USE OF SOCIAL MEDIA TO SHARE KNOWLEDGE ON AGRICULTURAL IMPACT, PLANNING, ASSESSMENT AND LEARNING (IPAL)

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Executive Summary

The ALINe team undertook a desk- based study on how social media could contribute to sharing knowledge on agricultural Impact, Planning, Assessment and Learning (IPAL). This involved a review of metrics on existing social media in Africa, summary and analysis of evidence on social media from international development and general literature, development of a conceptual framework and its application in analysing findings, assessment of the relevance of social media to the agricultural IPAL knowledge domain, prediction of the demands investments in social media could place on ALINe and other actors and identification of candidate capabilities and technologies that could respond to those demands.

Our provisional conclusion is that social media's overall relevance to the agricultural IPAL knowledge domain is modest. However, given our primary user context for IPAL knowledge are rural areas with low levels of investment in ICTs, this level of relevance is more significant than it would otherwise appear. Our recommendations of how ALINe should be orientated toward social media are given in this light.

Note: *Although this study was undertaken as internal exercise to inform ALINe future activities, the findings could be relevance to a wider audience, particularly those planning similar activities using social media.*

1. Introduction

How can social media contribute to sharing knowledge on agricultural Impact, Planning, Assessment and Learning IPAL (methods and outputs)? Whether for farmers, agricultural organisations or foundations that fund them, project officers, agricultural communities of practice, or the wider field, what is the potential value added? Popular use of a wide range of web 2.0, mobile phone, email and other technologies constitute the rapidly growing field of social media. The rise of peer networks aggregating around different social affiliations (diasporas, alumni, occupations, leisure interests, etc.) is particularly notable. Diverse networks and communities maybe creating the soft infrastructure of civic globalisation using social media. What should ALINe's orientation towards it be?

Through this exploration of social media ALINe will come to understand when social media can be useful for sharing and learning about agricultural IPAL knowledge and when other methods are more appropriate. Before we reach that outcome we need to answer several questions: Why would investment in access, sharing, learning and creating knowledge be valuable to ALINe's purpose? What are the innovative ways that social media is facilitating access, sharing, learning and creation of development knowledge? Are these innovations relevant for agricultural IPAL knowledge? If so, what capabilities and technologies in ALINe would optimise their potential for our audiences?

The main output of this exploration is this short report on the use of social media methods to share knowledge on agricultural IPAL. This report sets out findings from our analysis of the literature on existing innovations, their relevance, demands and implications for how to configure ALINe's relationship to social media.

1.1 Approach Taken

To explore the potential contribution of social media to sharing knowledge on agricultural IPAL the ALINe team planned the following activities:

- Identify and Summarise Existing Evidence (case studies, evaluations, reviews, articles)
- Gather and Summarise New Evidence (interviews) – Gap Filling
- Develop Conceptual Framework (to apply to the evidence base)
- Analyse Evidence and Generate Findings
- Generate Conclusions on Relevance of Social Media Innovations in Development to the Agricultural IPAL Knowledge Domain and Implications for ALINe
- Generate Conclusions on Demands of Using Social Media Innovations in Development for Agricultural IPAL Knowledge Intermediaries and Users and Implications for ALINe
- Identify Candidate Personal Capabilities and Technologies that Respond to Demands
- Analyse Appropriateness of Capabilities and Technologies for ALINe and its Audiences
- Draft, Seek Comments on and Finalise Report on the Use of Social Media Methods to Share Knowledge on Agricultural IPAL

2. Definitions of Social Media

The field of social media is relatively new and is characterised by dynamic change (the first social network site SixDegrees was established in 1997 and closed 2000, in 2009 there are over 150 major sites[1]). Hence there are few authorised definitions of social media as yet and they are likely to change and remain contested for several years yet. Here are a range of definitions to help guide our thinking about social media:

- **A definition that focuses on the interpersonal networking dimensions (e.g. Facebook)**
  "We define social network sites as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site."
  (Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, *13*(1), article 11
  http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html)
- **A definition which focuses on the creative dimensions (e.g. Wikipedia)**
  "Social media are media where information and content is generally created by users themselves using new technologies that allow easy use and access by powerful publishing technologies, publication and exchange. Social media are rich in the influence and interaction between peers and a public hearing which is increasingly intelligent and participative. The social environment is a set of digital platforms to amplify the impact of WOMM (Word of Mouth Marketing) and so is measurable and therefore profitable."
  (Wikipedia Espanol entry for Medio Sociales, Google translation accessed on 15 November 2009: http://es.wikipedia.org/wiki/Medio_social)
- **A definition focusing on the public dimensions (e.g. Twitter)**
  "Social media [add] another dimension to the ability of the Internet to connect and mobilise communities and individuals at the local and global levels. The various networks, or 'networked publics', that they give rise to encompass more highly visible and malleable connections than those supported by the previous generation of Internet technologies."
  Berdou, E. (2009), *Social Media and ALINe: Insights from theory and empirical studies,* Background Paper, IDS, Brighton.
- **A definition uniting creative and public dimensions**
  "Social media is media designed to be disseminated through social interaction, created using highly accessible and scalable publishing techniques. Social media supports the human need for social interaction, using internet and web-based technologies , to transform broadcast media monologues (one to many) into social media dialogues (many to many). It supports the democratisation of knowledge and information, transforming people from content consumers into content producers […] Businesses also refer to social media as user-generated content (UGC) or consumer-generated media (CGM)."
  (Wikipedia entry accessed on 15 November 2009: http://en.wikipedia.org/wiki/Social_media)

For the purposes of this paper we are going to use the following working definition:

> **Social media enable people to create, publish, share, collaborate, discuss and network through a wide range of new, mainly digital, formats and platforms.**

2.1 Limits of the Working Definition

Our working definition of social media is largely adequate for most of the new digital Web 2.0 formats and platforms such as Facebook, Wikipedia, and Twitter. However, it may start to create limits to our understanding of the potential role of social media for ALINe when we are considering non-Web 2.0 platforms, in particular mobile phones or considering blends between traditional media (print, radio and television) or local media (storytelling, theatre) and social media. For example, a mobile phone call or SMS exchange between two people ought to not be considered an instance of social media. However, it is not so clear that a

[1] Wikipedia list of major active social networking sites, accessed 17 August 2009: http://en.wikipedia.org/wiki/List_of_social_networking_websites

cluster of mobile calls or SMS texts that share information or data around a group (e.g. coordinating the time and location for a social gathering between friends – like a flash-mob) or from an individual to a local network (e.g. a family doctor letting parents know that a Tuberculosis vaccine is now available – like FrontlineSMS Medic) are not also social uses of media tools. Similarly it is not clear that a radio program that encourages listeners to phone in to discuss a topical issue between them live on air is not social media (e.g. the BBC World Service's Africa Have Your Say radio program[2]). As the boundary between social and other media is not clear and will shift, especially in sites of unexpected innovation such as Africa, this paper will not exclude examples that partly fall outside of the working definition. In particular we have included group and networked uses of mobile phone text messaging (SMS and longer formats). This is because despite the limited breadth of content these applications achieve in any communicative action, the cumulative and pervasive effect of many such actions by a group or network can be profoundly social.

3. Why Would Investment in Knowledge Creation, Access, Sharing and Learning be Valuable to the Outcomes of ALINe?

Our first guiding question for this study is "why would investment in knowledge creation, access, sharing and learning be valuable to the outcomes of ALINe?" A decision to invest would imply that ALINe considered the spin-off communication effects from grantee activity alone as insufficient to meet ALINe proposed outcomes which are:

1. Strengthened capacity of agricultural development organisations to undertake more effective project monitoring, learning, evaluation and reporting
2. Well developed and executed innovations to strengthen farmer feedback mechanisms
3. New capability to generate public goods in monitoring and evaluation (M&E).

How would this implication be justified? This important question needs addressing before our paper proceeds to interrogate the extent and potential of social media in Africa. We will look at each outcome in turn.

Considering the first outcome, hypothetically project capacity in M&E might be strengthened in individual (i.e. non-social) ways through learning by doing and demand responsive training for staff. Such a targeted and individualised approach could be considered sufficient when viewed on a project by project basis; however there are significant risks and opportunity costs associated with this model. On the risk side learning by doing and demand responsive training project by project could create blind spots in relation to the contextual and system dimensions of agricultural development. This risk could be off-set by comparing M&E capacity demands between projects placed in analogous and related positions within the wider farming system. In terms of opportunity costs, capacity strengthening for each project in isolation could reduce opportunities to build on M&E practice lessons from earlier or geographically separated projects. A social media investment would enable and democratise this comparison and learning activity by ALINe and its stakeholders.

Successful innovations in farmer feedback mechanisms (Outcome 2) can be envisaged in terms of ALINe's engagement with individual projects and synthesis across them. However, beneficiary feedback approaches are being experimented with in other sectors and by other actors (e.g. humanitarian assistance and CARE international). An investment in social media around ALINe activities in this area would support an Open Innovation[3] model now widely recognised as likely to lead to faster and more appropriate creativity. The counterfactual could be more risky, with innovations overly influenced by sector and actor specific framings of beneficiary feedback ideas that could go unchallenged / be inadequately reflexive.

Public goods in monitoring and evaluation generated by ALINe (Outcome 3) are less likely to identify, build and meet demand if they are not informed by market intelligence and customer dialogue. Without a knowledge sharing platform that meets contemporary expectations amongst professionals for co-creation and networking opportunities around public goods it is less likely that ALINe will be able to engage deeply with potential users. Social media tools are for the time being at the cutting edge of knowledge sharing platforms and as such a valuable component of an ALINe investment in user engagement.

[2] http://news.bbc.co.uk/1/hi/talking_point/africa_have_your_say/default.stm
[3] Chesbrough, H (2007) *Open Business Models*, Harvard Business School Press, Boston

It seems that an exploration of social media in the context of ALINe outcomes is justified because social media can enable access, sharing, learning and creating knowledge in ways that can offset significant risks to ALINe and help it better realise opportunities. Similar outcomes might be achieved by good internal communication within the ALINe team but the knowledge generated would be less visible to others and tend to follow existing relationships (path dependency).

4. Metrics on Social Media in Africa

Given ALINe's orientation towards the African continent it is worthwhile sketching out some preliminary indicators of the degree to which platforms and formats that support social media are being used. These kinds of metrics go out of date quickly and are rarely comprehensive but they are indicative of usage levels and trends.

4.1 Internet

For many people social media are synonymous with the internet. Africa's reputation for poor connectivity shows little danger of changing. Reporting on a 16 country study from 2008, Gillwald and Stork report that in half of the countries studied *"over 40% of those surveyed for example attributed their reluctance to use the Internet to the high cost."*[4] The slowness of the connection was another deterrent. However, these were not the main factors – *"the primary reasons for those who knew what the Internet was, but were not using it, was the lack of access to a personal computer and an absence of knowledge on how to use it.*[5] Without reasonable connectivity we might expect that social media would be finding it difficult to take a foothold in Africa, but we know that use of social media is growing on the continent. What may help us to solve this apparent conundrum is the rapid rise of mobile phones on most of the continent.

4.2 Mobile Phones

With landlines absent or unreliable in many parts of Africa, participation in social media is significantly dependent on mobile phone platforms.

> *"Broadband access across sub-Saharan Africa is still nascent, but with increased roll out of fixed wireless services such as CDMA and WiMax this is beginning to change. The high cost of computers and the low uptake of them by households suggest that limited mobile Internet usage is more likely, though currently far too expensive for generalised use." (Gillwald and Stork 2008, pg. 33)*

The percentage of the population aged sixteen and above with a mobile phone or active SIM in 2008 in a cross section of African countries is shown in Table 1.

