

Opening access and opening dialogue: the use of web2.0 technologies in Laos

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Abstract

Access to information is increasingly important for different stakeholders in Laos to make informed decisions and to deal with the rapid changes taking place. As the country is highly diverse (with more than 47 ethnic languages and cultures) and literacy levels low, innovative ways for information and communication need to be identified. The National Agriculture and Forestry Research Institute and the National Agriculture and Forestry Extension Service have been testing out a variety of new web information services targeted toward researchers, extensions agents and development professionals. Both organizations have taken advantage of advances in technology to improve access to information as well as two-way communication through web 2.0. This paper explores three of these systems (The Lao Agriculture Database, Lao44.org website and the Laolink discussion group) and evaluates how they have improved researchers and extension agents access to information as well as opportunities for improving two-way communication channels. The main lesson learned is that systems need to have the participation of the intended target group from the outset and allow them easy access. Systems also need to be built over time with the users rather than building large systems from the outset. Finally, there is a need to ensure that these web systems are facilitated and actively promoted.

1. Introduction

Laos is one of the least development countries in Asia defined by the UN, a country with about 6 million people including more than 45 ethnic groups in which 33% (2005) are poor. Laos is called a "land-lock" country, however, the country is not only locked in term of geography, but also in term of access to information. The recent index (2009) on freedom of press by the Freedom House ranged Laos as "not free" due to low rating of legal, political and economic environment. As reported by the freedom house says: "The government owns all newspapers and broadcast media. The media's official role is to link the people to the party, deliver party policy messages, and disseminate political ideology" (Freedom House, 2009).

However, the government has not blocked television and radio broadcasts from abroad nor the internet; a large number of citizens watch Thai television and radio, and wealthier individuals have satellite access; more and more people, especially the younger generation can easily access the internet due to lower price of computer, mobile phone and more choices of internet service providers/packages. Because of this, the use of ICT as a tool for opening access to information and even opening up dialogue is considered high potential. There is not only potential for Laos but also for other countries worldwide as stated recently by the BBC "Almost four in five people worldwide see internet access as a fundamental right" (BBC 2008).

The National Agriculture and Forestry Extension Service (www.laoex.org) and the National Agriculture and Forestry Research Institute (nafri.org.la) with support from the Laos Extension for Agriculture Project (Swiss-funded) and the Upland Research Development Program (Swedish-funded) have been

Total population*:	5.6 million
No of Households *:	952,386
Rural population*	77%
Official Number of ethnic groups	49
No of computers (per 100 households)	.16
Mobile usage****	31
Internet usage**	1.5
Literacy rate*	72.7
Freedom of press (rank/no of countries)	163/169
Source: * NSC 2005; ** Freedom house, *** Ministry of Planning and Investment **** https://www.cia.gov	

playing a leading role in the agriculture and forestry sector in using various ICT tools for information and communication services. The goal of the efforts is to help rural farmers to improve their livelihood through accessing information and technologies. However, due to limited infrastructure and education in the rural of Laos, internet-based services are currently accessible only to intermediary groups of researchers and development workers, most of whom are urban-based.

This paper tries to draw lessons from the NAFES and NAFRI experience on using ICT as a tool to promote the human fundamental rights in accessing to information and freedom of expression in the context of Laos which is currently ranked one of the worst countries that considered “not free”.

2. The context and challenge

There are a number of obstacles to developing an open society in Laos. Before the establishment of the new economic mechanism late 1980s, Laos was a closed, socialist society. Information was centralized and hard to access. In addition, there has never been a tradition of the written language. The culture for the most part is an oral one, something that is reflected in literacy rates which are quite low (about 73%)

After the 1980s, information became more available but the patterns regarding information access and use have been hard to break. For instance government staff and even foreign experts often self-censor their own reports or information for fear of being reprimanded or deported. Furthermore, access to information was not seen as right but something that was given in a paternalistic manner. Even when government staff had a responsibility to collect reports or statistics, they needed an official letter to request the information, and it was never sure they would get what they requested.

In terms of official media, Lao ranks as having the one of the lowest levels of press freedom in the world. All mass media sources within the country are fully controlled by the government. Thus, the information through these channels is not transparent or diverse, and often does not reflect the interest of the people. Even libraries are hard to access, particularly since transportation in Laos takes a long time and is expensive due to geographical constraints.

A further problem is the availability of information in Lao language. A lot of the useful government materials and international organizations are non-Lao and not widely accessible. For example, there are over 80 donor agencies and international non-governmental organisations working in Laos, but most of their materials and reports are in English and not available on their websites. In consequence, people have a hard time to access development information.

