it is considered an asset local society can deploy for solving problems; similar to the way British society used existing European knowledge for feeding its industrial revolution. (2) Knowledge can be seen as a resource of development agencies, as the knowledge the agencies have about societies, development, and management with the purpose of defining their policies and programmatic approaches.

For talking about knowledge as a social resource, we need to delimit knowledge in its relation to the work of development.¹⁰ We have to focus on the knowledge that can be effectively mobilised by local society for addressing specific problems of development; for the scale in which those problems are being approached, being aware that mobilising knowledge implies first of all mobilising people and institutions.¹¹

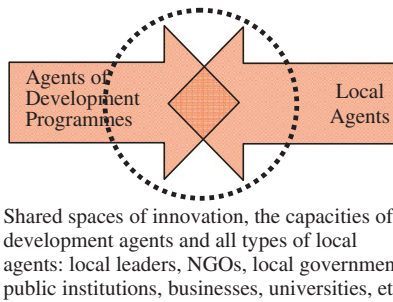


Figure 1. Shared spaces of innovation.

For understanding how to mobilise knowledge, as social resource, for promoting development, we need to put innovation at the centre of our reasoning about development, considering innovation as the driver of development and knowledge as the enabler of innovation. Innovation is a local phenomenon, is a local (national, in some cases) change that disturbs the system and creates conditions for a more productive, equitable and sustainable way of doing things. Innovation is not something that a development agency brings from outside. Processes of innovation should be understood as a shared effort of two groups of agents: development agents and social agents. Through these spaces of innovation both groups of agents collaborate in generating new solutions for the problems they are facing together, as is shown in Figure 1.

The ideas about collaborative innovation (Allen 1983), collective intelligence and the likes are not new, but have been acquiring more recognition in recent times. Diverse authors have been stressing its effectiveness in business, academia and social movements (Surowiecki 2005, Tapscott 2006, Von Hippel 2005, Gloor 2006). These approaches can be highly useful for designing the shared spaces of innovation.

This concept of shared spaces of innovation resembles the concept of epistemic communities (Figure 2) referred by Ferguson and Cummings (2008), but these entities are not identical. They both are defined in terms of their epistemic base, they also have a common purpose and depend on their skills, cognitive habits and environment. They both need to gather a diversity of perspectives for dealing with complex problems and for working

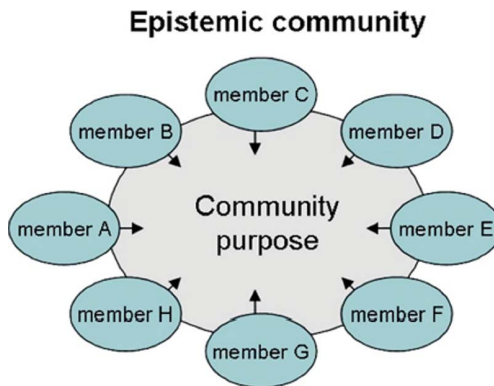


Figure 2. Epistemic community.
Source: Ferguson and Cummings (2008).

together. However, local spaces of innovation can have internal motivators and can self-organise their members in networks and groups.

Local shared spaces of innovation, fuelled by development programmes and projects, can last enough to design, experiment, and improve innovations in social technologies and to adopt or to adapt physical technologies. These spaces can structure local networks of innovative initiatives, and can connect them with local allies and with external knowledge. If well managed, they can go beyond temporary activities to the creation of permanent institutions, preparing the people who will give them continuity.¹²

In terms of cognitive process, it is not a question of combining knowledge from the South and knowledge from the North, scientific knowledge and indigenous knowledge, local and global knowledge, as abstract entities. It is a question of mobilising all types of knowledge around processes of innovation. Each type of knowledge can maintain its own epistemology; the innovators will select which piece of which knowledge they find useful for their work.¹³ The challenge is to make the dialogue effective, maintaining the diversity of perspectives and conceptualisations.

Programmatic innovation and the contribution of KM4Dev

Programmatic performance is the primary motivation in development agencies for managing knowledge. One reason for that motivation is their mission. Development agencies were created to help poor countries and disenfranchised groups solve their problems and improve their lives. The quality of programmes is decisive for that mission. Hence, development agencies have the necessity of improving the effectiveness of their actions and investments, and the quality of their programmes is the single most important variable for that effectiveness. The second reason is the expectations of their stakeholders. More and more the public from developed countries, the main constituency of development agencies, is eager to see results in poverty overcome and inequity. The third reason is the competition for limited funds. These three reasons together explain why agencies have felt the need to become learning organisations since the 1980s.