[4] Gillwald, A and Stork, C (2008), *Towards Evidence-based ICT Policy and Regulation: ICT access and usage in Africa,* Vol.1, Policy Paper Two, www.researchictafrica.net

[5] Gillwald, A and Stork. C (2008) op.cit

Table 1. Population Aged 16+ with Mobile Phone or Active SIM in Selected Countries in Africa 2008

Country	Of All Population %	Of Rural Population %	Of Urban Population %
Benin	30	16	53
Botswana	59	51	65
Burkina Faso	27	20	56
Cameroon	36	18	54
Côte d'Ivoire	42	21	63
Ethiopia	3	1	16
Ghana	60	48	75
Kenya	52	52	53
Mozambique	26	17	53
Namibia	49	38	72
Nigeria*,**	77	76	82
Rwanda	10	6	26
Senegal	40	26	54
South Africa	62	49	71
Tanzania	21	16	38
Uganda	21	18	43
Zambia*	45	31	72

Notes:
* Results for Zambia and Nigeria are extrapolations to national level but not nationally representative.
** Mobile subscribers in Nigeria include fixed-wireless services. The figures still to be read with caution since the survey methodology was not nationally representative in Nigeria. The results shown here are national extrapolations.
Source: *Gillwald, A and Stork, C (2008), Towards Evidence-based ICT Policy and Regulation: ICT access and usage in Africa, Vol.1, Policy Paper Two, www.researchictafrica.net*

These levels indicate the potential to participate in social media by a significant proportion of the population in many African countries. This is despite the fact that the costs of mobile phones in Africa are relatively high compared to other continents and as percentage of disposable income. SMS text charges in US dollars and Purchasing Power Parity dollars in 2008 are listed in Table 2 below.

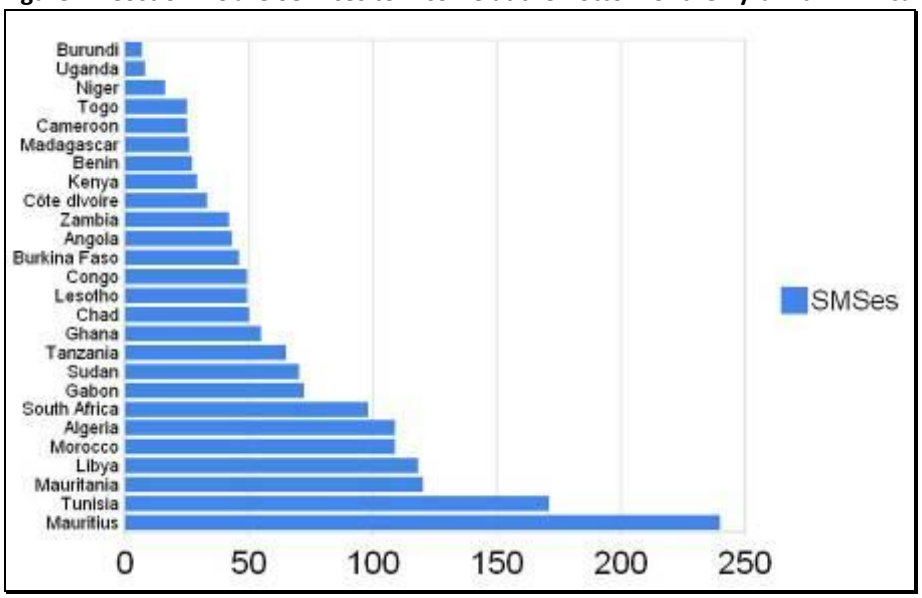
Table 2. Costs of One Local SMS in Selected Countries in Africa 2008

Country	US $	PPP $	Country	US $	PPP $
Guinea	0.02	0.05	Burkina Faso	0.07	0.15
Mauritius	0.02	0.04	Central African Rep.	0.07	0.11
Ethiopia	0.03	0.11	Zambia	0.08	0.10
Mauritania	0.03	0.07	Mozambique	0.08	0.17
Botswana	0.04	0.09	Algeria	0.08	0.14
Tanzania	0.04	0.11	Malawi	0.09	0.28
Ghana	0.04	0.07	Madagascar	0.09	0.19
Tunisia	0.05	0.10	Nigeria	0.09	0.14
Kenya	0.05	0.10	Togo	0.09	0.18
Sudan	0.05	0.08	Rwanda	0.10	0.25
Namibia	0.05	0.09	Lesotho	0.10	0.21
Senegal	0.05	0.08	Angola	0.10	0.15
Gambia	0.05	0.13	Swaziland	0.11	0.22
Seychelles	0.06	0.13	South Africa	0.11	0.19
Egypt	0.06	0.17	Morocco	0.11	0.17
Benin	0.06	0.11	Côte d'Ivoire	0.12	0.17
Niger	0.06	0.11	Cameroon	0.12	0.20
Mali	0.06	0.10	Comoros	0.16	0.22
Uganda	0.07	0.16	Cape Verde	0.21	0.21

Source: *Steve Song's Blog http://manypossibilities.net/2009/04/sms-costs-in-africa-2008/ quoting the International Telecommunication Unions report "Measuring the Information Society".*

In his blog - Many Possibilities, Steve Song has some estimates of "the cost of mobile services to income at the bottom of the pyramid in Africa"[6] as presented in Figure 1.

Figure 1. Cost of Mobile Services to Income at the Bottom of the Pyramid in Africa



Whilst this data snapshot indicates that on average one day's labour at minimum wage in Africa could only pay for 17 SMS text messages this doesn't mean that SMS is inaccessible. For instance, in Kenya the retail price of a 250ml bottle of Coca-Cola in 2008 was between 25-30 Kenyan Shillings. This is about 5 times as much as the cost of one SMS noted in Steve's underlying data (5 Kenyan Shillings). Fairer mobile costs in Africa are certainly worth lobbying for as they would dramatically extend access, but mobile services need not wait for that price fall before being developed.

In South Africa the mobile based social networking platform MXit has more than 5 million members (www.mxitlifestyle.com) and in East Africa Hersman[7] has reported on a very similar service Sembuse. This has been developed by a Kenyan firm – Symbiotic, who also offer it as part of their web and mobile social network in beta release (a software testing stage) - Zunguka (www.zunguka.com). Commercial research sponsored by mobile phone software company Colibria and conducted by Frost & Sullivan expects the market for mobile social networking in Latin America and Africa to reach 527 million users by 2015. Quoted on the Cellular News website, Frost & Sullivan "estimates the combined market will be worth almost US$2.4 billion, with growth being driven by increased availability of the internet, mainly through mobile phones."[8] It is hard to predict how the arrival of cheap and ubiquitous broadband internet access will eventually shape social media use in Africa. But until that time and quite possibly beyond it mobile phones are likely to play a much larger role in social media on the African continent than in any other region. We will look closely at the literature for evidence of how the relationship between mobiles, the internet and Personal Computers (PCs) may play out.

[6] Song, S (2009), Fair Mobile – Some Data, http://manypossibilities.net/2009/11/fair-mobile-some-data/, accessed on 15 November 2009.

[7] Hersman, E, *Sembusa: East Africa's first mobile social network, http://whiteafrican.com/2009/04/26/sembuse-east-africas-first-mobile-social-network/, accessed 16 July 2009*

[8] Mobile Social Networking Set to Increase Ten-fold in LatAm and Africa, Cellular News (Nov 2009), http://www.cellular-news.com/story/40696.php, accessed on 20 November 2009.

4.3 Facebook

The leading social networking site Facebook, though based in the United States (US) and most popular in North America and Western Europe, still has significant and growing country usage in Africa, as indicated in Table 3. These African levels are actually ahead of usage in many Eastern European countries. The potential for growth in Africa has been recognised by Facebook itself in its decision to enable a Swahili language version, with Hausa and Zulu versions also expected[9].

Table3. Facebook Usage Trends in Selected Countries in Africa October 2008 to January 2009

Country	Global Rank	Users Oct '08	Users Jan '09	Growth
South Africa	23	1,077,440	1,123,660	4%
Egypt	26	859,820	921,720	7%
Morocco	40	267,200	369,660	38%
Tunisia	44	117,440	279,780	138%
Nigeria	51	163,480	224,560	37%
Kenya	63	114,220	154,220	35%
Ghana	84	41,680	60,360	44%

Source: *http://www.viralblog.com/social-media/facebook-adds-40-million-users-in-90-days/ accessed on 15 July 2009*

Facebook is not the only social networking platform with widespread use in Africa. Kreutz[10], quoting the Ignite Social Media 2008 Social Network Analysis Report, points to several other platforms including: Hi5, Bebo, Flickr, Flixster, Netlog, and Twitter.

5. Evidence from Social Media Literature

Literature on social media has been collected within two domains. The focus has been on the domain of social media within development, which makes up 78% of the references sighted. Within this selection this paper is biased towards examples that address agriculture and the African continent because of ALINe's orientation. We have also looked at the domain of social media in general, accounting for the remaining 22% of references. This selection has been biased towards examples that address non-profit actors and tends to be skewed towards OECD experience because of the larger pool of evidence there. We see the development domain as an overlapping subset of the more general social media one. Most of the literature reviewed comes from grey material rather than official journals. This partly reflects the relative youth of these domains and also the bias within the domains for open, collaborative publishing.

What follows is a high level synthesis of the literature based on summaries of each item selected. The categories used to organise the synthesis emerged from our reading of the literature as the most significant areas of evidence that deserved further analysis. More detailed excerpts from the literature summaries are presented at Annex A. We also conducted brief email interviews with expert practitioners and researchers in the field to plug gaps in the literature and provide additional evidence (see Annex D). This material is incorporated in the synthesis below.

5.1 Farmer Advisory Services

Social media and ICTs are starting to demonstrate their potential for the co-creation, co-documentation and co-distribution of information and advice on farm practices. This potential lays both in their power as enabling media tools and as symbols for open and collaborative ways of working. This potential is timely given the retrenchment of public agriculture extension services over the last decades. The risk perhaps would be in trying to fill the gap left by the extension officer to exactly and missing the opportunities for innovative reworking of what farmer capacity development could be.

5.2 Mobile Phones

[9] BBC News 15 June 2009, *Facebook Swahili Version Launched, http://news.bbc.co.uk/1/hi/world/africa/8100295.stm, accessed on 15 July 2009*

[10] Kreutz, C, *The Next Billion, the rise of social networking sites in developing countries, http://www.web2fordev.net/component/content/article/1-latest-news/69-social-networks, accessed 16 July 2009*

Experience from OECD countries about the use of mobile phones is being challenged in Africa where low incomes, old age and illiteracy are not proving to be insurmountable barriers to widespread take up. However for very poor people and those in remote locations benefiting from mobile phones is often at the expense of essentials. Texting in non-Roman script languages is more difficult (e.g. Arabic script uses twice the data of Roman). The low energy, cheaper infrastructure and voice capability of mobiles makes them effective as extension tools where other ICTs have struggled. For many people, mobiles have brought connectivity for the first time. Mobiles can compliment and extend radio by offering interactivity. FrontlineSMS, by turning an offline computer and mobile phone into a communications hub, is perhaps the most promising social media platform for much of rural Africa. MXit is a strong contender for social media platform for urban Africa beyond its stronghold in South Africa, but requires JavaScript capable handsets which exclude the very cheapest models used by the poor. Both are non-subsidised and highlight the important role of enterprise in harnessing mobiles benefits. The creative and transactional capabilities of mobile phones are being tapped to create innovative enterprises in Africa. African non-governmental organisations (NGOs) value mobile phone benefits (time saving, coordination, reach, data sharing) and rely on them more than those in the North. PCs will not be entirely replaced by mobile phones, especially for tasks involving creating content and as broadband internet gets cheaper in urban Africa around 2012. Around 2015 it is likely that mobile internet enabled devices with the off grid capabilities of mobiles and the processing power of PCs will supersede both for popular ownership.

