Sustainable development and African local government:

can electronic training help build capacities?

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Abstract

A recent study carried out by European and African organizations into the potential for electronic distance training (EDT) on sustainability in African local governments concluded that EDT was both 'useful and feasible'. This article reflects on some of the theoretical and practical implications of that study. It focuses on the connection between learning and sustainability and how EDT programmes might be designed and promoted. The paper argues that, while resource issues and poor access to Information and Communication Technologies (ICTs) create considerable constraints and point to the need for policies to improve access, in general the most important factors for successful capacity building relate to the design of learning programmes that take account of the work contexts and skill and capability requirements of those targeted as learners. 'Useful' and 'feasible' depend on (i) how work-based and work-related learning processes are understood and (ii) the conditions to promote learning within African local government.

1. Introduction

Local government has been identified as a focus for action on a sustainable urban environment or delivery on the 'brown agenda' by the two World Summits on Sustainable Development of 1992 and 2002 in Rio de Janeiro and Johannesburg. In the case of African local government, such action has been located within the framework of the New Partnership for Africa's Development (NEPAD) (Anton and Stamm, 2004). In more general terms, the current decentralization agenda in many African countries has placed new demands on local government in terms of managing resources and seeking collaboration from private and non-profit sectors. Such demands require new capacities and capabilities. In addition to resource issues, there is a need for access to knowledge and the potential to innovate in order to meet the challenges of low cost, environmentally friendly and economically sustainable services. Managing inter-organizational relationships to mobilize inputs from other

organizations requires particular management skills. The need is thus for greater human capacities and capabilities, as well as increased local government revenue.

This article focuses on the development of human capacities and capabilities for sustainable development in African local government and the extent to which training at a distance using electronic means can help African local government meet the demands being placed on it. The suggestion is that, given limited resources and limited possibilities for face to face education and training, electronic, on-the-job, distance training can enable a large number of local government officers and employees to reflect on policies and enhance or change practices through interactive learning. This argument is based on the mass potential of part-time distance education and training, during which learners do not have to leave their homes and livelihoods (and employers do not have to lose experienced members of their workforce for further education). The learning process is generally flexible and can be undertaken in the learner's own time. Although not characterising all distance learning approaches, experience has also shown that interactive and reflective practitioner learning is possible and effective at a distance (for example, Atkins et al; Johnson and Thomas, 2003, 2004; Perraton, 2004).

The attractions of *electronic* distance education or training are that access is (in principle) easier than in conventional distance learning based on correspondence, and that learning materials and processes can be designed in potentially more interactive and effective ways. However the conceptual and practical arena in the context of promoting and supporting sustainability in African local government is complex. First, what constitutes sustainability and the role of knowledge and learning in promoting sustainability is a contested arena. Second, there is debate about the nature and value of training, and the potential for work-based and work-related learning as a means of developing organizational as well as individual capacities and capabilities. Third, there is scepticism about the role of distance as opposed to face to face training in fields that are policy and practice

based. Finally, the role of Information and Communication Technologies (ICTs) in distance education and training is also a much debated area, particularly in terms of access, cost and effectiveness.

This article takes as its starting point a study carried out by a European and African consortium into the potential for electronic distance training (EDT) for sustainability in African local government (the EDITOSIA[i] project). The authors were members of the team and the outcomes of the study are summarised in Anton and Stamm, 2004. The study concluded that using EDT in promoting and supporting sustainability was both 'useful and feasible'. The empirical value of this study does however lead to further questions about the conditions needed for EDT to be both useful and feasible, particularly in relation to the conceptual and practical arena outlined above. This article argues that for EDT to be 'useful' and 'feasible' depends on (i) how work-based and work-related learning processes are understood and (ii) conditions to promote social learning and innovations within African local government.