This is an area where all development agencies have been doing systematic efforts for a long time. Connected with the project cycle, they developed systems of monitoring, reporting and evaluation, and outside the project cycle, we have a whole portfolio of activities and methods, both formal and informal, closed and open. Independent of their effectiveness, it is evident a systematic effort oriented to programmatic innovation.

If we analyse the subjects of the questions and knowledge that flow through the emails in KM4Dev we can conclude that its existence is primarily for improving programme implementation and learning from experience. The originators of the questions are mostly development agents, at local and regional branches of global and local agencies and at headquarters of global agencies.

An analysis of the flow of 397 emails between 11 March and 5 June 2009 showed two main categories of messages: 128 emails were among the members of the Core Group of KM4Dev (32%), and 269 emails were among the net members in general (68%).¹⁴ As is shown in Figure 3, the Core Group exchanged email about tools for Knowledge management (KM) and Knowledge sharing (KS) (43%), logistics (23%), governance (13%), journal (13%), and conceptualization of KM4Dev (9%).

The net members, in general, exchanged emails with two main purposes: (1) asking and answering questions (74%) and (2) advertising and sharing information (26%). The flow of questions and answers among the net members was to 59% about methods, methodologies, and tools (prescriptive knowledge), 18% explicitly about software for KM and

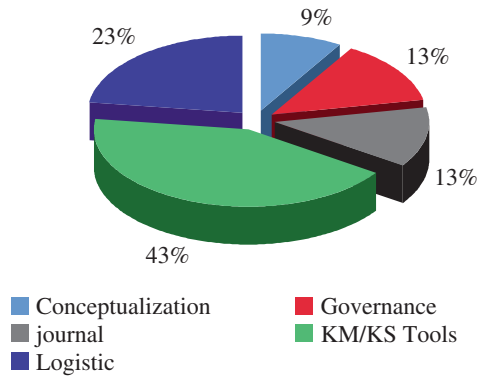


Figure 3. Emails by subject in core groups.
 Note: KM, knowledge management and KS, knowledge sharing.

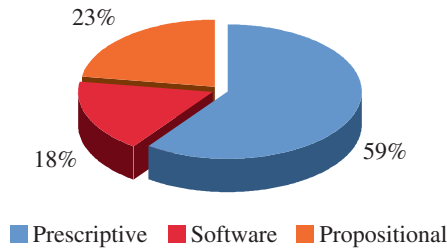


Figure 4. Subjects of the questions.

KS (mechanised prescriptive knowledge) and 23% about conceptual approaches for KM and KS (propositional knowledge). The emphasis on methods and software was 77%, and some of the discussion about conceptual approaches was also related to methods and technologies (see Figure 4).

Similar to the industrial Enlightenment, KM4Dev address the cognitive and institutional fragmentation of useful knowledge for development, enabling development agents to access that knowledge, by helping them to find knowledge and by reducing their access costs. Once a question is put on the net, it triggers a flow of answers about the subject of the question or about sources of information. Between 52 and 68 people have been paying the role of knowledge brokers and enablers; connecting questions, answers and sources of information (see Figure 5).¹⁵

Once a question is sent to the net, these people look at their battery of knowledge, contacts and experience and send back some suggestions and links to where to find more information. Some of the KM4Dev members participate in sending answers and also questions, acting from both sides: supply and demand.

As became apparent in the sample observed, the questions were related, predominantly, to technologies, methodologies, tools and software, for programme implementation, for knowledge creation, for knowledge sharing, and for learning. The flow of information is clearly oriented by the demand, by questions asked by development agents. However, the doubt remains that it is this set of technological tools that makes programmes more effective or innovations more likely to succeed in the context of less developed countries.¹⁶

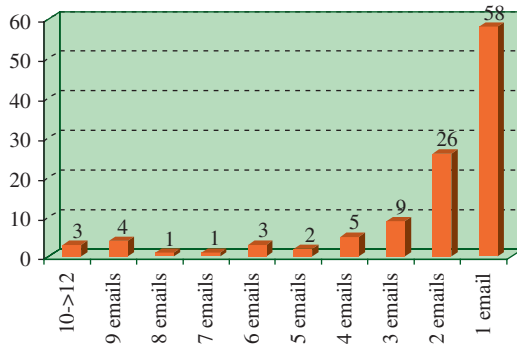


Figure 5. Flow of emails among net members.