5.3 Accessibility

Social media and other ICTs do not, by their existence, transform income and other asset inequalities (e.g. educational attainment, social power) that largely determine access to the potential benefits they offer. Gender authority structures and relations interact with the costs and benefits of mobile phone use but are generally not seen as a direct driver of inequalities, rather as an overlay or mediator of them for good and bad. In practice, and largely because of their initial novelty, ICTs may appear to transcend these inequalities but they largely re-establish the status-quo in new forms (e.g. the benefits of mobile airtime expenditure cutting into expenditure on other necessities). Social media can also magnify risk for people who are already vulnerable to abuse of state power because they lack rights or protection because of age, sexual orientation, ethnic identity, etc. If social media and other ICTs do transform inequalities it will be through their innovative use to better create, grasp or sustain livelihood opportunities in other domains. This implies short-term investments to overcome the barriers to participation in these livelihood activities. Those with fewest assets will need to have their participation supported in the short-term to avoid entrenchment of existing inequalities. Subsidy should cover the cost of handsets and acquiring information literacy skills, as well as mobile airtime (e.g. Open ICT4D principles). However, there is little confidence that subsidy is sustainable outside of essential public services like health and that elsewhere users will have to pay as best as they can for services that meet their needs so that suppliers can recover costs (e.g. Nokia Life Tools and Google SMS Trader).

5.4 Rural Areas

The rapid spread of mobile phone networks into rural areas that have never had a two-way communications infrastructure, has the potential to connect people in all the ways that global telecommunications now offers (local, national, international). Whether it has the potential to transform rural areas in ways that transcend core-periphery relations with local urban centres is unproven. However, in many areas with no landlines and no internet, mobile phones, enhanced by tools like MXit and FrontlineSMS do offer the potential to bring social media to opportunities that would otherwise be unavailable. WiMax and 3G mobile may bring internet services to rural citizens eventually but the time horizon is expected to be significantly longer than the 2012 date predicted for unconstrained access for professionals in urban areas in Africa.

5.5 Web 2.0

Web 2.0 tools could help marginalised actors to adapt knowledge through remixing, redistributing and co-creating content. Web 2.0 is more bandwidth heavy on any device or network. Access to diverse media tools at the local level can lead to farmers and the community creating and sharing local agricultural knowledge more successfully than narrower top-down approaches. Web 2.0 combined with mobile phones for content gathering can connect global funders with local campaigners more directly than before, but also sidestepping national structures in ways not possible before. Co-creation tools like wikis are influencing ways of conceiving action towards more transparent, distributed and light models typified by networks for mobilising autonomous actors and underutilised resources. These models of action are still fundamentally about human enthusiasm.

5.6 Networks
Social media's ability to dynamically aggregate many weak links is giving renewed impetus to network centric models of social and economic change. For rural communities location specific networks that mobilise trusted peers (e.g. neighbouring farmers) can build capabilities through co-creation of knowledge and co-learning. In resource poor and risk prone environments a diversity of media including internet, radio, print, mobile phones, television used in social ways facilitates wider participation in networks. The emergence of the protocols that enable these socially mediated networks in the 21 century mirrors the international protocols of the 19th century that grew up around media like the letter post and telegraphs (e.g. the ICRC using the international postal service enabled by the Universal Postal Union in 1874). Social networks still have a place within them for more central hubs of coordination and brokers of relationships.

5.7 Mapping and Global Positioning Systems (GPS)
The ease by which position data can be created and mapped is creating opportunities for aggregation and access to location specific information. In combination with Web 2.0 tools co-creation, re-mixing and redistribution of this information (e.g. combining position data with health and conflict data in www.ushahidi.com or with soils data in www.africasoils.net) can be a powerful driver for collaborations between new configurations of actors.

5.8 Bottom of the Pyramid Social Media Enterprises
Web 2.0 tools, especially in mobile phones, are being used in urban areas to reverse the assumptions about how poor people benefit from ICTs. A view that includes their role as digital producers and entrepreneurs is needed to catch up with reality in Africa and build on strengths.

5.9 Collaboration Spaces
Social media not only permit collaboration but they have the potential to re-configure the spaces and interactions that emerge through them. Whilst it may not level inequalities, social media can create opportunities where improbable relationships can be formed.

5.10 Social Benefits
Measures of performance for social media need to be sophisticated enough so as not to exclude benefits that cannot be directly quantified or monetised.

5.11 Patterns of Social Media Growth
Use of social media services in OECD countries continues to be very strong, especially in English speaking countries. There is some evidence that these services are leading to media switching, with a decline in use of traditional email. Non-profit organisations in USA are actively using commercial and bespoke social networking platforms. However, the membership of these networks remains comparatively low and the financial returns from them are not yet significant enough to lead to switching from traditional marketing channels. The detail of these growth patterns (e.g. in terms of particular services used) cannot be directly transposed internationally, with some marked differences in Africa. To really understand how attitudes to knowledge differentially affect social networking and collaboration it is important not to generalise at the African level. Many other factors (age, gender, education, income, family situation) interact as well as and perhaps more powerfully than national / ethnic identity. National and local contexts must be understood through situated experimentation (e.g. the country based initiatives of Google Africa and the Microsoft Innovation Centres in Africa).

5.12 Traditional Media and Mediation
What in future will define traditional in terms of media content, production, distribution and relationships is being written by social media actors rather than those in more traditional media such as print and television. There is no status-quo at present in terms of what 'the media' is. However, for processes of learning many other media toolsets and mindsets will remain relevant and probably more relevant than social media. Face to face interaction underpins most good collaboration, even if it then migrates into other mediated spaces and tools.

6. Conceptual Framework for Analysis of Evidence

To assist in analysing the evidence gathered from the literature, a background paper was commissioned[11] which highlighted how social media support 'networked publics' (highly visible and diverse online networks organised on the basis of different interests and aims). Berdou's (2009) review of theoretical approaches to social media uses the concept of mediation to explore what it means to participate effectively in the online spaces and networks created through social media. Mediation describes the relationships between socio-economic, technical and institutional factors influencing how social media are designed, deployed and used and which determine how different, offline and online networks intersect. Addressing the issues of learning and collaboration, Berdou focuses on the potential of social media to support generation, distribution and absorption of information among groups of professionals and practitioners. Finally, looking at democratic processes and accountability she addresses issues that could arise from comparative constituency feedback approaches (farmer feedback systems) that combine social media and mobile phones.

Berdou highlights many of the anticipated benefits from investments in social media such as making possible decentralised networks and communities that transcend familiar organisational and geographic boundaries and empowering citizens to make decision-makers less unaccountable. She is also careful to point out how these potential benefits are challenged in their realisation by factors such as differential abilities to participate in and control social media related to existing socio-economic structures or less tangible and stable contributing factors such as trust in relationships and incentives to collaborate.

Based on this material Berdou suggests how elements from these different perspectives can be combined to form a conceptual framework that can inform our understanding of the deployment of social media in the context of ALINe. A summary of this conceptual framework focusing on perspectives and implications is presented in Table 4.

Table 4. Conceptual Framework for Analysis of Social Media

Perspective	Implications
• Critical tradition in media, communications and technology studies associated with the concept of mediation • Communicative capabilities approach to the use of ICTs	• Consequences of connecting with existing networked publics and corporate platforms • Dangers of favouring members who are already well-connected • Need to think creatively about how to enable access for those who may not have the necessary skills and how to connect local and global networked publics • Implications of deploying social media within the specific organisational context of ALINe
• Communities of Practice perspective	• Need to specify what the purpose of collaboration and the frame of participation is • Consider creating safe spaces for the exchange of information (either offline or online) and specify boundary objects for collaboration • Managing online expressions of communities of practice may be labour-intensive • There might be a need for defining and managing boundaries between existing and emerging networks and communities of practice
• Critical tradition in the field of technological innovation concerned with the links between ICTs, power and the political	• Need to clarify implications of learning / constituency feedback mechanisms for decision-making processes • Need to clarify roles and responsibilities of the groups that involved in each scenario • Need to think about how different choices may affect relationships between different groups and come up with solutions to address inequalities

Source: *Adapted from Berdou, E (2009) Social Media and ALINe: insights from theory and empirical studies*

[11] Berdou, E (2009), *Social Media and ALINe: insights from theory and empirical studies,* Background Paper, IDS, Brighton, UK

7. Implications from Analysis

Our working definition is that social media enables people to create, publish, share, collaborate, discuss and network through a wide range of new, mainly digital, formats and platforms. Available metrics have led us to propose that until such time as cheap and ubiquitous broadband internet is available in Africa (and probably beyond it) mobile phones are going play a much larger role in social media on the African continent than desktop computers or laptops. Our review of the literature on social media has identified twelve groups of findings that may be relevant for ALINe. Berdou's conceptual framework introduced four perspectives on social media which are now used to review our findings and begin to answer the second of our study's four guiding questions. The second question is "What are the innovative ways that social media is facilitating access, sharing, learning and creation of development knowledge?" We answer this question in its four component parts.

7.1 What are the innovative ways that social media is facilitating <u>access</u> to development knowledge?

In terms of access to development knowledge the role of mobile phones is marked. For rural citizens mobiles are the first tool that provides real time access to geographically dispersed bodies of knowledge held by people in their networks or repositories, with significant practical benefits. Mobile phones' success is more remarkable set against a history of other technologies' failure to offer real benefits to rural citizens. Assumptions about social barriers to access transposed from OECD social media experience may be misleading in Africa and ergonomic barriers are themselves diminishing. Use of social media can though introduce new social, economic and gendered risks for already vulnerable groups. The existence of mobile telecommunications infrastructure is an asset for those with previously restricted access to knowledge. However the economic, cultural and governance assumptions embedded in the provision and operation of this infrastructure need to be taken into account when assessing its impact, especially on rural and vulnerable citizens. Following Berdou, our analysis of findings from the literature highlights the following implications:

- Mobile calls from rural to urban areas can have very significant benefits in terms of resources saved or profits made because of access to current knowledge that enables better coordination (e.g. of travel) and bargaining (e.g. over contracts). African NGOs rely on mobiles more than others and see huge potentials. From a communicative capabilities perspective the existence of mobile infrastructure in rural areas adds to the assets people can use to achieve livelihood outcomes through social media, potentially including providing IPAL services *(cf. rural areas).*
- Mobile phone networks in rural areas are often providing national and international connectivity for the first time and a foundation for social media opportunities in the absence of the internet (e.g. FrontlineSMS). From a mediation perspective the embeddedness of mobile networks in commercial and governmental domains means that issues like privacy (e.g. surveillance) and pre-existing biases (e.g. urban) need to be considered rather than seeing mobile communications as a blank sheet *(cf. rural areas).*
- Mobile phones can penetrate where other ICTs have failed and can be used in combination with other media (e.g. radio) to provide social media extensions. From a power and ICTs perspective this penetration and extension can be seen as potentially increasing popular participation and transparency but also implying a need to clarify new relationships to avoid manipulation *(cf. mobiles).*
- The cost of participating in social media in terms of owning technologies and using services (especially data heavy Web 2.0 applications accessed from PCs and mobiles) need not be so high as to exclude poor people but can still put them at risk (e.g. increased financial debt, widening inequality as elites capture benefits). From a communicative capabilities perspective it would be important to consider subsidising handsets, airtime and information literacy skills for at risk groups until costs decrease (e.g. for next five years) and pursuing win-win opportunities with commercial partners for financially sustainable services *(cf. accessibility / mobiles / Web 2.0)*
- Low income, old age and illiteracy are not insurmountable barriers to mobile phone use in Africa and prioritising these dimensions as problems may reflect OECD assumptions and biases. From a communicative capabilities perspective it is important to recognise the different institutional frameworks in different African countries and how these differently shape participation in social media (e.g. Arabic scripts and SMS). From a mediation perspective predictions about uptake of social media in Africa cannot be transposed from OECD experience, or for that matter between different African countries, because each growth pattern is significantly locally embedded *(cf. mobiles / patterns of growth).*

- Voice recognition and text reader functionality could extend access to illiterate farmers using mobile phone based extension services. From a communicative capabilities perspective such functionality is creatively enabling those who might otherwise have been excluded by a social media approach to farmer services because of gaps in human capital formation (i.e. reading and writing skills) *(cf. farmer advisory services).*