The following section briefly examines the concept of sustainability and the role of knowledge and learning in sustainability in the context of local government, and particularly the context in which officers in African local government often find themselves. Section 3 outlines some of the conceptual parameters and empirical results of the EDITOSIA study, while Section 4 looks more closely at the issues involved work-related and work-based learning. In Section 5 we analyse the contradictions related to the development of ICTs and their potential in supporting knowledge and learning for sustainability in African local government. In our final reflections, we suggest a framework for policy development.

2. Learning, knowledge and sustainability in the context of local government

Sustainability can have many meanings in the context of local government. For example, research on the governance of sustainable development in Wales (Williams and Thomas, 2004) showed that local government officers responsible for working on sustainability understood the concept in different ways. For some it referred to particular policy areas or sectors such as natural environment, energy, waste or biodiversity. Others saw it as involving policy integration, combining social, economic and environmental factors in ensuring evidence-based and outcome-focused assessment of policies in all areas. Closely related to this understanding were concepts such as empowerment and partnership. Yet others had an even broader view in terms of overarching principles such as environmental carrying capacity, local-global links, intergenerational equity and avoiding irreversibility.

From these diverse views, it can be argued that sustainability is best understood as a contested framework which facilitates debate on the process and content of development particularly with a longer-term perspective. Such an understanding of sustainability implies that individuals and organisations need to be able to engage with new ideas and practices. Sustainability is thus dependent on learning and new knowledge, which, in turn, need to be embedded in organizations as well as individuals to bring about change. In other words, sustainability relies on an ongoing process of organisational learning and innovation (Johnson and Wilson, 1999 and forthcoming; Johnson and Thomas, 2004).

Within the EDITOSIA project, on which this article is based, it was suggested that learning and capacity-building for sustainability in African local government should have the goals of:

- Managing local resources efficiently and in a way to improve environmental quality
- Developing viable local economies
- Safeguarding the community's welfare by responding adequately to citizens' needs (Ngenda et al., 2004, p.32).

Although such goals will have learning and capacity-building needs that depend on context, different contexts will also have common pressures, for example, delivering sustainable services, managing decentralization, and working with private and non-profit sectors. These features are usually associated with ideas of New Public Management and good governance (Minogue et al., 1998), about which there has been considerable debate, including attempts to reframe relations between the public, private and non-profit sectors in socially inclusive ways (ibid.). The argument that socially inclusive processes are more likely to lead to greater sustainability as well as effectiveness in local service provision is also an ongoing debate. For example, the World Bank has developed its own framework for service provision which involves the state, citizens and providers and four different kinds of accountability: voice between politicians and citizens, compacts between the state and providers, management between providing organizations and frontline workers, and client power between providers and citizens (World Bank, 2004, pp.49-51).

The considerable nature of the demands place on local government should not be underestimated, particularly in the aftermath of civil service reform that has taken place in most countries alongside decentralisation and devolution. Local government officers are asked to do more and do better - by both central government and by local constituents - often in conditions of fiscal deficit. On one hand, there are broadly (if not unqualified) positive experiences of change, such as decentralisation in Uganda, where, however, there are real challenges to the capacity of local government to deliver, while stakeholders compete for local government inputs into health, education, clean water, waste management and sanitation (Onyach-Olaa, 2003). Linking public sector reform and decentralisation to the need for capacity-building and gaining experience in new ways of being and acting are common themes (Conyers, 2003; Mitchison, 2003; Devas and Grant, 2003). The mechanisms of achieving increased capacities and capabilities in the context of huge pressures on officers who may be demoralised by the impact of reforms and/or absence of resources, has also been a source of debate. For example, McCourt and Sola (1999) looked critically at training as a means for

promoting civil service reform and concluded that training that is not located in - often complex and contradictory - organisational and institutional realities is bound to lead to an implementation gap.