KM4Dev does this work of providing information on knowledge sources at very low costs and with extraordinary efficiency. There were 36 questions posted in total, and only 5 remained without answers (14%). Those answered questions (86%) received on average 7 answers for each one. The costs of getting the information were writing the question and going through the thread of emails with answers. This is a very low cost, compared with searching and verifying the reliability of that information by themselves. By making the flow of emails open to everyone, the reliability of the information is verified by peers at real time. Based on the comments of satisfaction of those who asked the questions, we could conclude that the information has been very useful.

A second level of the contribution of KM4Dev is through the agencies and development practitioners who value knowledge management and are transferring tools and methods to their partners in the South (see Figure 6). Gradually these Northern institutions are influencing Southern NGOs and local institutions to use the resources of knowledge management (KM) and organisational learning (OL) in their operations. The Southern institutions are also using those cognitive methods and tools with the social groups they work with, contributing to processes of social learning. Some of them do believe in social learning and use their cognitive methods and tools for improving the learning processes of their local partners. However, social learning is not yet predominant among the members of KM4Dev.¹⁷

A third level of the contribution of KM4Dev is related to the conceptual approaches of (1) knowledge management, (2) organisational learning, and (3) development programmes. This *Journal*, the meetings of KM4Dev members, and a fraction of the emails

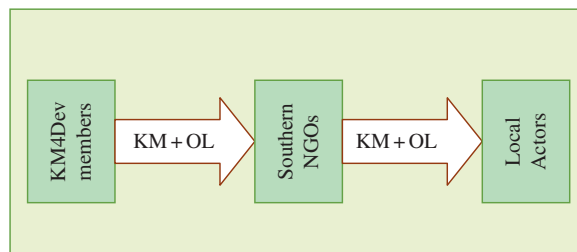


Figure 6. Flow of methodologies and tools.

Note: KM, knowledge management and OL, organisational learning.

are vehicles for sharing knowledge on conceptual topics. At this third level the contribution of KM4Dev is also highly meaningful, but not yet so well defined.¹⁸

For understanding the flow of knowledge about knowledge management and organisational learning among the members of KM4Dev (topics (1) and (2) in the previous paragraph) we should be aware that those subjects were developed by private organisations in the 1980s and 1990s and that the predominant effort of development agencies is focused on adaptation and application to the conditions of development work. However, development agencies have also invented new methodologies for participation, knowledge harvesting, knowledge sharing and collaborative processes of knowledge creation at the local level.¹⁹

The third element, knowledge about development programmes (programmatic knowledge), is very different from the first two. It does not come from private domains, but from the world of development agencies, and it has been the subject of continuous innovation by the agencies. As expressed above, the quality of the programmes has to be a core competence of any development agency, for reasons of mission and competitiveness.

How is programmatic knowledge evolving? Twenty-five years ago, in the early 1980s, the number of innovation centres in programmatic knowledge was only a few dozen worldwide. These innovation centres were restricted to the headquarters of those most qualified official and international agencies, creative private agencies, and research centres of Northern universities. Currently, the number of these centres of innovation in programmatic knowledge has multiplied worldwide, and there are also thousands of interesting experiences going on the ground. Currently, there is a huge asset of knowledge emerging on the ground.

As has already been mentioned, programmatic knowledge are social technologies, and economists who have studied the evolution of technologies (Mokyr, 2001, Nelson 2003, Beinhocker 2006) have found that social technologies evolve much slower than physical technologies. The reason for the slower pace of evolution is the difficulty in arriving at a consensus about the set of criteria to identify the winners and state clearly why they were superior to the others. Reviewing the work of some renowned economists over the last five years we find a diversity of approaches for development policies competing with each other, with no clear signals of programmatic alignment (Sachs 2005, Easterly 2006, Collier 2007, Stiglitz 2007).

In the 1990s, the World Bank explored the idea of becoming the global knowledge bank for development subjects, but that idea was not feasible because no single institution can play that role. Programmatic knowledge is an evolving subject, emerging simultaneously in many places, and highly dependent on context. Because of the emergent character and dispersion of programmatic knowledge, it is impossible to create one single knowledge bank, a single receptacle for that evolving knowledge. What is needed is a diversity of spaces and media where that knowledge can flow and become visible and shared, better mechanisms for accelerating its evolution, and better methods for programmatic innovation.

