The Role of the Web in the Promotion of African Languages

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Abstract

In this article we explore the possible contribution of the Web in promoting the use and status of African languages. Participation in sharing and producing knowledge through the Web can play a key role in the economic, social and educational development of Africa. While physical access to information is hampered by lack of infrastructure and connectivity, epistemological access is hampered by the use of English. Resources in African languages are available. Until the amount of Web content and the number of users reach critical mass, these resources play a symbolic rather than an instrumental role in promoting African languages. The use of electronic resources available on the Web could contribute to cutting the printing and transport cost of paper material, especially in multilingual settings where many languages would have to be represented. Another practical way in which the Web can promote the development of African languages is to promote communication among their speakers. This is already showing its potential by allowing experts from various disciplines to work collaboratively on the development of new indigenous terminology through mailing lists and chat rooms. On a larger scale, the Web can play a unifying function among speakers of different varieties of the same African language. This is similar to the role radio and TV played for European and, in recent times, for African languages. Improving the status of African languages by increasing their presence on the Web could be seen as a way to counter current attitudes and beliefs, and spear-head a positive cycle of

transformation in Africa. Government can play a coordinating and endorsing role, but the initiative needs to come from academic institutions and Non-Governmental Organisations (NGOs). Users need to participate and support such efforts, in spite of the traditional association of African languages with backwardness and low-status domains. The extensive media coverage and participation in events such as translate@thons indicates latent support for the use of African languages in the ICT domain, which needs to be channelled through collaboration between the different stakeholders.

Keywords: African languages, Information and Communication Technology (ICT), web access, information access, educational development, economic empowerment, social transformation, linguistic and cultural diversity

Introduction

African languages are considered suitable for low-status domains and are seldom associated with modern technology (Webb 2002: 268). English and other languages from the West are the languages in which people globally access Information and Communication Technology (ICT) resources. This is endorsed not only by speakers of such languages, but also among African language speakers themselves. This position is supported by the misconception that African languages are underdeveloped and that their vocabulary is unable to express the precise meaning of technical terms (Webb 2002: 252). This notion entrenches English even further as a dominant language of Science and Technology in Africa, and undermines the richness of the African continent's linguistic and cultural diversity. Given the generally low levels of English proficiency on the continent, for Africa this is a huge challenge in actively participating in the production and sharing of knowledge through ICT.

Rationale for Promoting the Use and Status of African Languages in the ICT Domain

Africa is economically, socially and educationally underdeveloped. The economic empowerment, social transformation and educational development that in other continents is supported by the spread of ICT and participation in

the Information Society is almost absent in Africa. Adama Samassekou (2005) argues that this is partly the case because African people are not able to share and access information on the Web in their languages. For the revival of the African continent, many ICT experts agree that the linguistic and cultural diversity characteristic of Africa needs to be harnessed taking full advantage of the new technologies. Bamuturaki (2008) states that there is a need to make concerted effort and actively embrace technologies that will help influence Africa's commitment to economic restoration and growth. He further acknowledges that,

> … linguistic and cultural diversity are realities of development and, therefore, ensuring that Internet content and user interfaces are available in African languages, and adapted to cultural preferences and sensitivities, should merit greater attention from the African governments (Bamuturaki 2008).

To many of the inhabitants of the African continent, English and other Western languages through which technology is accessed, are not their mother tongue, but were imposed on them by colonialism. This means that most Africans can access the Web only in a second or foreign language. The inability to access ICT-based information in one's own language curbs one's access to technology (Osborn 2006:87).

African languages are intrinsically capable of expressing any concept and of supporting integration and development. A pre-colonial picture of Africa is characterised by numerous languages, where indigenous languages were sufficient in communicating different kinds of knowledge within societies and across societies, as well as complex indigenous knowledge in areas such as 'astronomy, medicine, philosophy and history' (Department of Education 2003: Sect.12-14). The richness of African languages and their ability to promote economic empowerment is reflected in the thriving trade that existed in Africa during the pre-colonial times (Van Dijk 2006: 49 - 55).