The demands on knowledge, skills and practice are thus considerable, particularly in the resource-scarce context of most African local authorities. African local government generally has a poor revenue base, local business may be struggling in difficult economic conditions and the non-profit sector may be dependent on donor income for its survival. It is not necessarily possible to send local government officers on training schemes or on placements to local authorities that may provide models of innovation. On the other hand, local government officers embody knowledge, experience and practices that can be shared as well as challenged through learning and new knowledge. The combination of limited resources and a process of drawing and building on existing expertise suggest that work-based or related learning that takes organisational and institutional contexts into account may be the basis for developing capacities and capabilities. A key question is how such an approach might best take place and what role there is for ICTs. We turn first to the context of education and training using ICTs in Africa, and then to some of the challenges of workplace[ii] learning.

3. The potential for EDT for sustainability in African local government[iii]

The EDITOSIA project was based on four areas of practical concern. First was the digital divide as it affected Africa. In 2003, when the study was carried out, the continent comprised 1% of internet users (Anton and Stamm, 2004, p.19). Digital access was concentrated in capital cities and other main urban centres, and in southern Africa (particularly South Africa). On the positive side, the World Summit on Information Society at the end of 2003 resulted in a plan of action to favour ICT development through national governments, one of the target sectors for connectivity and capacity-building being local government (ibid., p.21). The second concern was the demands of

decentralization, associated with democratization and good governance agendas. Such processes make substantial demands on administrative capacities and capabilities, potentially a strong driver for the use of EDT (ibid., p.24). A third concern was the demands of building capacity for sustainability, as outlined above. The fourth and final concern of the EDITOSIA consortium was life-long learning and the creation of knowledge societies. Knowledge - its creation, access and use - has become a prime focus of development (King and McGrath, 2004). Within Africa, it has been suggested that knowledge-based development, lifelong learning and professional development may be able to be realised, at least in part, through open and distance learning (Anton and Stamm, 2004, p.27).

Over a period of two years, the EDITOSIA consortium carried out a number of studies across a range of countries in Africa and Europe, gathering primary and secondary data, to evaluate the acceptability and feasibility of using EDT for promoting sustainability in African local government. The project also drew on feedback and advice from groups of 'experts' in Europe and Africa (people in local government, educators and trainers, and officials from municipal associations). In terms of training needs, few assessments of training needs had been carried out and there was a large gap in training provision. Despite a preference for face to face training, budgetary constraints are considerable. National training strategies (for example, environment awareness programmes with local government in South Africa and Namibia) have also increased demand for capacity-building (Ngenda et al., 2004).

The use of EDT is relatively limited in most African countries. To some extent, this is because there is limited ICT infrastructure, although the situation is changing all the time. The EDITOSIA study found that the use of ICTs was limited by the small number of telephone lines (then, 1 per 100 people in Africa as a whole), the distribution of lines (mainly in capital cities and mainly in South Africa), the cost of connectivity and bandwidth. Although there is increasing availability of

computers at district levels in local government, usage is often restricted to particular projects or people, while computer maintenance is often problematic. Taking these considerations into account, training using other ICTs such as audio-cassettes, radio and CD-ROMs seems initially more feasible than using the internet (Barnard and Vonk, 2004).

To investigate further the potential for EDT, the project carried out a survey of electronic distance education and training in sub-Saharan Africa (Thomas et al, 2004). Conceptually, distance education programmes were understood in terms of three contrasting models. The first, *'extension'*, model allows the educator to reach out beyond the classroom. The second model, *'supported open learning'*, has as its starting point the individual student, who is sent packages of self-study materials and is supported through communication with a local tutor. Finally, the *'eTraining'* model derives from the internal programmes often used by organizations to train staff in new techniques or to support organizational changes, usually using interactive CD-ROMs or web-based technologies. EDT could, of course, combine elements of all three models.