7.2 What are the innovative ways that social media is facilitating <u>sharing</u> development knowledge?
In terms of sharing development knowledge, the ability of social networks to configure multiple weak links into stronger mutual knowledge sharing relationships is marked, especially for otherwise socially or economically marginal actors (children, patients, refugees, etc). Social networks alone are not transforming power structures but are temporarily warping them. The benefits of sharing knowledge using social media need to be understood holistically. For these benefits to challenge inequalities, investments beyond social media would be required. Non-internet social networks linking mobiles through PCs are a distinctive social media platform that has emerged first in Africa. The largely digital nature of the tools and platforms of social networks in no way diminishes the need for social and emotional capabilities amongst participants and for transparency in decision-making. Following Berdou, our analysis of findings from the literature highlights the following implications:

- Social networks can still be powerful for people who have no other assets than their own social capital (e.g. refugees reconnecting with distant family members). From a communicative capabilities perspective enabling global connections to aggregate small amounts of social capital is an opportunity *(cf. networks).*
- Social media do not have the power on their own to level social and economic inequalities but they can re-shuffle the pack of collaborators. From a mediation perspective interventions in addition to supporting social media tools and capabilities would be needed to promote greater equalities in knowledge sharing *(cf. collaboration spaces).*
- Social media have the ability to directly connect powerful and weak actors (e.g. Ackvo fundraising social network) and also transcend existing governance structures (e.g. national government). From a power and ICTs perspective decision-making within these novel relationships needs to be as transparent as the information flowing across them to build accountability *(cf. Web 2.0).*
- Mobile based social networks like MXit or ones enabled by Mobile / PC hubs like FrontlineSMS are enabling new constellations of peers to share information in real time (e.g. doctors and patients, schoolchildren, peace activists). From a communities of practice perspective the emergence of these social networks creates demands for facilitators who can help manage the expressions of these communities and their governance *(cf. mobiles).*
- Social networks are fundamentally human constructs more than technological ones and are driven by qualities like enthusiasm and emotion. From a communities of practice perspective it is important to be very mindful of how changes in these human qualities impact on the effectiveness of these network organisations (e.g. trust evaporating due to poor governance) *(cf. Web 2.0).*
- Measures of the benefits of knowledge shared by social media should not exclude factors that are hard to quantify or monetise (e.g. building social capital). From a communities of practice perspective it is important to consider a wide range of performance indicators including qualitative and proxies *(cf. social benefits).*

7.3 What are the innovative ways that social media is facilitating <u>learning</u> from development knowledge?
The lack of evidence in the literature about how social media is contributing to innovation in learning about development knowledge may have several explanations. From an experiential perspective the learning may be taking place but through acts of creation and sharing. Put another way, we may be looking for learning in the wrong place because of a bias towards evidence of traditional didactic learning (e.g. the expert teaches learner model). Another explanation could be that the kind of knowledge we are focusing on is largely practical in nature (e.g. how to rather than why to knowledge) and so not easily separated from action (e.g. there are few independent learning goals to speak of). In these terms the learning is taking place through actions following on from access to development knowledge mediated by social media rather than immediately. It is also very likely that the relative youth of social media means that evidence of its contribution to innovation in learning about development knowledge is only beginning to become available. Further consideration of the relationship between practical learning and social media is needed. There is also potential value from extending this further to include the relationship of learning to other forms of vernacular media such as

storytelling, theatre, etc. Following Berdou, our analysis of findings from the literature highlights the following implications:

- Locally produced and redistributed videos of farmer experience are demonstrating a way to help bridge the gap left by retrenched agricultural extension services. They can also be symbols for open and collaborative ways of working. From a power and ICTs perspective it remains important to repeatedly ask for whom are participatory approaches to video meaningful and beneficial and not value them uncritically *(cf. farmer advisory services).*
- Learning should not occur within one stakeholder group in isolation from others but be formed around communities / networks of peer learners in a given location. From a communities of practice perspective it is important to see that collaboration does not remain at a superficial level but is deepened and purposeful. It is also important that safe spaces are created for learning *(c. farmer advisory services / networks).*

7.4 What are the innovative ways that social media is facilitating creation of development knowledge?

In terms of creation there is real promise that social media can enable and model collaborative production of development knowledge. The purpose, form and governance of co-creation needs to be explicit to guard against superficial externally driven activities (e.g. by prior mutual agreement on who owns what is created). Creation of knowledge by locals and in local languages embeds context and relevance in the knowledge products and services they produce, especially in rural locations where farmers are more likely to learn from peers. In complex and risk prone rural locations ownership of diverse social media tools, including local media like theatre and storytelling builds resilient knowledge creation processes. Public and commercial entrepreneurs are creating knowledge and value with innovative systems and structures made possible by social media. New forms of networked creativity may not be circumscribed by traditional production / consumption relationships but they are connected to them and will in time recreate what is mainstream and normative. Following Berdou, our analysis of findings from the literature highlights the following implications:

- Farmers and other actors in agriculture can be co-creators of knowledge using digital and other social media tools (e.g. wikis, video, openspace) as well as consumers. From a mediation perspective it is important to consider that co-creation can easily reproduce and amplify the knowledge of already well connected actors. From a communicative capabilities perspective it is important to support information literacy capacity development to address uneven distributions of skills to use social media tools *(cf. farmer advisory services).*
- Access to knowledge is of little value if it is not relevant. Interactive and participatory co-creation, re-mixing and contextualisation of content by the peers of intended beneficiaries can make it much more useful and have better impact. From a communities of practice perspective creating safe spaces where trust can grow is essential for co-creation using social media (e.g. members wikis for creation and public wikis for sharing) *(cf. accessibility / Web 2.0).*
- Putting multiple digital and traditional social media tools in the hands of a local community facilitates more content creation than narrow top-down approaches (e.g. CELAC[12]). Multiple redundancy of tools may be important in complex and risk prone agricultural environments. From a communicative capabilities perspective this suggest significantly biasing enabling actions towards the marginalised *(cf. Web 2.0 / networks).*
- Mobile social media in Africa is being used by entrepreneurs to create businesses meeting the needs of customers at the bottom of the pyramid that have not been thought of in other countries or pushed as far, as quickly (e.g. mobile banking, micro-outsourcing). Outsiders' assumptions and biases need to be challenged and Africans' demands and uses of social media in different countries and localities should be taken seriously. From a power and ICTs perspective the design and deployment of mobile social media by outsiders should be reviewed to consider whether they may be inadvertently silencing creative voices from Africa *(cf. BOP social media enterprises / mobiles).*
- Social media is enabling people to create structures for pursuing collective objectives in human and economic development that don't look like traditional organisations (e.g. decentralised, short-term, dynamic, mass mobilisations of underutilised resources). From a mediation perspective it is important to consider how these social network organisations are connected to other networked publics and to traditional organisations rather than considering them to be liberated from them *(cf. Web 2.0 / networks).*

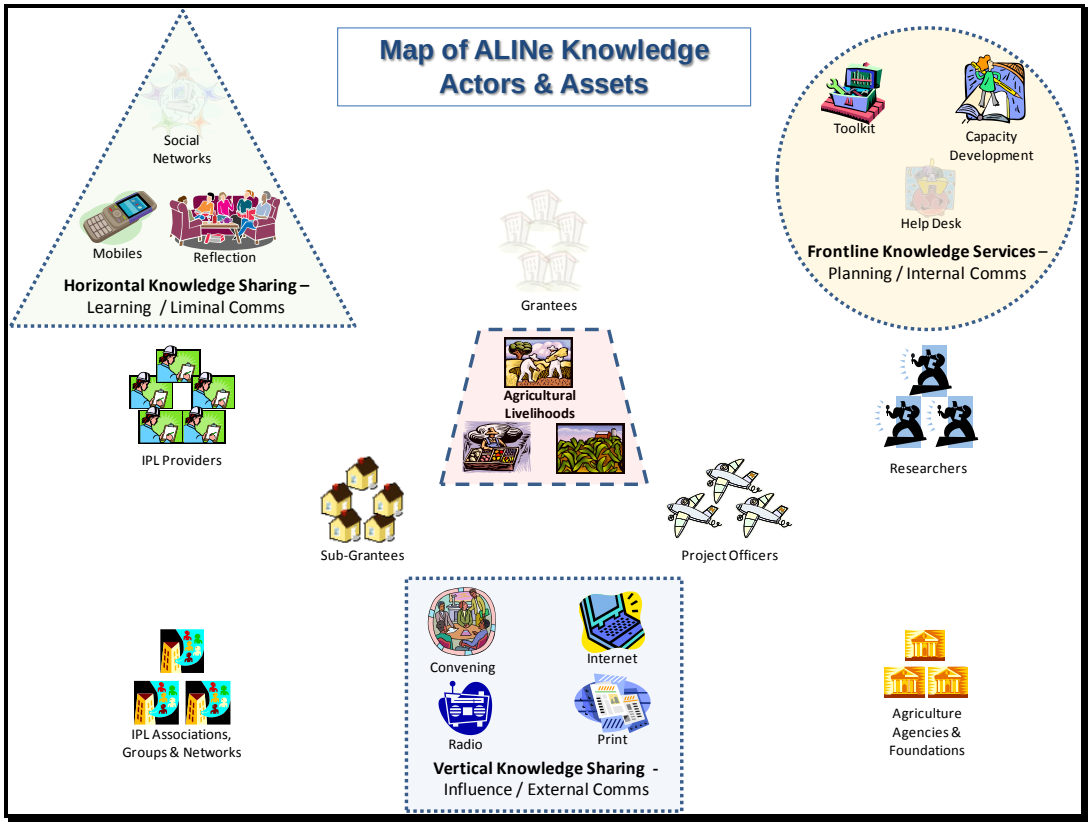
[12] Collecting and Exchange of Local Agricultural Content (www.celac.or.ug)

- The status-quo on who creates knowledge no longer holds and what comes to be seen as traditional in future is being significantly shaped by social media actors. Traditional media tools and face-to-face spaces will continue to be relevant, especially in learning processes. From a power and ICTs perspective it is important to consider where and when the new tradition coalesces, how it relates to other media tools and spaces and who is benefiting *(cf. traditional media and mediation).*
- Early Web2.0 spaces like Dgroups have demonstrated their ability, with investment in setup and user training, to facilitate international collaborative working on development projects. From a communities of practice perspective it is important to frame the purpose of collaboration and form of participation to avoid superficial or confused interaction *(cf. collaboration spaces).*
- Mixing geographic position data with existing information is enabling greater aggregation and powerful collaborations (e.g. farmers and scientists profiling soil health by open data sharing). From a power and ICTs perspective decision-making about the processes and rights from knowledge creation within these collaborations needs to be as transparent as the information flowing across them. From a communities of practice perspective the purpose of collaboration and the nature of different actors participation also needs to be clear *(cf. mapping and GPS).*

8. Relevance of Social Media to the Agricultural IPAL Knowledge Domain

Having reviewed our findings it is possible to say that there is important evidence that social media is innovatively facilitating access to, sharing and creation of development knowledge. There is less evidence of innovation in relation to it facilitating learning from development knowledge. But how relevant are these social media innovations to knowledge in the domain of agricultural impact planning, assessment and learning and what are the conclusions?

Figure 2. Map of ALINe Knowledge Actors and Assets



As ALINe is a young initiative it is not yet possible to work from a diagnosis of ALINe's knowledge assets and communicative relationships towards conclusions on the relevance of social media. Rather this exploration of social media is helping to inform the future of ALINe. It may though be helpful to consider Figure 2. above which shares a vision of ALINe (at its initial stages) as seen through a knowledge lens. This helped to conceptualise the landscape of assets and relationships that could exist. However, to answer the question of relevance to ALINe's future we have worked in a slightly abstract way to model potential knowledge assets and

communicative relationships. The next step was to unpack what the agricultural IPAL knowledge domain includes. One way of conceptualising agricultural IPAL knowledge is to break it down into three main categories of subjects:

- knowledge ***about*** agricultural IPAL (concepts, methods, values, applications, users)
- knowledge ***from*** agricultural IPAL (lessons, findings, conclusions, implications)
- knowledge ***for*** agricultural IPAL (monitoring & impact data, baseline data, theories of change, project plans, program purposes, strategic goals, beneficiary opinion, contextual assumptions, risk factors, ethical considerations, environmental assessments)

These categories and the relationships between them can be conceived of in functional and systemic terms, as suggested in Figures 3. and 4.