Contact with Europe was detrimental to the multilingual character of Africa. Instead, the European languages and culture dominated and eventually took over in the high-function domains in the continent, while African languages and cultures were only considered suitable for low-status

domains. Former South African president Thabo Mbeki, in his book *Africa: The time has come*, argues for the rebirth of the African continent – a concept that has come to be known as African Renaissance. He argues that African Renaissance can play a significant role in re-identifying the developmental discourse of the continent. Furthermore, Tema (2002:136) affirms this notion by asserting that 'African Rebirth' can come about only when African indigenous people are allowed to use their own metaphors to anchor new concepts and to re-examine their indigenous knowledge, to construct an independent paradigm for development.

In the modern era, Information and Communication Technology (ICT) is a powerful tool to support development. In the African context, however, ICT contributes to perpetuating the colonial legacy. As an example, the Web is dominated by languages from outside the African continent, primarily European languages such as English. It is in this context that Serote (1999: 351) asks some challenging questions.

> Is it true that Africa may be the only continent which imparts knowledge to its [people] in foreign languages? If this is the case, what are the implications? … How must Africa ensure that [its people]… become empowered in their mother tongue to deal with concepts, and that diverse cultures which can also result in multilingualism and multiculturalism, are a resource of knowledge in order to find solutions to issues?

There is a relationship between access to information and socio-economic empowerment (Pigato 2001). In the African continent, European languages are instrumental to upward economic and social mobility and political participation. However, only a small percentage of the African population is proficient in these languages. Their use creates a hurdle for the majority of the people in accessing information and participating freely and openly in the global world of information technology. The inability of a large portion of the population to access technology and information in their language further widens the gap between the haves and have-nots. Adama Samassekou, as quoted in Bamuturaki (2008) observes that the 'new information technology should empower our people and not take away knowledge'.

The combination of African languages and ICT can help to increase epistemological access to information stored on the Web (Ngcobo 2009). For example, in combination with text-to-speech technology, Web resources in African languages could contribute to addressing the problem of illiteracy. Illiterate people could have an automatic voice help them navigate through the interfaces and read the content to them in their mother tongue. Making materials available in electronic as opposed to print format could contribute to cutting printing costs as these are often mentioned as an argument against the use of African languages, especially in multilingual contexts where several languages would have to be represented at the same time (Titlestad 1996). The Web can support access to versions of the same document in various languages at the same time. Perhaps most importantly, presence on the Web would improve the status and visibility of African languages and their speakers in their own eyes and in the eyes of the International community.

African Languages on the Web

Although English is undoubtedly the dominant language in the field of Information and Communication Technology (ICT), it is not the only language used on the Web and account for roughly one-third of the total content available. Other powerful languages, such as Chinese, Spanish and Arabic for instance, are also well represented. In recent years, a growing number of resources relating to African languages appeared on the Web. These are mainly on-line dictionaries, often maintained by speakers of other languages. At the same time, considerable efforts have been put into localising applications (either desktop or Web-based) into African languages. Windows XP is already available in Kiswahili, Setswana and isiZulu, and upcoming Vista will include a number of other indigenous South African languages. Thanks largely to the efforts of Translate.org.za (an NGO committed to the localisation of open-source software in all 11 official South African languages), it is possible to operate a computer almost entirely in a language such as isiXhosa, for instance. This indicates recognition of the importance of making ICT available in African languages.

While information is available (in other languages) *about* African languages, there is not much content available *in* the African languages

themselves. There are on-line bilingual dictionaries such as 'Xhosa on the Web' (http://mokennon2.albion.edu/xhosa.htm), Wikipedia in various African languages (http://ts.wikipedia.org/wiki/Afrika), language learning web pages (http://www.africanlanguages.org/), for example, 'Xhosa learning software, Xhosa Talk now (http://www.languagesource.com/acatalog/Xhosa_Learning_Software_Xhosa_Talk_Now.html), and general information and academic publications on African languages (http://www.columbia.edu/cu/lweb/indiv/africa/cuvl/langs.html).