Distance education has a long history in several African countries. Some programmes are over fifty years old. The older, established distance education providers include the University of South Africa (UNISA), Africa's only 'mega' distance institution, and a number of specialised distance education centres in other national universities. Several new initiatives have emerged since the mid 1990s. Some are run at a global level but are relevant to local sustainability in Africa. These include masters programmes on the 'supported open learning' model from UK institutions such as The Open University, the International Extension College (IEC) and the University of London External Programme. There are similar initiatives from universities in USA and Australia, while the Indira Gandhi National University (IGNOU), which is based on the supported open learning model, is providing content for a Pan-African tele-education network which aims to reach 53 countries of the African Union[iv], as well as having bilateral agreements in distance education provision in many

African countries. Other major examples are the Local Development Programme (DelNet) of the International Training Centre of the ILO and the Commonwealth Youth Programme Diploma and Degree Schemes.

One very large initiative on the 'extension' model is the Global Development Learning Network (GDLN), financed by the World Bank with investment mainly in technological infrastructure, especially 'Global Development Learning Centres' (GDLCs) and networking facilities which are then available to other institutions. Part of the aim of the GDLN is to encourage local 'content providers' to design and promote distance learning packages without having to invest in technology. Among many subjects, some such as sustainable urban development, municipal governance, macro-economic management and poverty reduction target mayors and local and national government officials. On the smaller scale 'e-training' model, there are initiatives directed at specific audiences, such as Fahamu, based in Oxford UK, which aims to build organisational capacity in human rights, advocacy and change management in developing countries, using CD-ROMs supported by internet-base learning communities. The idea of ICT-mediated learning communities has gained ground in a number of organisational and inter-organisational settings.

A few African institutions are now running international distance programmes relevant to local government and sustainable development, including the African Virtual University (AVU), the African Institute for Economic and Social Development (INADES), and the African Local Government Action Forum (ALGAF). ALGAF is a joint initiative of the Municipal Development Programme for Eastern and Southern Africa (MDP), the GDLN and the World Bank Institute. Issues such as local and municipal governance and finance, poverty and gender are presented via videoconferencing to groups of local government practitioners, policy makers and others through GDLCs in six African countries, with support from other media.

A further issue is how and whether distance learning programmes are successful. While one might measure success by looking at the numbers enrolling and studying, the quality of educational input and the quality of skills imparted to participants, as we have argued elsewhere (Johnson and Thomas, 2004), the effectiveness of an educational programme in an applied development field might be measured by its impact on organizational and development capacity: how far participants change their professional behaviours and promote sustainable development more successfully in their particular cities or organizations. Such an outcome would support Lynton and Pareek's (2000a) suggestion that 'success', particularly in terms of building capacity, ideally requires a three-way partnership involving the participant's employing organization as well as the educational or training institution and participants themselves.

In general, then, the EDITOSIA survey indicated a lack of EDT provision in the African countries researched, with the exception of South Africa (even though distance education more broadly and the use of ITCs are both growing), a general lack of distance education and training that focuses on sustainability, and little that is specifically directed to local government. In practice this is not in itself remarkably different from EDT provision for local government in Europe, where officers are more likely to enrol for general courses in universities and other educational institutions than they are to participate in a course specifically designed for local government on sustainability (Szucs, 2004). In addition, many people in Europe share a degree of scepticism about distance learning as a mechanism for building capacities. However there are considerable differences with respect to funding sources for distance learning (in Africa, mainly dependent on donor aid; in Europe on government funding and course fees) and to technological infrastructure (Zimmerman, 2004). Moreover, the fact that there has been no substantial demand for EDT in local government in Europe may suggest that access to technology is only part of the issue (ibid.) and may reflect other dimensions of organizations' and individuals' approaches to learning and knowledge. Such other dimensions may include how learning and a learning culture are (or are not) institutionalised. Local

governments, as other organisations, may also assume that individual learning will automatically benefit the organization and that there is no necessity for an organizational approach to learning. The implementation gap mentioned above is often accompanied by the isolation of the trainee and a context that is not conducive to sharing and applying learning. We next take a closer look at workplace learning, and then discuss the role that ICTs can play.