Conclusions

Historical studies have shown that innovation was the engine of the industrial revolution, and that the new cognitive environment of England made possible for innovation to gain momentum. Before the creation of that new cognitive environment, innovators could not find the propositional knowledge they needed to become successful. It was the British Industrial Enlightenment, a massive social movement that bridged the gap and helped innovators to find the knowledge they needed.

In the twenty-first century innovation is required to overcome poverty and reduce inequity. In contrast with the industrial revolution, when physical innovations led the process, today innovation has to be primarily in social technologies. Social technologies are context dependent, and require innovation to take place in a decentralised way, on the ground, in poor countries and disenfranchised communities, as a collaborative effort of development agents and local social agents.

Innovation in development programmes or programmatic innovation used to be done by a small group of Northern development institutions, but in the last 20 years programmatic innovation has been moving to the South. Programmatic innovation is currently carried out by thousands of teams of practitioners worldwide. As an emergent phenomenon, programmatic innovation requires the support of a network-like architecture to gain momentum.

In less than 10 years, KM4Dev has become a global network of development agents who share the idea that knowledge can contribute to the development of poor countries and groups in a disadvantaged situation. KM4Dev is already playing the role of a cognitive bridge for development agents worldwide, and the demand of methodologies and tools of development agents have shaped the flow of knowledge among the members of the net. KM4Dev plays that role with a high level of efficiency, providing reliable answers to development agents on a daily basis, almost in real time, and at very low cost.

To become more effective, programmatic innovation will need technical resources, such as methodologies, cognitive tools, and software, but it will also need to get access to all kinds of experiences, reflections, and conceptual approaches (propositional knowledge) that already exist and are being created to address the causes of poverty and invent possible solutions. Interestingly, KM4Dev is already addressing some of those experiences, reflections, and conceptual approaches in the forthcoming *Journal* issue and in global meetings.

KM4Dev can become an engine of programmatic innovation by channelling reflections on programmatic approaches informed by thousands of experiences. By playing that role it can contribute to change the process of design of development programmes from the current predominant top-down approaches, inside a small number of institutions, toward a phenomenon of collective innovation of global network of practitioners, communities and scholars who are experimenting on the ground.

KM4Dev can be thought of as an initial expression of the new trends of development work in the twenty-first century, when programmatic innovation has migrated to the South, led by a new generation of institutions and development practitioners, and the Internet made it possible to be connected worldwide. By supporting local spaces of innovation, enabling knowledge access to innovative initiatives, channelling knowledge sharing among innovative programmatic approaches, and by reflecting on its own experience KM4Dev can make a distinctive contribution to the creation of a new Enlightenment oriented to solving the complex problems of poverty and inequity, and the impacts of climate change.

Notes

1. This article is a piece of a larger reflection about the cognitive dimension of social inequity. It is part of a long-term effort for understanding how the social differences are reproduced and how they reproduce themselves in the terrain of cognition. In the opinion of the author, this approach goes far beyond the ideas about digital divide that are so valued today.
2. The Core Group of KM4Dev is responsible for the governance and the logistical management of the network. Its membership is volunteer-based and self-organised. The Core Group has been defining the policies, raising funds for the network, organising the annual face-to-face meetings, and solving all problems of the Internet's operation.