Figure 3. Functional Model of IPAL Knowledge Subjects

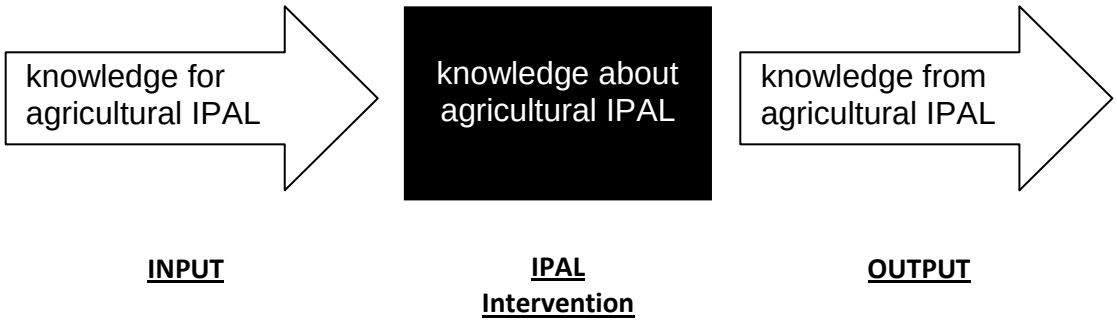
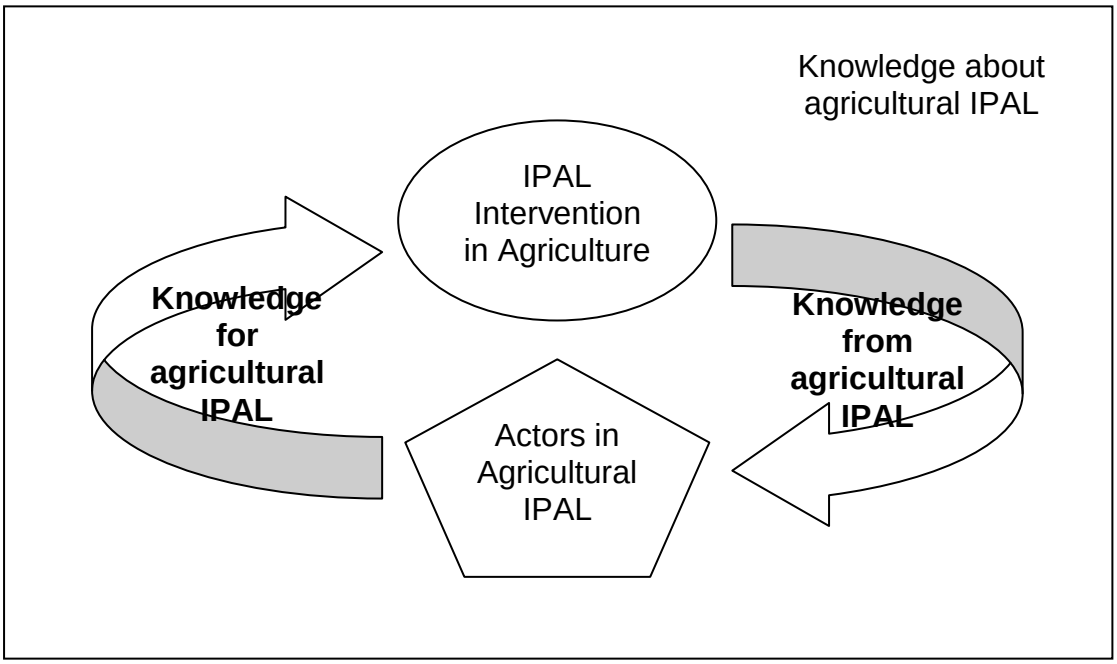


Figure 4. Systems Model of IPAL Knowledge Subjects



The functional model's linear characterisation of relationships serves to emphasise that the quality of knowledge *from* agricultural IPAL is primarily dependent on the quality of knowledge *for* agricultural IPAL (e.g. the often quoted programmers motto - 'rubbish in rubbish out') and subsequently on the quality of knowledge *about* agricultural IPAL (i.e. poor methodological understanding will undermine the uses that even good knowledge *for* agricultural IPAL can be put to). The systems model's more holistic framing of relationships reveals, not unexpectedly, what the functional tends to hide. Which is that knowledge *about* agricultural IPAL

(the domain contained by the outer box in Figure 2.) should not be abstracted from the actors, interventions and knowledges that co-construct its methods, values, appropriate uses, etc.

A further way of conceptualising agricultural IPAL knowledge is to recognise that as well as subjects it also involves a range of actors and types of contents. For our assessment of relevance to ALINe the probable primary location of each class of actor (see Table 5) and the bandwidth demand of each type of content (Table 6) is very significant. This is because of the highly geographically dispersed and highly technologically diverse contexts of ALINe's target audience.

Table 5.
Agricultural IPAL Knowledge Domain Actors

Actors	Primary Location
Any affected stakeholder	tbc
Beneficiaries	rural
Implementers	rural
Managers	urban
Leaders	urban
IPAL practitioners	rural
IPAL researchers	urban
Policymakers	urban
Funders	urban
Auditors	urban
Journalists	urban
Citizens	rural

Table 6
Agricultural IPAL Knowledge Domain Contents

Types of Content	Bandwidth Demand
Numerical data	light
Text	light
Graphs	heavy
Tables	light
Pictures	heavy
Photos	heavy
Speech	heavy
Video	heavy
Maps	heavy
Time data	light

8.1 Relevance

Combining Figures 1 and 2, Tables 5 and 6, and drawing on our synthesis of evidence in the literature, we can say that social media innovations in facilitating access, sharing and creation of development knowledge (and to a lesser extent learning about it) are likely to be relevant to the agricultural IPAL knowledge domain of subjects, actors and contents in the following ways.

Table 7. Relevance of Social Media to Agricultural IPAL Knowledge Domain

Actions	Subjects	Actors	Contents
Access	For: Low About: Modest From: Modest	Rural: High Urban: Modest	Light: High Heavy: Low
Sharing	For: Low About: Modest From: Modest	Rural: Modest Urban: Low	Light: High Heavy: Low
Creation	For: Modest About: Modest From: Low	Rural: High Urban: Low	Light: Modest Heavy: Low
Learning	For: Low About: Modest From: Low	Rural: Modest Urban: Low	Light: Modest Heavy: Low

Analysing Table 7, and taking all aspects of the domain (subjects, actors, content) into account, social media's overall relevance to the agricultural IPAL knowledge domain is modest (with a few areas of high relevance). In a significant minority of areas relevance is low[13]. Given that we are focusing on relevance of IPAL for agriculture in Africa, a sector typified by relative remoteness and relatively low levels of investment in technology this finding of modest relevance is probably more significant than it appears. The dominant

[13] Equally weighted relevance = low 43%; modest 43%; high 14%

narrative is that social media are an appropriate feature of the development pathways of industrial / post-industrial economies (e.g. India / UK). The idea that they appear at all relevant for African agriculture today would be a significant shift in mainstream thought in itself.

Looked at in terms of actions in the domain (Table 7 Column 1), relevance is greatest for access to agricultural IPAL knowledge (majority modest / high) and least for learning (majority low). What distinguishes social media's potential contribution to access from other actions is its high relevance for rural IPAL actors (i.e. beneficiaries, implementers, IPAL practitioners and citizens). Mobile phone based social media platforms (e.g. FrontlineSMS, MXit, Sembusa, Question Box) could enable social networking amongst rural IPAL actors and form a bridge between them and urban IPAL actors (for whom relevance is at least modest) across which knowledge can flow. For example, accessing a voice data bank about agricultural IPAL indicators or contact information on active IPAL practitioners. Relevance of these platforms for rural IPAL actors in the creation of IPAL knowledge is also likely to be greatest for content with light bandwidth demands (i.e. text, tables, time and numerical data). For example farm labourers forming social networks to produce monitoring data for IPAL using SMS based micro-outsourcing (e.g. using txtEagle).

In terms of subjects in the domain (Table 7 Column 2), relevance is greatest for knowledge about agricultural IPAL (modest) and least in relation to knowledge for agricultural IPAL (majority low). What distinguishes social media's contribution to facilitating knowledge about agricultural IPAL (rather than for or from it) is its potential relevance to all actions (i.e. access, sharing, creation, and learning). Limitations on heavy bandwidth content will be imposed by mobile phone based social media platforms in the short term (i.e. until 3G and / WiMax protocols are rolled out in Africa). Consequently knowledge about agricultural IPAL is favoured. This is effectively meta knowledge (e.g. concepts, methods, values, applications, users) and so can be abstracted more readily into textual light bandwidth forms than knowledge that is being formed or newly expressed. For example announcements about a regional IPAL capacity building workshop or a request for proposals sent via text message to a social network of African IPAL practitioners. In these circumstances it will be important to recognise the risks of these knowledge flows becoming top-down and one-way and promote simple feedback tools like SMS polls. When bandwidth improves the relevance of creating knowledge for agricultural IPAL would be likely to increase and exploit more fully the co-creation potential of social media.

Taking actors in the agricultural IPAL knowledge domain into account (Table 7 Column 3), relevance is greatest for IPAL actors with a primarily rural location (high / modest) and least for urban ones (majority low). In this case social media's facilitating role is most distinctly relevant in relation to access and creation of knowledge by rural IPAL actors. Mobile phone platforms in many rural locations in Africa are providing connectivity to geographically dispersed knowledge for the first time, or after the failure of early ICT4D pilots (e.g. telecentres). The benefits from access and creation of agricultural IPAL knowledge would therefore be very marked because of a zero or very low baseline despite the greater technical difficulty of providing connectivity in these locations. For example the accountability effect of announcing through a social network of project beneficiaries that the preliminary conclusions of an IPAL study are accessible for them to verify as a group could be marked. This compares to situations where beneficiaries are not kept informed once, for example data on crop yields, has been extracted through a one-off and individualised contacts with M&E practitioners. Another example would be the relevance effect for a future IPAL study from using a SMS text poll of women farmers to crowd source the relative significance of outcomes in a draft theory of change. Compared to situations where women's perspectives on the vision of change underpinning a grant may not have been heard because of the gendered structure of public space used for consultative processes, an SMS text poll could markedly change the text.

Lastly considering the content dimension of the domain (Table 7 Column 4), relevance is greatest for light bandwidth content (high / modest) and least for heavy content (low). In this final case, the distinctive relevance of social media comes in relation to facilitating access to and sharing of agricultural IPAL knowledge. We have already commented on the link between content with light bandwidth demands and facilitating access to agricultural IPAL knowledge. In terms of sharing agricultural IPAL knowledge, social networks' ability to configure multiple weak links into stronger mutual knowledge sharing relationships is marked. For example

a simple phone tree[14] set up at a workshop could be used to share news or requests for peer assists within an IPAL practitioner community of practice one voice call or SMS at a time.