4. The prospects of workplace learning for sustainability in local government

Workplace learning encompasses a range of ideas and forms. However the notion of situated learning (Lave and Wenger, 1991) underlies one important tenet, which is that knowledge is embedded in work experience and can be shared as a learning process between colleagues (Rainbird et al., 2004). Although there is a codified element to work-based knowledge, most everyday work- and practice-related knowledge is tacit. The former chief economist of the World Bank, Joseph Stiglitz, has proposed that sharing tacit knowledge for development is best done horizontally, by study tours, demonstration, secondments, pairing or twinning of similar organizations for the purposes of knowledge transfer, and even foreign direct investment where investment involves learning new know-how (Stiglitz, 1999, pp.12-13). Stiglitz's perception of the potential of horizontal transfer of tacit knowledge is based on the idea that 'best practice' cannot be 'downloaded' - i.e. it cannot be learnt from codified examples or data, nor can it simply be transferred from one context to another (whereas the sharing of tacit knowledge can lead to the 'local reinvention' of knowledge in different contexts [ibid., p.13]).

The relationship between horizontal workplace learning between colleagues and formal education and training is however a contested one. Young (2004), for example, argues that there are different types of knowledge and how they may be learnt. Reflecting on UK experience, he suggests that vocational education and training fail 'to recognise the fundamental differences between theoretical

and everyday or workplace knowledge' (ibid., p.198). Assuming that such categories of knowledge are valid, an issue for workplace learning is how one type of knowledge relates to or transfers into the other. Eraut (2004) for example suggests that there is a time lag between learning codified knowledge and its transfer to tacit knowledge within a 'performance domain' (ibid., p.206). Furthermore the performance domain is likely to change over time, which also makes the application of new knowledge a complex and probably interrupted process.

Converting codified knowledge into tacit or practical and personal knowledge that can be used more widely in local government thus presents a number of challenges for education and training programmes that aim to build capacity for sustainable development. The authors' own research into Education for Development Policy and Management (EDPM), which assessed the capacity-building impact of four education programmes (including three using distance learning) on employees and organizations working for development in Southern Africa and the UK, has shown that a positive organizational environment and opportunities to share learning are essential if formal learning is to be applied effectively (Johnson and Thomas, 2003, 2004).

There is however some scepticism that distance education is an appropriate medium to bring together work-place and formal learning. For example, Lynton and Pareek argue that 'programmed instruction' can provide information, knowledge and precision skills but not social skills and new behaviour (2000b, pp.198-203). But this equation of distance education or training with programmed instruction effectively restricts distance learning to the third ('eTraining') model and ignores the potential of supported open learning. It also divorces individual learners from their social and organizational context: even in the case of self-study of programmed modules on CD-ROM, there is potential for groups to be formed, with or without tutorial support, to discuss their learning and the constraints on its application. Evidence from the EDPM research mentioned above suggests that distance education and training programmes can have a capacity-building effect on

individuals, and, depending on the context, on organizations. In the case of these programmes, content was developed using an interactive learning and reflective practitioner methodology which encouraged participants both to bring and use their prior knowledge to their studies and to apply their studies to their work through assignments. Although precision skills were taught in the programmes, participants thought they changed or developed in more over-arching and behaviour-related ways, for example, becoming more reflective, more confident and more pro-active. Participants thought they could more critically and confidently manage people in periods of change, improve their strategic focus, formulate policy and evaluate policy implementation, and take a more prominent role in leadership and decision-making, especially during periods of organisational change.

A particular challenge for workplace learning is the extent to which individual learning becomes institutionalised as organizational learning. There are several ways in which this can occur. One of them is in the development of communities of practice (Wenger, 1998). In the EDPM research, such communities of practice tended to be stimulated (consciously or otherwise) by course participants. As noted by Fuller and Unwin (2004), communities of practice are also likely to be multiple and overlapping. This aspect makes identifying particular learning mechanisms more complex, but it also creates the possibility of more 'expansive learning environments' (ibid.).