3. In 86 days, between 11 March and 5 June, there was a flow of 397 emails on the KM4Dev mailing list. One third of these emails were among the members of the Core Group of KM4Dev, and two thirds were among the members in general. This flow means that 6.5 emails were sent each business day.
4. Some agencies and development agents are sharing the approaches and methods of knowledge management and organisational learning with their partners in the South. So, methods of knowledge harvesting, tools of knowledge sharing, methods of collaborative knowledge construction, etc. are becoming more frequent in the battery of methods used by Southern development agents in their fieldwork. This is highly relevant because any improvement in how people learn and manage their knowledge is positive. However, the idea of using knowledge as a factor for overcoming poverty and inequity requires going beyond the positive use of the tools of organisational learning and knowledge management.
5. Recently, some thinkers and development practitioners have been exploring this field through the concept of social learning, but it is still in its beginnings. I consider myself one of these people.
6. To illustrate the idea of how vast the Industrial Enlightenment was consider that, in the eighteenth century, England had around 6 million inhabitants, which meant roughly 1.2 million families. If we assume that 15% of European families at that time were upper or middle class, we have 180,000 high and middle class families. Mokyr (2002) estimated that there were 200,000 people participating in the Industrial Enlightenment. This means that the majority of upper and middle class families had one or more members involved in that movement.
7. This propositional knowledge at that time was a combination of fragments of science, manuals written by engineers, explanations of the operation of other apparatuses, and theoretical and empirical reflections. Currently, this propositional knowledge could be a collection of diverse approaches from the different stakeholders interested in the problem and with experience in the field.
8. Some years ago, reading about the Japanese industrial revolution, I found that they also have created bridges between scientists and engineers with creative artisans by carrying out knowledge fairs. What was unique about these fairs was that the speakers were the artisans and the scientists and engineers were the public. Once the artisans had explained their ideas and needs the scientists and engineers should find the knowledge the artisans were asking for as they were going forward in their innovations.
9. The enthusiasm of the industrial revolution and the industrial Enlightenment was based in the promise of the industrial production (the embedment of knowledge in machines and the use of fuel for making those machines work to generate useful goods and services). The owners of industries and patents became millionaires, and the industrial products of the United Kingdom spread across Europe and the Americas in the nineteenth century. There was also the promise of science for improving health and wellbeing, and the emerging idea of modernity. It was the combination of these three elements that fed such a deep enthusiasm for the industrial Enlightenment.
10. The general relation between knowledge and society, as in these analyses of knowledge societies and knowledge economies, is too broad to use in defining useful approaches in development.
11. It is not that the way knowledge is distributed in modern society is not important. However, it is necessary to be aware that those topics have to be addressed in a way that combines general conceptualisation with the treatment of concrete subjects such as education, science, innovation, etc.
12. A precondition is the mapping and identification of the innovative initiatives and the assessment of their institutional and cognitive conditions and environment.
13. I do not advocate for relativism among all types of knowledge. When health authorities believed that cholera was transmitted by odors, millions of people died during uncontrolled epidemics. When they discovered that there was a bacterium in the water provoking the disease, the effectiveness of sanitary measures improved greatly. The social costs of the myths about HIV are very well known, especially in Africa. However, we should be careful to not be judgmental towards knowledge that comes from other cultures just because its concepts are so different from those we are familiar with.
14. The search engine of Hotmail defined the selection of the time frame of the sample. The author searched 'KM4Dev' in his inbox and the search engine of Hotmail came up with 400 emails, starting 11 March and concluding the day of the search on 5 June 2009. This way of sampling is not representative of the history of KM4Dev, but can be taken as a snapshot of the last three months. Three emails were eliminated because they were not part of the flow of KM4Dev, and the list of 397 was sorted by sender and by subject. Those 128 emails from the Core Group were analysed separately from the 269 emails from the net in general. Most members of the Core Group participated in both lists of email. To classify the emails by subject, the author

read two or three emails of each thread. Most emails were easy to classify but some others could have received different classifications.

15. It was assumed that most of the people who sent more than one email (52) were also contributing with answers. There were 36 questions. If we subtract this number from 58 (those people who sent just one email) we have 16 people who have sent just one email but did not send questions: $58 - 36 = 16$ and $16 + 52 = 68$. This calculation is just an approximation, but can give us an idea of the level of participation.
16. In addition to demand, there are two other reasons for that flow. The first reason is that methodologies and tools are subjects that KM4Dev enablers know very well, so they can deliver their answers without much use of their time. The second reason is that methodologies and tools are not matters of discussion; the questioner will verify the adequacy of the methodologies and tools by reading their manuals or later, after applying them in a couple of cases.
17. A few years ago, I tried my best to convince an international NGO to give priority to social learning in their programmatic approaches, but I failed in my objective. I hope other people can be more successful.
18. Because the importance of more interpretative and conceptual contents will increase in the future, the contents of the *Journal* deserves an analysis beyond the scope of this article.
19. We should also be aware that most professionals in development agencies are interested more in the application than in the conceptual development of these fields. The reasons for that focus on operational and methodological subjects are not clear to the author. This should be further analysed because they are an important cause of over-learning.

Notes on contributor

Sebastiao Mendonça Ferreira is Brazilian. His first passion was physics, but he turned his life's work towards the social subjects in the early 1970s and moved to Peru where he worked for 20 years in development and research. He became a consultant in the 1990s self-studying in strategic planning, microfinance and knowledge management. He is author and co-author of six books in these fields including *Creacion de Futuros* (1998) and *Planeamiento Estrategico para Microfinanzas* (2006). In 2006 he joined the Massachusetts Institute of Technology as a research fellow at the Community Innovators Lab where his work is focussed on innovation in communities and supporting students in reflective practice. Addressing the cognitive divide is his personal priority.

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