8.2 Conclusions on Relevance

Given that social media's overall relevance to the agricultural IPAL knowledge domain is assessed as modest, making recommendations for ALINe to invest significantly in this area is not clear cut. ALINe need not necessarily take a risk on social media as one way of demonstrating leadership in its field. One way of bringing this decision into sharper contrast would be to weigh the relevance of social media against other approaches to facilitating IPAL knowledge access, sharing, creation and learning (e.g. traditional media – print, television and radio) through commissioning an ALINe communications strategy, for example. Our analysis shows that several other conclusions need to be taken into account, namely that:

- Social media alone will not address all actions, subjects, actors or contents of agricultural IPAL knowledge. Any recommendation for ALINe's investment in social media would need to be combined with recommendations for complimentary investments in other media or strategic partnerships outside ALINe that could address these gaps in coverage.
- The priority focus for any ALINe social media investment should be on actions that facilitated access to knowledge about agricultural IPAL and creation of knowledge for it. This should focus on actors primarily in rural locations and be based around content that places a light bandwidth demand on mobile phone platforms.
- Use of commercial and government regulated mobile telecommunications infrastructure by ALINe would need to take into account the potential negative economic and privacy consequences of these systems (e.g. in getting citizen feedback on the quality of government services), which could be informed by commissioning a technology impact and risk assessment.
- Design of social media interventions should start from the context of national and local African assumptions, preferences, needs and innovations about technologies. OECD experience should primarily be used as a comparator to reflect upon these rather than a starting point for ALINe (i.e. do not repeat the externally driven design process that reduced the relevance of early telecentre programs).
- A diversity of social media tools should be supported in each location as this may promote a more resilient knowledge facilitation system better suited to the complex and risk prone rural locations.
- Social media is likely to re-configure power relationships in the locations it is used but these will still be inequitable and exclude the poor. ALINe would therefore need to subsidise access (handsets, airtime, information literacy) and support spaces for action by at risk groups during pilots of farmer feedback systems.

9. Demands Social Media Places on Agricultural IPAL Knowledge Actors and Implications

Now that we have a feel for the relevance of social media for the agricultural IPAL knowledge domain we can turn to consideration of the demands that potential investments in it would place on actors in the IPAL knowledge domain and the implications of these demands for ALINe.

9.1 Demands

Any investment in social media by ALINe will place demands on those organisations and individuals that become active in the agricultural IPAL knowledge domain. As Berdou's background paper for this report points out, from a communicative capabilities perspective social media demands *"technical skills, social norms and values that allow individuals to manage their virtual presence and position themselves effectively within such networks"*[15]. This capability demand extends beyond the cost of acquiring that capability in the first place to include its longer term sustainability (e.g. maintenance and updating of the skill set and associated experience).

In considering demand it will also be helpful to introduce a special type of actor in addition to those already identified in Table 5. – this is the knowledge intermediary. ALINe has many of the characteristics of this kind of

[14] Phone trees use knowledge of a pyramid of related phone numbers by nodes within a group to distribute information quickly and reliably

[15] Berdou, E (2009), op.cit, Sect. 2 (b)

organisation. Knowledge intermediaries are organisations that seek to add value to a domain by mediating knowledge produced by others. Fisher and Kunaratnam's work with the IK-Mediaries network[16] suggests a working definition of knowledge intermediaries as *"actors who add value to knowledge creators' own communications by archiving, summarising and synthesising, stimulating and meeting demand, and extending access to knowledge to a wide range of different target groups at national, regional and international levels"*. Because of this specific role it is helpful to consider demands on knowledge intermediaries distinctly from other actors.

9.2 Implications

From ALINe's point of view there are internal and external dimensions to the implications of these demands. First, ALINe will need to invest in its internal capability to ensure that: ALINe staff are able to participate effectively in and model appropriate behaviour in their use of social media; and the ALINe project is able to add value for agricultural organisations to the IPAL knowledge domain as a specialised intermediary. Second, ALINe will need to make complimentary investments in supporting external capacity development in the use of social media by actors in the agricultural IPAL field who would otherwise not participate. This might be by incentivising existing capacity development programs already working with these groups to include appropriate social media capabilities within their curricula and could also be achieved by directly engaging in capacity building interventions. Direct engagement implies that ALINe also needs to invest in its own capacity development skills and experience to be able to commission / deliver these interventions.

10. Candidate Capabilities and Technologies that Respond to Social Media Demands

Given our assessment of the relevance of social media to the agricultural IPAL knowledge domain the following capabilities and technologies are suggested as candidates most likely to respond to anticipated demands:

Table 8. Candidate Social Media Capabilities for IPAL Users and IPAL Knowledge Intermediaries

	IPAL Users	IPAL Knowledge Intermediaries
Technical Skills	• collaborative production of knowledge	• facilitating networked access to knowledge
	• assessing the quality of diverse knowledges	• archiving knowledge with diverse copyright statuses
	• mobile phone messaging	• summarising and synthesising diverse styles of authorship
	• mobile phone applications	• networked and viral marketing
	• visualising tacit relationships	• managing server software
	• facilitation of groups	• social network analysis / demand assessment
		• capacity development
Social Norms	• participating actively in unfamiliar / virtual groups	• accountability for editorial policies and choices
	• maintaining a media identity	• reflexivity about own role
Values	• reciprocity	• independence
	• respect for diversity	• curiosity

Table 9. Candidate Social Media Technologies for IPAL Users and IPAL Knowledge Intermediaries

IPAL Users	IPAL Knowledge Intermediaries
Personal SIM card or airtime access number[17]	Frontline SMS mobile hub application
Mobile phone (GSM standard or higher)	Mobile social network real estate (e.g. MXit page)

[16] Fisher, C and Kunaratnum, Y (eds) (2008), Between Ourselves Workshop, Institute of Development Studies, Brighton UK

[17] The Movirtu system provides those too poor to own a SIM card or phone with a phone number they can use from any one else's mobile at no cost or risk to the owner. Movirtu launches in Africa in late 2009: www.movirtu.com

Mobile social network application (e.g. MxIt, Sembusa)	Web 2.0 text co-creation tools (e.g. Delicious, PBWorks)
Mobile micro-outsourcing application (e.g. txtEagle)	RSS production software
Digital imaging device (e.g. camera phone)	RSS to SMS gateway software
Personal diary / Journal	Voice recognition software
	Relational database software
	Server software
	Text reader software

11. Recommendations

Our study of how social media could contribute to sharing knowledge makes the provisional conclusion that its overall relevance to the agricultural IPAL knowledge domain is modest. However, given our primary user context for IPAL knowledge are rural areas with low levels of investment in ICTs, this level of relevance is more significant than it would otherwise appear. Our recommendations of how ALINe should be orientated toward social media are given in this light.

Knowledge Strategy

1. ALINe should consider social media as the main pillar of its knowledge strategy
2. The level of ALINe's investment in social media should be decided in light of its assessment of the relevance of traditional media, for example by commissioning a communications strategy
3. Whatever the level of investment in social media, complimentary investments that bridge to other media or strategic partnerships will be necessary to address actions, subjects, actors and contents that social media will not adequately address(e.g. local media, open data sharing, community radio)
4. A technology impact and risk assessment of ALINe investments in social media should be part of any investment
5. National and local African assumptions, biases, wants, needs and innovations around social media technologies should lead the design of any ALINe interventions taking the Farmer Voice pilot locations as the reference points

Focus

6. ALINe social media investments should primarily focus on facilitating access to knowledge about agricultural IPAL (methods, applications) and creation of knowledge for it (data, opinions)
7. ALINe social media investments should primarily focus on actors in rural locations, because their influence and skills are most excluded and not likely to be quickly included otherwise

Tools

8. Mobile phone should be considered the primary platform for ALINe social media (especially with software exploiting ubiquitous and cheaper SMS and USSD protocols), with GPRS, 3G, internet and other digital tools including laptops as supplements when appropriate
9. ALINe agricultural IPAL content in mobile social media must place a light bandwidth demand on technologies in the medium term (2-3 years)
10. A diversity of non-digital complimentary social media tools should be supported by ALINe interventions in rural locations to promote a resilient knowledge facilitation system (story capture, theatre, visual mapping)
11. ALINe should invest in its own technology infrastructure to be able it to be a knowledge intermediary using social media
12. ALINe will need to be an advocate for others' investments in appropriate technologies in the agricultural IPAL field

Enabling Actions

13. Participation in social media by at risk groups will require cost subsidy of airtime and handsets in the medium term (2-3 years) to off-set inequalities and capacity building to strengthen information literacy
14. ALINe will need to invest in appropriate capabilities to enable individual team members to participate in social media, for the organisation to add value as an agricultural IPAL knowledge intermediary and as a capacity development commissioner / provider in this field
15. ALINe should join with an ICT4D strategic partner to provide needed Social Media technology capacity to the core team

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Synthesis of Literature on Social Media

Thirty-four sources were selected for summary and synthesis from a long list of 160 references on social media (for the long list see http://delicious.com/Carl_wkg/aline+social). Literature was selected from two domains: social media within development, which makes up 78% of the references sighted; and social media in general, accounting for the remaining 22% of references. Within the former we have been biased towards examples that address agriculture and the African continent because of the orientation of ALINe. Within the latter we have been biased towards examples that address non-profit actors (which tends to be skewed towards OECD experience because of the larger pool of evidence there). We see the development domain as an overlapping subset of the more general social media one. Most of the literature reviewed comes from grey material rather than official journals. This partly reflects the relative youth of these domains and also the bias within the domains for open, collaborative publishing.

What follows is a synthesis by emergent categories of the summaries of the literature.

Farmer Advisory Services

- ICT services are seeking to fill the gap left by the deconstruction of Extension Officer Services from ministries of Agriculture in Africa (ref. 4, pg.9)
- Farmers and farm labourers are not mere consumers of generic agricultural information. A successful advisory service should be built on a learning community of farmers, labourers, their groups, associations and cooperatives, experts and researchers engaged in blended learning processes (ref. 4, pg. 19)
- Farmer led documentation, using social media approaches like participatory video, can be catalysts for local agricultural innovation (ref. 5, pg. 28). The upfront and recurrent costs of digital video technology can be prohibitive, but these are falling.
- Co-creation and remixing of knowledges (scientific and practice) and actors using a wiki / blog / forum / chat platform is being pursued by Agropedia in India. Agropedia is "redesigning the farmer extension agricultural research/education continuum". A model with potential beyond India. (ref. 9)
- Microsoft Research India's Digital Green project is producing a video extension service based around participatory video of farmers own lessons which are then disseminated offline in extension worker mediated village screenings. The fact of seeing locally identifiable people instead of remote experts gives Digital Green a marketing advantage over centrally produced broadcast extension services. (ref. 10)
- For farmers to invest in ICT and social media they need to become aware of its direct benefits to their livelihood strategy. Learning from peers in the local farming community about their adaptation of ICT and social media is the most promising route (ref. 17)
- Voice recognition and text reader software can enable illiterate farmers to send and receive advisory services on the mobiles. The mKrishi service under development in India is designed to allow farmers in their local language, to request agricultural expertise and receive relevant feedback. mKrishi will also allows for photographs of crops to be taken by farmers via their mobile phone; which are forwarded to the expert for examination and feedback (ref. 25)

Rural Areas

- Farmers are already growing their business through mobile access to price data: "Particularly in remote regions farmers, as well as micro-enterprises and small businesses, can gain rapid access to market data such as prices and commodity availability, which saves money and time-consuming travelling. It also makes it possible to reach markets further away, or new customers who would not be contactable without mobile phones." (ref 1. pg. 12) Rural IPAL service providers could grow their business through mobile phone access to IPAL market information in the same way.
- FrontlineSMS is well suited as a social media tool for rural areas as it is independent of the internet, relying on mobile networks and a PC to share and organise group SMS exchange (ref. 26)
- Mobile in rural areas can link local to global directly, extend the impact and enhance the local content of traditional media like radio, reduce the cost of rural services by improving logistics coordination. and reduce unnecessary travel to urban areas. Mobile infrastructure is much less expensive to install for rural areas and so is spreading faster / outmoding land lines (ref. 29, pg. 2)

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- Social media in East Africa using ICT could enable rural areas to directly network, changing the power balance of core-periphery with urban areas and bypassing centres of control and information to build their own coalitions (ref. 30, pg. 16-17)
- Citizen helpdesks enable anyone with access to a phone to call in a question in their language to be answered by an assistant via a web search and / or access to frequently asked questions wiki. In rural areas of Uganda questions about crop pests and diseases and animal husbandry are very popular (ref. 35 Question Box)