As far as websites in African languages are concerned, Wikipedia has some content available in some of the South African indigenous languages, i.e. isiXhosa, isiZulu and Sesotho. However, browsing through the content of the isiXhosa websites specifically, it seems that more work still needs to be done to ensure the appropriateness of the terminology used and the quality of the language.

The actual usefulness of Web resources in African languages needs to be further discussed and problematised. Maşoeu and de Villiers (2001) conducted a survey on the attitudes of speakers of African languages in South Africa towards the use of Web content in their mother tongue. They note that, at the present stage, making Web content available in African languages serves more a symbolic than an instrumental function. In other words, its main contribution is the promotion of the status of the African languages rather than increasing access to technology for their speakers. Users in Maşoeu and de Villiers's (2001) study were already familiar with computers in English. Research conducted by some of the authors of the present article (Dalvit 2010) explored the experience of students in South Africa (in township and rural schools as well as University) learning computer literacy partly in their mother tongue (isiXhosa) from the beginning. Results were encouraging both in terms of students' attitudes and access to knowledge. The study conducted in these high schools presented the continuing negative attitudes against the use of African languages as the LoLT especially in fields such as Science and technology. Even though students admitted that they sometimes struggle when taught in English these negative attitudes prevailed. These attitudes emerged from the perceived difficulties and challenges associated with the use of African languages. Contrary to their attitudes, it was evident that African languages play a significant role in improving students' content comprehension. In the

interviews, students stated that when they come across English difficult words they usually refer to a bilingual dictionary.

The somewhat contradicting pieces of research presented above highlight the complexity of the issue. With respect to access to information, Africa is caught in a vicious cycle, trying to balance epistemological and physical access through ICT. On the one hand, Web content and resources in African languages can be physically accessed by a small portion of the population, as only a small percentage (Osborn 2006:89) of the African population is connected to the Internet. On the other hand, one could argue that lack of epistemological access, i.e. the ability to use the technology when available, is partly responsible for the little motivation to increase physical access and for the failure of many ICT-for-development projects. To support this claim, a more language-independent technology, i.e. cellphones, constitutes an incredible example of leapfrogging in the penetration of technology in Africa. While the dialectic relationship between physical and epistemological access provides an intriguing theoretical framework, the focus of our article is on the possible role of the Web in preserving and promoting linguistic diversity on the continent.

Efforts to make the web available in African languages are by small organisation and few individuals who mostly do so voluntarily. Although these efforts are interesting and should be applauded, they have little potential to impact on the bulk of the African population. The experience of many current projects support the arguments perpetuating the exclusion of African languages from the ICT domain, i.e. lack of resources, of support among their own speakers and of coordination amongst the various efforts. These are discussed further in the following section in relation to the role of different stakeholders.

The Role of Different Stakeholders

A. Government

The Government has a crucial role to play in promoting both physical and epistemological access. This can be done through the provision of infrastructure (ICT as well as electricity) and through education. In South Africa, for example, about 80% of the total population is not fully proficient

in English. This prevents them from accessing information, and communicating and sharing their knowledge with the rest of the world. It is argued (see Titlestadt 1996; de Klerk 2001) that providing education in all 11 official languages would be too expensive and that resources should be directed towards improving English teaching.

There are strong arguments against the view that English teaching should be foregrounded (Heugh 2002; Webb 2002; Grin 2003 and Cole 2003). Heugh (2002) cites a study by the World Bank according to which multilingual education would entail an increase of just 1% on the total spending for education. The development and use of e-learning material in African languages (see Dalvit 2010) can further help to reduce the printing and transport costs associated with paper-based material in all 11 South African languages.

Heugh (2002) also argues that the costs of the currently dysfunctional education system outweigh the benefit of epistemological access for all. Cole (2003) in a study conducted in South Africa on the cost of implementing the language-in-education policy, argues that language should be seen as an economic resource. He further states that when language is taken as an economic resource, 'language diversity is seen as an opportunity to achieve full participation by people in society and in the economy' (Cole 2005: 35). As discussed above, access to information in their mother tongue is closely linked to the economic, social and educational development of African people.