Another mechanism is through the kind of 'peer coaching' proposed by Joyce and Showers (2002) in the context of schools. This process involves learners not only engaging in practice of new skills but in incorporating a mutual mentoring approach to implementing new skills and practices organisationally. In some respects, this approach has similarities to consciously-formed communities of practice, but incorporates a level of formality that can potentially lead to greater institutionalisation.

This discussion underlines the social nature of learning and knowledge transfer and the importance of taking social context and process as well as content into account. It also suggests that a structured learning process in or applied to the workplace needs to understand and include the interactions between different types of knowledge and their links to practice, and to build in mechanisms for that interaction to take place (as Eraut also suggests). How this is done does however also have to take organisational and institutional context into account (as underlined by McCourt and Sola) as well as the resource-strapped situation of most local governments in Africa.

5. Adding to workplace learning: the potential and limits of ICTs

Distance education programmes for promoting workplace learning can succeed or fail with or without the use of ICTs. However, if ICTs are to be used, the technology has to work well and reliably enough to allow support to be provided and not to undermine learning. This is a particular challenge in the African context, where poor ICT infrastructure, lack of access and low comfort levels with the use of ICTs act as serious constraints, except perhaps in South Africa and major urban centres elsewhere.

The EDITOSIA study proposed two learner profiles and two technology profiles that might pertain in the context of African local government. Learner Profile 1 (usually elected officials and lower level officers) is characterised by people with relatively low levels of education, little or no experience of distance learning, little or no access to a computer, and little or no skill in using computer or the internet. Learner Profile 2 (officers in management positions) relates to people who generally have a degree or diploma, have little or no experience of distance learning but do have access to computers and some experience of using computers and the internet. Technology Profile 1 is characterised by low availability of computers, low levels of access, no internet or email or unreliable connectivity, low maintenance skills, and little budget for ICT development. Technology

Profile 2 (capital and major urban centres) includes modern ICT infrastructure, internet and email access and use, skills in maintenance, and policies and budgets for ICT development. Combining these learner and technology profiles with models of distance education and training suggested two broad possibilities for EDT in local government:

(a) Learner and Technology Profile 1, where the training could be print -based with audio and video materials and possibly broadcasts, supported by face to face sessions. Elected officials might require more conventional methods including workshops and seminars.

(b) Learner and Technology Profile 2 and, to some extent Learner Profile 1 in main urban centres, where training could use a resource-based distance education approach, using interactive CDs, web-sites, email and chat/e-conferencing with varying amounts of face to face support (Jafta and Vonk, 2004).

These profiles indicate that there two key considerations for assessing the potential for using ICTs in education and training within African local governments: the social context of their use (including the digital divide), and whether and how ICTs can be used to enhance learning.

On the first, the work of Castells (1996) has been particularly influential in how we understand changes in social relations as a result of global interconnections through ICTs. Of particular interest in this case is the idea that populations are segmented in terms of ICTs: 'we are not living in a global village, but in customized cottages globally produced and locally distributed' (ibid., p.341). This idea focuses both on the technologies of ICTs and the messages conveyed - how they are produced, which audiences they reach and how those audiences interact with the content. In terms of the EDITOSIA study, this has a bearing on the above Learner and Technology Profiles. Thus, for example, there may be a mutually reinforcing relationship between lack of access to ICTs and status

within the organisation, which may result in unequal effects of using ICTs for training in the workplace.