Accessibility

- Social media and other ICTs can have a positive impact on development, but the extent to which they do this for the poor is largely a function of their accessibility (cost of use and capability to use), or openness. Open ICT4D calls for policy embedded in the values of egalitarianism and sharing that create new possibilities for who can access, use, make and distribute information, knowledge and culture through relationships that are typically more horizontal and widely distributed (ref. 14, pg. 13-15)
- If ICTs and social media benefits are captured by a minority of already wealthy farmers there is a real risk that inequality will increase for the poor rural majority in India. Investment in ICT4D to include these at risk groups is important (ref. 17)
- The costs of mobile airtime can in some situations lead to conflicts played out through gender relations where household budgets are under stress (ref. 18, pg.44-55). This could lead families further into debt.
- Mobile phone use reflects gender difference in particular social locations and while it can deliver benefits to women it is not itself a solution to female poverty or gender inequality (ref. 36)
- ICT4D 2.0 still faces the challenge of infrastructure and cost of internet access if it focuses mainly on PC technology. In rural areas the opportunity may lie in jumping to technologies that have already diffused namely mobile phones, TV and radio. The challenge may then be exploiting fully the ICT4D potential of existing mobile phone, TV and radio devices and secondly seeing how to integrate the internet into them. The other challenge is to provide relevant content. Much of what is available is not useful and so interactive and participatory co-creation of content (in multiple media) has a significant role in making ICT4D 2.0 impactful (ref.27)

Bottom of the Pyramid Social Media Enterprises

- By collaborating with telecoms companies that provide m-payment it is possible to engage a social network of remote workers to accomplish micro-tasks for payment using their spare time and mobile phones. TxtEagle enables voice and SMS based micro-tasks such as translation (English to local languages) or survey completion (blood bank levels) to be paid for. Its assumes that very poor people with mobile phones are time rich and enterprising and can get a slice of the multi-billion dollar global outsourcing industry. (ref. 22). The close collaboration with telecoms companies has been challenged as being unethical.
- We should also stop designing programs to meet what externals think of as communities' needs and start responding seriously to communities' wants and uses – as producers and innovators in their own right. To be empowering in this way ICT4D 2.0 policy and practice should meet three challenges: giving the poor the tools to produce digital content and services; offering them incentives that create new income and jobs through ICT; and convincing established interests to recognise the scale and value of the ICT-based innovation that the poor produce (ref.27)

Mobile Phones

- "low per capita income does not necessarily equate to a low distribution of mobile phones, as was previously assumed. In Asia, Africa and Latin America there are many countries with incomes of less than 1,000 US dollars per head where mobile phone ownership is as high as 70 percent (Africa)" (ref. 1 pg.11)
- Old age and illiteracy are not barriers to gaining the basic benefits of mobile phones (saving in time and travel costs or negotiating sales and purchases), though literacy is important for some of other benefits to be gained (e.g. receiving or sending text messages). Women farmers in Lesotho used mobiles to diversify livelihoods and plan travel. As a result the Lesotho government is now looking to use m-payment for distribution of the Old Age Grant (ref. 16)

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- Different ICT approaches to farmer advisory services have advantages and disadvantages but most importantly, they are difficult for farmers to exploit because of limited access to electricity and the internet in rural areas. As a result, projects built on the use of mobiles, especially through a voice solution, can be very useful (ref. 4, pg. 9).
- Mobiles used can add an extra dimension to existing media like radio through having users SMS in comments or through offering SMS updates from the station. However the accessibility of mobiles and radio receivers (airtime and battery cost) is particularly challenging for poor people in rural areas (ref. 15)
- FrontlineSMS is software that turns a laptop and a mobile phone into a central communications hub'. It enables an offline PC connected to a mobile to send text messages to large groups of people and then receive and process their replies, thus creating potential for a social media network. FrontlineSMS is open source and has been used for various purposes: information dissemination to rural communities, recruiting people for health and business training seminars, assisting with communications for women's groups and carrying out farming surveys to name a few. Any mobile on any network can receive and reply to FrontlineSMS, but some models are not able to work as the hub phone. FrontlineSMS was originally designed for humanitarian NGOs. It has been used in a mash-up with GPS by Ushahidi to create a social media crisis mapping tool (ref. 26)
- Mobiles in particular offer the promise of providing services to the poor using existing capabilities like SMS and Voice (e.g. financial services, health advice). Not enough is being done yet to exploit the potential of ICT4D 2.0 in the area of employment, enterprise and production. Using mobiles the poor can transact business, create digital products and services and network to get employed (ref. 27)
- In South Africa the mobile based social networking tool MXit has been used by drug rehabilitation programs to connect youth with mentors. The MXit application has been downloaded to their phones by millions of South African youth and allows them to send 1000 character instant messages within a friend network over the USSD data protocol. The Angel 24/7 initiative enables mentors to share advice on substance abuse, aid, depression etc. Or young people can explore text on these topics loaded on the Angel 24/7 profile on MXit (ref. 28)
- Mobile phones limitations in rural and resource poor environments include: high costs of air time and latest phones, poor network coverage / quality in some areas, capability barrier to gaining benefits of more complex mobile features (images, GPS), and the lack of available non-Roman scripts (ref. 29, pg. 3)
- Current limitations of mobiles are likely to be overcome in the next five years. Re-charging will be met by solar panels, literacy will be mediated by voice and usability enhancements and connectivity will improve because mobile ownership grow strongly reaching OECD levels in East Africa (ref. 30, pg. 15)
- Mobiles will be key to the spread of social media tools, especially in the South. The fact of connectivity at all is more important than speed in many of these locations (any bits per second rather than none).
- A survey of 560 NGO workers in January 2008 found that NGOs in Africa use mobiles more heavily than their Northern counterparts (86%). The impact of mobiles on NGO is overwhelmingly seen as positive (99%). The key benefits were time saving (95%), better coordination (91%), extending reach (74%), sharing date easily (67%) and gathering data easily (59%) (ref. 33, pg. 6-7)
- The evidence base for the development impact of mobile phone use by NGOs is only just being put together, but the pilot projects suggest enormous potential (ref. 33, pg. 9)
- Identifying win-win opportunities between NGOs and commercial mobile networks will be essential to scale up and sustain currently heavily subsidised pilot projects (re.33, pg. 10)
- Text messages in Arabic script are typically limited to 70 characters and so less information can be shared in each SMS (ref. 33. pg.32)

Web 2.0

- The flexibility to create, mix and redistribute content offered by Web 2.0 tools is potentially very important because it facilitates contextualisation and adaptation of knowledge by rural people to their needs and circumstances (ref. 5, pg 14-15, 22-23)
- Web 2.0 can be particularly demanding on internet bandwidth (applications are server based, multimedia content needs to be uploaded) and so can limit their applicability at present in many rural areas (ref. 5, pg. 25)

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- BROSDI provides people in Wainha village in rural Uganda with the space to create and share information using Blogs, Websites, Wikis, Computer, Radio, Audio, RSS, Email, SMS, Telephone, Google maps, Flick, Skype, Podcasting, Online File Sharing to reach out to farmers and the community at large and to stimulate knowledge and information sharing amongst and between farmers and scientists. Its ambition and location within the local community seem to be overcoming a number of constraints seen with many top down and externally driven ICT4D projects (ref. 8). The Collecting and Exchange of Local Agricultural Content (CELAC) project is the key BROSDI agricultural service and uses a wide portfolio of media to enable knowledge sharing. Perhaps the multiple redundancy is important in a complex and risk prone media environment (ref. 10)
- Akvo use Web 2.0 and mobiles to co-construct, disseminate information and share experience and success stories about water and sanitation projects. Akvo uses these technologies to facilitate their marketing and fundraising activities; through text messages and videos, they disseminate reports and other information in order to 'unleash a new generation of storylines that the best campaigners can use to secure reliable funds from donors large and small' (ref. 21). Akvo's social media power to connect community scale projects with external funders reproduces, and perhaps amplifies, the risk of disconnecting local governments and public services from delivery and ownership. This could present a sustainability issue if future funding flows do not meet recurrent costs.
- Widespread access to Web 2.0 tools is changing how groups / networks are formed and how work is accomplished. "Wikis and other social media are engendering new, networked ways of behaving […] characterised by principles of openness, transparency, decentralised decision-making, and distributed action". (ref. 32, pg.1)
- Fundamental conditions about the networked world are: quick, easy and low cost decentralised ways for people to self organise a (e.g. SMS flash mobs) – once people have got beyond the initial step learning curve of using social media for the first time; accelerated formation and spread of idea based groups (e.g. pressure groups built by sharing links to press articles via blogs); easy and low cost ways to coordinate groups (e.g. creating a group on Facebook); public openness is the default for sharing and this increases transparency of networks and groups (e.g. Flickr); increased access to and sharing of expertise (e.g. Wikipedia); ability to mobilise is a better indicator of organisational effectiveness than longevity (e.g. temporary networks enabled by MoveOn.org; networks become a viable alternative to creating an organisation to get something done (ref. 32, pg. 3-5)
- Web 2.0 tools are being used by foundations and other change agents to better understand networks of relationships (e.g. social network analysis); to distribute tasks widely (e.g. crowdsourcing analysis of texts and data); decentralising decision making (e.g. brining grant making decisions into communities); co-creating and sharing knowledge (e.g. open source collaboration spaces; wikis and blogs); dynamically re-using underutilised resources in a network (e.g. reallocating spare capacity in a school transport system) (ref. 32, pg. 5-8)
- social media enabled networks are fundamentally like other human networks. They are built on the time and space made available to form authentic working friendships. They have to be rewarding and fun, as Beth Noveck notes "it's about harvesting the enthusiasm of the crowd, not just its wisdom". (ref. 32, pg. 9)

Collaboration Spaces

- Compared to physical international conferences, the lower cost of participation, flatter structure, larger number of participants, and text based medium of online collaboration spaces can help to bring in new voices, bridge between and across organisations and deepen participation (ref. 2 pg. 3)
- The vision of Mashup Library 2.0 aims to reintegrate digital media back into the human space of the library as a place for library visitors and librarians to explore, co-create, share and serendipitously stumble upon knowledge. Conceived of for Denmark's libraries, how could this notion of face to face collaboration spaces work in other contexts like rural Africa or a major foundation? (ref. 3 pg. 3-6)
- provided there is a modest investment in group set up and minimum level of training for the facilitator / administrator, online discussion platforms like Dgroups can provide a solid basis for interactive projects operating on a global level (ref. 34. pg. 64)

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Mapping and GPS

- Co-creation of a soil health and advisory service map for farmers in Africa has the potential to improve and sustain yields through application of more appropriate land management regimes. To achieve this opportunity the Africa Soil Information Service will use GPS, Google maps and the internet to collate and communicate information on Africa's soils. Scientists, extension workers and farmers will work collaboratively on the service (ref. 7).
- AgCommons will offer a location specific combined search of data from leading agricultural multilateral datasets. The aim is to increase access and application of this data by farmers and co-creation of content by farmers. AgCommons is primarily web based by is also intending to provide mobile access (ref. 12).