Presence on the Web can contribute to the development of African languages and their use in education. Dalvit *et al.* (2005) discuss the possible contribution of ICT to solving some of the problems traditionally associated with the use of African languages. In terms of the supposed underdevelopment of African languages, ICT could have a standardising effect in promoting the use of a common standard, in much the same way that TV did for other languages. The necessary government structures (e.g. Pan South African Language Board, BAKITA – KiSwahili Standardisation Board in Tanzania, etc.) are already in place to promote coordination among various efforts. Once this is achieved, supporting the widespread use of a common standard would help to overcome regional differences among different varieties. Government bodies could take advantage of the new technologies to make the process of coordination more efficient and to make

new terminology available for public comments and use.

B. Academic institutions

Hugo (2000) in his introductory speech at the CHI-SA conference points out that the Information Technology's impact is beyond working environment of desktops. It is part of our daily lives as it moves nearly into every environment in new devices such as cellular phones which have social value. He further argues that an inter-relationship between private sector, government and universities in South Africa, especially in terms of financial investment on the part of the government and private sector, and research in terms of the universities is essential. According to Hugo, the web interface should

> reflect and acknowledge our diversity … and accommodate the true needs of our upcoming generations … we cannot afford to exclude any individual of any sector of society from access to and from benefiting from IT.

Although Governments have considerable financial resources they can commit and have structures in place to support language development, it should be noted that actual transformation, both in terms of language and in terms of ICT, is often driven by other stakeholders.

Academic institutions have an important role to play in promoting African languages. Alexander (2001) calls on universities to take the lead in the process of social transformation in Africa, as they have both a prominent status and the necessary flexibility for change.

The South Africa-Norway Tertiary Education Development (SANTED) programme is the fruit of collaboration between the Norwegian Government and the South African Department of Education. It sponsors several projects for the promotion of multilingualism at various South African institutions. At Rhodes University, it sponsors a programme for the promotion of isiXhosa, in realisation of the Rhodes University Language Policy (RULP 2005). The programme started at the beginning of 2007 and it is hosted by the Rhodes School of Languages (African Languages Section). One of the areas in which the programme is particularly active is the devel-

opment and testing of ICT resources in English and isiXhosa. The ICT Unit has worked in close collaboration with other academic sections and institutions as well as NGOs on making ICT resources widely available in African languages through the Web. Their outputs include the Horde/Imp webmail system in isiXhosa and the Mozilla Firefox Web Browser in Luganda.

C. Non-Governmental Organisations (NGO)

Various projects and organisations are devoted to the promotion of African languages in the ICT domain. The African Network for Localisation (ANLoc) project (http://www.africanlocalisation.net/) hosts a website with all recent developments concerning ICT and African languages. This is an example of a web-based reference for ICT resources (websites, software, spell-checkers, text-to-speech etc.) *in* and *about* African languages. It indexes projects and organisations responsible for various languages and activities throughout the continent.

Translate.org.za (http://www.translate.org.za) is a South African NGO committed to the promotion of all official languages of the country in the ICT domain. Besides its own translation application Pootle (PO-based, On-line Translation and Localisation Engine), Translate.org.za has also contributed with the localisation of various other Web-based applications into African languages. These include the Phone content management system and the Horde/Imp webmail system. To facilitate communication among African languages scholars and experts, Translate.org.za has established mailing lists where translators work collaboratively online. Each of the South African official languages has its own mailing list. These mailing lists are designed for each language community to discuss difficult translations and terminology development. This makes the work less expensive and time consuming as well as reduces duplication of work since translators all over the country are able to communicate their work online. The use of communication tools such as email is an example of how the Web can directly contribute to the development of African languages, in a way few other media can.