Recent research into technology and social development carried out by UNRISD notes that society and daily life are crucial dimensions of the use and impact of ICTs (Powell, 2004, p.3). Guédon (2004, p.5) suggests, in addition, that to construct an information society requires 'a multi-faceted civil society where…active communication takes place'. Recent attempts to use ICTs for e-governance, for example, have shown that they can *both* undermine attempts to improve governance *and* widen popular participation (von Haldenwang, 2004). Von Haldenwang suggests that opening up political decision-making through the use of ICTs is likely to favour the better-off because of the distribution of access and use. However, he also suggests that access to ICTs by the collectively organised, and providing public access points to support organisation and mobilization, may have greater success for improved governance and democratization (ibid., pp.427-428). Such arguments reinforce the point that organizational environment and openness to popular engagement may well be prerequisites for the positive learning impacts of ICTs in local government training. They also suggest that ICTs can be used to open up spaces for engagement in ways that did not previously exist. However the hierarchical organisation of local government presents special challenges in this respect.

On the second, there are several aspects to whether ICTs can enhance learning. Providing information via the Internet does not in itself equate to learning. For example, King and McGrath (2004) have argued that the World Bank's creation of a 'knowledge bank' via the Internet is primarily concerned with knowledge transfer rather than learning. Yet even within the context of learning there is debate about the role of ICTs. Lynton and Pareek (ibid.) are not only sceptical that distance learning is able to achieve changes in competences and practice; they also doubt that virtual environments are able to create the friendship/collegial environments to facilitate the sharing

of experiences. Thus course design and pedagogy (interactive methodologies and reflective practitioner approaches), course support and possibilities for peer interaction and peer learning have to be key components of EDT. However, it would be foolish to pretend that such processes can always take the place of the laboratory or technical workshop or the field trip. Similarly, in supporting e-learning communities it is hard to achieve the 100% participation that can be commanded in a classroom. Such observations are, of course, one of the strongest arguments for mixed mode or 'blended' education and training.

So what can ICTs add to conventional distance learning approaches in work-related or work-based training programmes - and which ICTs should be used? Weller (2002) makes a strong argument for using the Internet over broadcast and CDRom. The reasons he gives are its increasing social acceptance, that educators are able to 'own' their medium and use it flexibly (thus providing scope for many different contents and approaches), that there is a generic interface for web technologies, and that it is interactive and can be personalised. Weller also suggests that using the Internet can transform organisations - it can be a 'disruptive technology, which both alters the organisation in which it is implemented, and also reaches a very different audience' (ibid.). Optimally, the Internet can potentially transform organisations, although the conditions under which this may occur are all important.

These arguments (which are primarily directed at educators) need some qualification, however, especially if (as the UNRISD researchers exhort) we take society, social context and everyday life into account. In addition, the current difficulties with (and expense of) connectivity in most African local governments suggest that EDT using the Internet may still be in the future. In addition, the kind of learning communities proposed in Section 4, require a considerable cultural change if they are electronically based: learning to participate in and learn from electronic discussion is a learning challenge in itself, in all parts of the world.

6. Final reflections

African local government, and sustainability, are both likely to continue to increase in importance. Democratization and decentralization are still being pursued as vehicles for development, and the environmental pressures which have promoted sustainability as a crucial area for local as well as global action are intensifying. However, it can still be hard for local governments, particularly those in Africa with their extremely limited resources, to prioritise sustainability simply in environmental terms. The pressing development concerns and demands of poverty reduction, health, basic education, and the practical difficulties of keeping any kind of local services going are bound to take priority.

This context points to the importance of emphasising sustainable development as an over-arching framework and sustainability as a set of principles for assessing all development and local government activity. The key competencies required for sustainable development relate to generic skill areas such as project planning, management and evaluation, decentralization, using participative methods, working in partnership, negotiation, advocacy, policy analysis and strategic management. Technical knowledge and skills updating in particular fields or sectors are also important but less crucial for sustainability.

It would be convenient if there were a match between the distinctions of generic competencies and skills and the EDITOSIA Learner and Technology Profiles. Two main models of training provision, utilising EDT in very different ways, one aimed at specific knowledge and skill areas for lower level technical staff and utilising ICTs only to enhance self-study learning packages, the other promoting generic competencies for managers, fully supported by the whole range of web-based and other ICTs, would however leave out most elected officials as well as managers in less

technically endowed localities. It would also be to accept how differentiation in ICT access can reinforces inequalities. In order to tap into the transformatory potential of ICTs (especially the Internet), the models might be varied by opening up the target audience in each case.