Networks

- Network centric models of development as a change process mediated by numerous small linkages is a powerful metaphor for our global-local times. ICTs and in particular social media are powerful catalysts to seed, sustain and grow links and networks. Creativity and innovation in the use of social media have a potential large part to play in human and economic development. For example the combination of geographical information with social information to produce geo-social networks that help actors in those networks to co-create and use knowledge assets. (Ref. 13, pg.37-8)
- Farmers tend to learn from trusted peers in the local community. Social media have the potential to seed, sustain and grow these peer networks. Farmer peer networks can enhance agricultural livelihoods as they can improve communication, increases participation, and facilitate the dissemination of information and knowledge (ref.17).
- Establishing social networks can be of great help to rural farmers as it improves knowledge creation and sharing amongst local actors (rural producers, governmental organisations, nongovernmental organisations, local communication media, grassroots groups and educational institutions). CIAT work in Columbia suggests that traditional as well as new media are necessary to the establishment of social networks. This entails the exploitation of medium such as the internet, radio, television, murals, posters, etc. This combination enables diversity and facilitates knowledge creation and sharing by a large number of people: those who can have access to traditional media as well as those who can have access to and use new media. (ref.23, pg 22-26).
- At national and international level networks enabled by social media can empower those who have lost many other assets. Refugees United has set up a search engine through which information can be accessed and which enable refugees and relatives to register their details securely and trace the whereabouts of their loved and lost one's who may also be registered on the Refugees United network (ref. 20).
- Challenges for social media enabled networks include: demonstrating effectiveness (new monitoring methods including prototyping and rapid cycle feedback); mixing the right levels of decentralised creative freedom with central control (e.g. Wikipedia senior editors); moving beyond identification by members in a group to action in the world by their group; and when and how to alter the blend of mass collective amateur wisdom and expert opinion (ref. 32, pg. 10-11).

Social Benefits

- ICTs are often presented primarily in terms of their direct economic benefits. But this can overlook social and related indirect economic benefits. For example mobiles that enable families separated by distance to remain in mutually supportive relationships (ref, 19 , pg 193-206).

Patterns of Social Media Growth

- Looking at the period from March 2008 to March 2009 it can be seen that the most popular social medium in the USA at the moment is YouTube with more than 100 million monthly viewers. Facebook on its part has had an impressive growth (particularly in Europe), '100 million to 200 million users in less than 8 months'. MySpace has lost popularity in comparison to Facebook. 'Facebook now has a total of 65.7 million unique visitors versus MySpace's 54.1 million'. Social networking is becoming more popular than email. According to an online study by Nielsen, '66.8% of Internet users have used social networks, while only 65.1% have used email'. Twitter's yearly growth rate was 1,382 percent. Twitter currently has 7 million unique monthly visitors. (ref. 23) Knowing in different locations which social media platforms are most used is important for investments, particularly in Africa where global

patterns skewed by OECD use are less relevant (e.g. the continuing dominance of My Space in Cameron, or the general preference for Okurt over Face Book in many countries in the South).

- A survey of US non-profit organisations published in April 2009 found that "commercial social networks, especially Facebook, are popular, but average community sizes remain small [average 5,000 members], and presence is relatively short [joined Facebook 2 years ago, Twitter 1 year ago]. Responding nonprofits are allocating small but real resources, staff and budget to their social networks. Survey respondents prefer traditional marketing channels to promote their social networks but are experimenting with new social media channels. For now, there is very little real revenue generated on these communities via fundraising and advertising. A minority of non-profit survey respondents, about one third, have built and manage their own independent social networks, using software from a wide variety of social network software vendors, with no clear leader among these vendors [Ning highest at 18%, Open Social most popular ID protocol]. The members of independent social networks are as yet, with just a few exceptions, still relatively small as well [average 10,000 members or less]" (Ref. 31, pg. 2-5).

Traditional Media and Mediation

- Social media presents a fundamental challenge to traditional media including print and television and the content they carry, especially news and advertising. Print and television media that aim to survive are radically transforming what they do and how they do it (ref. 6, pg. 13-17). Digital tools have transformed production and distribution of media.
- Social media, by enabling users to generate and co-create content, have a potential to empower users whereas traditional media largely informed them (ref. 6, pg. viii).

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Annex B

AfricaGathering – London 25 April 2009

Notes by Carl Jackson (IDS)

21 May 2009

Introduction
AfricaGathering is a series of workshops being run by Geekyoto and Ed Scotcher in Europe and Africa that is providing a space to network and discuss ICTs, social networking and technology in Africa (www.africagathering.org.uk). Twelve discussions covered topics including NGO and civil society networking by SMS, phoneless access for the bottom billion, crowdsourced maps, voice activated mobile web search, mobiles for veterinary extension services, social networking CSR campaigns and the speed and diversity of mobile phone applications in Africa.

Carl Jackson (IDS) attended to gather evidence on the use, impact and challenges of social media from this diverse practitioner audience.

Headlines

FrontlineSMS (Ken Banks)

- an open source stand alone application that enables a basic phone connected to a basic computer to become an SMS enabled two-way communication hub
- originally aimed at humanitarian NGOs with no internet access, users have adapted it for wide range of applications (doctors making their surgeries more accessible, collecting agricultural research data, monitoring elections, mapping conflict)
- FrontlineSMS works where "The Cloud" of internet based web 2 applications doesn't (most of the rural developing world)
- works by scaling horizontally (like Twitter) rather than centralising vertically
- its is not tied to any telecoms provider or phone
- can be used to forward communications into the web via email and twitter, and has been integrated with GPS online maps (Ushahidi)
- plans for upgrade to include Multimedia Messages (MMS) to allow sharing photos, audio, video too, a USB no phone GSM stick version, a phone only no computer version
- http://www.frontlinesms.com
- **Takeaway for ALINe:** this application could be the most robust ICT for social networked knowledge sharing in Africa currently available as it is simple, uses the strength of existing ubiquitous mobile phone ownership / access, can be hooked into other systems (radio, internet, diagnostics)

Movirtu (Nigel Waler)

- a system to provide those too poor to own a phone with a phone number they can use from a friend's or any one else's mobile at no cost or risk to the owner. This group is already spending 5-20% of their income on phone services
- gets around the high distribution cost of SIMs faced by telecos trying to reach the very poor by simply distributing phone numbers on paper scratch cards that have prepaid airtime
- Movirtu is tied to telcos that invest in integrating the Movirtu servers into their network infrastructure. It runs on the USSD protocol.
- Movirtu has been used by an AIDs programme to provide phone based services to patients and families without their own phone by giving out pre-paid phone number scratch cards
- Launching in Africa in the third quarter of 2009
- http://www.movirtu.com/
- **Takeaway for ALINe:** provides a very innovative way for reaching the Bottom of the Pyramid with access to mobile phone airtime that could be used for constituency feedback.

Potentially a good way to extend the reach of Frontline SMS through a tie in with a particular telco offering Movirtu services

Google Africa (Sian Townsend)

- Sian has been using her 20% innovation time at Google London to work on user experience research for the Google Africa team. User experience research looks at moving strategic innovations, to tactical optimisation by looking at the look, feel and usability (desirability) of new services
- in Uganda Google Africa is looking at village phone operators as content producers, voice activated internet search
- they are using FrontlineSMS to conduct user experience research. Asked "If you could get an answer what question would you ask". Got a wide range of questions that were then answered by the team using content from the internet sent by SMS back to questioners
- Google Africa has developed 38 African language search interfaces, is launching Google SMS in Kenya, Ghana and Nigeria, and encouraging Google users to improve Google maps of Africa.
- Google's investment in the O3B low orbiting satellite network aims to provide universal broadband access to Africa
- http://google-africa.blogspot.com/
- **Takeaway for ALINe:** Google's focus on the mobile phone as the device to develop their African services around is a very good signal of that platform's strength compared to the internet. Google's use of FrontlineSMS reinforces the impression that this is a leading technology. Google's approach of going directly to the field and putting tools in the hands of local researchers and potential services users / developers mirrors their network organisation approach

Colalife (Simon Berry)

- it began with a blog comment on Coca Cola's MDG pledge to expand it Africa Distributor Network that they consider reserving one bottle space per crate for Oral Rehydration Therapy doses
- Simon then used Facebook to mobilse support for the idea, when his group outgrew Facebook's friends limit he started also using a blog (Wordpress), Twitter, Flickr, Google Groups and hock ups with radio to grow the Colalife idea
- Coca Cola have now publicly committed to support the idea and working with Colalife
- http://www.colalife.org/
- **Takeaway for ALINe:** in the global north it can be very effective to use a cluster of freely available and public social media platforms to influence the policy of large organisations. The ease with which loosely connected people can join and co-create the movement for change is probably a key attribute of social media enabled influencing strategy. The way that Colalife has snowballed its use of different social media platforms suggests that no one or two interventions are neither sufficient nor permanent.

Other highlights

- Barcamps in Africa are a great window on innovation on the continent
- Too many ICT interventions are outside in when they should be inside out (Africa to the world)
- WiMax could be very significant for access in Africa but established telcos are resisting it as it is a threat to their sunk investments
- Ushahidi crowdsource GPS Mapping plus SMS is open source and the team are happy for it to be repurposed for different needs: http://www.ushahidi.com/

Annex C

Synthesis of Responses to Gap Filling Interviews with Key Informants

In November 2009 we asked a range of experts in social media, ICTs and mobiles for development seven questions prompted by or unanswered during the literature survey. What follows is a synthesis of answers from the five respondents. This additional evidence has been incorporated into the literature review synthesis in the main body of the report

The 7 Questions

1. Will PCs ever recover from the dominance of mobiles as the popular platform for digital communication and creation in Africa?

Mobiles are currently dominant but have not entirely replaced personal computers (in the same way that PC's in Europe or North America with Skype phone capabilities have not replaced mobiles). Mobile phone dominance in Africa will decrease, especially for content creation applications, in 2011 as broadband connections become much more common due to infrastructure improvements led by telecoms service providers. However, focusing on any one device may be the wrong question as increasingly functionality is common to all devices and the real driver of ownership is use (communication or creation), energy consumption and cost. It is possible that mobile and PC use in all regions will converge around mobile internet enabled devices in 5-7 years with people who can afford them owning more than one device.

2. For how long will access to the web for professionals in Africa be significantly constrained by connectivity and cost?

Although submarine data cables are now landing in Africa there seems to be cooling expectations that this will quickly translate into accessible, reliable and affordable broadband internet services. The average time professionals in urban centres of Africa are expected to have to wait to unconstrained internet service provision is 3 years. In peri-urban and rural areas the wait is expected to be significantly longer. There is still some faith that WiMax and 3G mobile services will short-circuit this lag, but it is not a well grounded opinion.

3. Would a subsidised access for low income groups significantly remove barriers to participation in mobile media or is change in the wider regulatory and commercial environment necessary before equal access can be enjoyed by excluded groups?

The cost in terms of airtime is a barrier to access which subsidy has an impact upon, but it is not usually the only or main barrier. The cost of the device (mobile phone) is a greater barrier for the very poor, and a lack of information literacy to be able to take advantage of access gained is a further barrier. There is little confidence that subsidy of any kind is sustainable outside of essential public services like health and that elsewhere users will have to pay as best as they can (e.g. Nokia Life Tools and Google SMS Trader)

4. What more do we know about how gender effects the costs and benefits of mobiles?

Gender authority structures and relations interact with the costs and benefits of mobile phone use but are generally not seen as direct driver of inequalities, rather as an overlay or mediator of them for good and bad.

5. Do attitudes to knowledge differently affect social networking and collaboration in Africa?

Attitudes to knowledge do affect networking and collaboration, but can't be read at the continental scale and perhaps any attempt to categorise these difference by geography alone is probably too reductive because many other factors (age, gender, education, income, family situation) interact as well as and perhaps more powerfully than national / ethnic identity.

Annex C

6. What risks and downsides do you see in the use of social media in Africa?

Social media can have risks for people who are already vulnerable because they lack rights or protection because of their age, gender, social status etc. This can be both in terms of people using social media as a channel to advocate for behaviours that put people at risk of harm or it can be because the state monitors social media as a way of identifying people whose behaviour it wishes to punish. On the reverse side the state itself can perceive risks in social media because of its potential to mobilise citizens politically and therefore seek to restrict access to it.

7. If social media is the most relevant toolset for collaboration and learning, what others will remain relevant and complimentary?

Many other toolsets, mindsets and spaces for collaboration and learning will remain relevant and probably more relevant than social media. Face to face interaction underpins most good collaboration, even if it then migrates into other mediated spaces and tools. For a significant proportion of people learning is not a social activity at all. When social media is relevant it is as a digital expression of our human tendency to make lateral connections.