Translate.org.za has also developed a methodology to translate and localise software interfaces and Web content called translate@thon. A translate@thon can be described as a ‘translation marathon’, during which a

group of volunteers works collaboratively on-line to localise a piece of software or to translate content. A person with technical expertise usually works in pairs with a person with language expertise using a Translation and Localisation management System (e.g. Pootle) which divides the work equitably and provides suggestions for the translation of certain terms to ensure consistency. Translate@thons can be either small (a few experts who can yield high quality work) or large (a great number of volunteers who can tackle a big amount of work in relatively short time.

Support for African languages seems to be present at various levels, but it is important to co-ordinate and synergise such efforts, fostering the participation of all stakeholders. Translate.org.za has partnered with academic and research institutions in organising events to make ICT resources available in a number of African languages. In our experience at Rhodes University in South Africa and at Makerere University in Uganda, a large translate@thon is an excellent way to raise awareness around language issues. It is also an example of an innovative way in which resources for the African languages can be developed at low cost thanks to the use of ICT. Involvement of the actual users of the resources fosters a sense of ownership and pride in one's language, which is particularly important for the development of African languages at the present stage.

D. Users

The success of the translate@thon model disproves one of the main arguments often cited to exclude African languages from high-status domains such as ICT, i.e. lack of support among their own speakers. According to some scholars (Webb and Kembo-Sure 2000, others), speakers of African languages have negative attitudes towards the use of their mother tongue in domains other than the home and informal communication. It should be noted that most research on the subject has been carried out with individuals who have never been exposed to the use of their mother tongue in high-status domains, and whose only reference point in this regard is English. Enthusiastic participation at various translate@thons around South Africa and in other parts of Africa indicates that speakers of African languages are willing to contribute their time to the promotion of their mother tongue in the ICT domain. Recent research at PhD level (Dalvit 2010) suggests that being

exposed to resources in African languages improves the attitudes of their speakers, even in an English dominated domain such as ICT Education at university level.

Media of communication which use language independent technology, such as radio and TV, feature a strong presence of material in African languages. The Nigerian movie industry is an example of products in African languages which, with subtitles, are exported with success to other parts of Africa. In South Africa, other examples are radios such as *Umhlobo Wenene* (an isiXhosa radio station), SABC news (broadcasted in some of the indigenous languages) and soap operas such as *Isidingo*, *Generations* and *Muvhango* (where code-switching between English and African languages is the norm). Even traditional print media such as the *Isolezwe* daily newspaper are successfully run in isiZulu, in spite of printing costs, thanks to the support of its readers.

The costs of ICT physical access are becoming increasingly similar to those of accessing other media. Computers and laptops are becoming cheaper and cheaper, and their cost is not very different from that of a middle-range TV of a good Hi-Fi system. Cost of bandwidth and availability of network differs in different parts of Africa, but the daily equivalent of buying a newspaper can buy many more Megabytes of information on the Web.

In our opinions, epistemological access and availability of content in African languages is the main challenge for speakers of African languages to be motivated in accessing and exchanging information on the Web. The advent of Web 2.0 tools such as blogs, wikis, chats, forums etc, allow average Internet users to contribute and publish on the Web at little or no cost. Experiences with community blogging, partly in African languages, have been experimented in various sites (among which is Rhodes University) with success (Personal communication with Rod Amner, lecturer at Rhodes University's School of Journalism and Media Studies). Once enough users start producing and publishing content on the Web in African languages to reach critical mass, we hope to witness the growth of a Web i*n* African languages driven by their speakers 'from below'.

Conclusion

Our premise in this paper was that availability of more Web in various Afri-

can languages can contribute to the positive impact of ICT in African. Some Web content, applications and services in African languages are available on the Web. Their impact, however, is conditional to the limited physical and epistemological access most African people have to ICT. Different stakeholders play different roles in the promotion of African languages, with Governments in co-ordinating and endorsing positions, academic institutions contributing resources and expertise, projects and organisation providing initiatives and users supporting and participating in the process. The Web can, in different ways, support all of these tasks and can make a significant contribution in addressing the relative challenges.

Acknowledgements
We would like to acknowledge the sponsors of the SANTED Multilingualism Project and the sponsors of the Telkom Centre of Excellence at Rhodes University.

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