Two models, in which the ideal scenario involves a three-way learning partnership between the employing organization (local government), an educational institution (with 'tutors' or facilitators), and participants who share knowledge, reflect on practice and institutionalise learning within some form of 'community of practice', might thus be:

(a) Training in specific techniques and international 'best practice', and provision of information on specific knowledge and skill areas within particular sectors. This could typically be provided through a range of self-standing learning modules on different topics, delivered through conventional face-to-face workshops, self-study versions in print or interactive CD-ROM with tutorial back-up. Although the areas and techniques covered would be mainly the preserve of technical staff, the aim would be for managers and elected officials to be included in the training, so that there is more likely to be higher-level support for change.

(b) Integrated programmes of learning, covering a range of generic competencies, based on principles of reflective practice and knowledge sharing. Although this might seem most appropriate for those in management positions, we would suggest opening such programmes to a broader range of officers (and elected officials) with the idea of attracting those who might then act as 'change agents' at different levels within their organization. This model would work best for those able to use computers and the internet on a regular basis. Here ICTs would be used more to enable communication between participants as a group and between participants and 'tutors'. This electronic communication could range from allowing tutorial back-up at a distance in combination with content-based courses, perhaps web-based

or on interactive CD-ROM, to applications focused more on facilitated knowledge sharing within a group.

The two models differ significantly in the types of community of practice involved and how they relate to ICTs. The first is likely to be restricted to groups of colleagues within a particular local government organization. Even in the more high-tech localities where eLearning packages could be used, it is likely that such a community of practice would work through face-to-face meetings, either as a kind of 'self-help study group' or with a tutor or facilitator. Here one can envisage a linear two-stage process. In the first stage learning consists of assimilating knowledge or becoming able to utilise techniques or replicate 'good practice', which might be assessed via pre-designed tests as in programmed learning. In the second stage participants might compare instances of attempted application and would begin to understand the differences arising from trying to use knowledge developed elsewhere in their own particular context.

In the second model the community of practice is inter-organizational. Learning here would be focused on generic skills and competencies and would benefit from reflecting on and comparing the results of applications in different contexts. Managers and potential 'change agents' from several city administrations, say, might share experiences, through the Internet or possibly using video-conferencing, as with the ALGAF example mentioned in Section 3. This might be relatively informal, or could involve formal facilitation.

However, both these models of learning for sustainability are likely to suffer serious constraints in practice. In the first place there are the well-known issues of cost of, familiarity with, and access to ICTs. There is also the perennial difficulty of getting organizations to prioritise training when funds are needed to deal with more immediate crises, and this is compounded by the long-term nature of the topic of sustainability.

Another important constraint is likely to arise in the form of power relations. It is possible that the proposal to set up learning communities or communities of practice, either within a particular local government or on an inter-organizational basis, would be perceived as a threat, or a new kind of power base to challenge existing elite networks. In fact, the whole idea of building capacities for the application of new knowledge to organizational change poses a threat to any powerful interests which are well served by the status quo. The whole issue of how learning relates to internal regimes of power merits much further consideration.

Building capacity for sustainable development cannot be based simply either on making information available through ICTs or on the use of conventional training models, whether ICT-based or not. There is a need to go beyond this to a structured, interactive and reflective process of facilitating experiential learning and knowledge sharing that engages with communities of practice and employing organizations as well as with individual local government officers.

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[i] Electronic Distance Training on Sustainability for African Local Governments
[ii] For the rest of this article, we use workplace learning to include work-based and work-related learning.
[iii] This section draws on Anton and Stamm, 2004. More information about the project can be found on http://www.editosia.org/.
[iv] Reported in the Indian Express, August 14th, 2005.