In recent years, however, the development of Lao script has allowed Lao people to use email, develop websites and text SMS in local language. Lao language content and materials is now much more widely seen on the web as compared to five years ago. Below is a list of selected news and information sites, open source communities and web-boards that are now using Lao script.

News sources on-line	Lao communities
http://www.vientianemai.net/ http://www.kpl.net.la/lao/index%20lao.htm http://www.pasaxon.org.la/ http://www.kongthap.gov.la/index.htm http://www.lnr.org.la/lao%20new.php (daily radio in Lao and Hmong language) http://www.tnl.gov.la/ (national television)	http://www.laozaa.com/ http://www.laobuntu.com/ http://joomlalo.com/ http://laoupload.com/ http://laodictionary.net/

3. Conceptual framework

3.1 Information is power

It is widely accepted that information is a key ingredient in the generation of knowledge, and that knowledge is a key ingredient in empowerment. Human capability, specifically the power to lead our lives in the way that we want, expands as we become more knowledgeable.



At the World Summit on Information Society in Geneva, 2003, participants recognised that “information, knowledge, communication and education are at the the core of human progress, endeavor and well-being”.

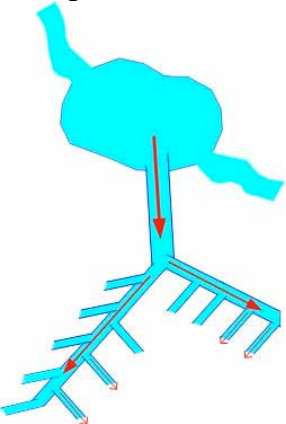
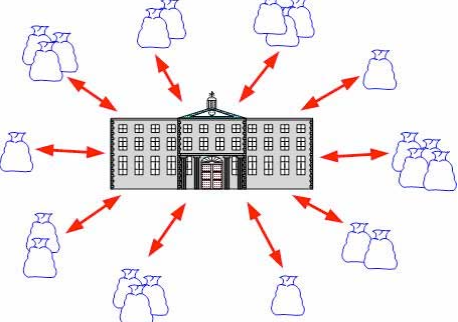
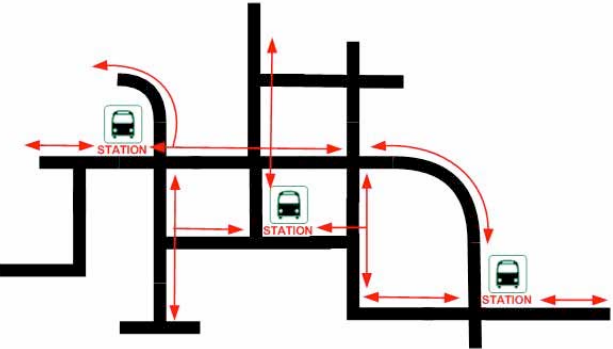
The World Congress on Communication for Development, Rome, 2006 also agreed that “Communication is essential to human, social and economic development. At the heart of communication for development is participation and ownership by communities and individuals most affected by poverty and other development issues”.

These ideas provide both justification and inspiration for the recent development of on-line information systems in Laos, specifically LAD, Lao44 and Laolink, Each of these system will be examined in more detail in this paper.

3.2 Alternative models of Information system

In the age of the internet, information systems and models are rapidly changing. As the three models below demonstrate, the conventional systems and frameworks of information and communication have transformed. Information systems used to be centrally managed and stored such as in Models 1 and 2. As model 1 shows, there is a top-down approach to dissemination – sender to receiver – with little opportunities for feedback. In the Model 2, the “banking model”, there are opportunities for collaboration but information and communication systems are still centrally managed.

Model 3 shows a distributed system which is becoming the norm in the Web 2.0 world. Here there are many nodes in the system and each has their own knowledge and information which can be provided and used by others. Castells call this the “network society” where “the most powerful person in a network is the spider, the one to whom everybody has to relate...In other words the greatest personal capital in a network society belongs to the best connected person” (Eriksen, 2007).

Model	Observations on the model	Adaptation to the case studies
<p>1. Irrigation model - One way, decentralized</p> 	<ul style="list-style-type: none"> Information is centralised and controlled by one gate manager Audiences can only use the information The system need high investment and operational cost in order to maintain and disseminate the information to all audiences 	<p>LAD fits to this framework because information is centralized at NAFRI; audience cannot contribute to the system directly</p>
<p>2. Bank model - Two way, centralized</p> 	<ul style="list-style-type: none"> Information is centralised and controlled by one gate manager Audiences access to information, make use and contribute to the system The audience can access it under the same rule and regulation 	<p>Lao44 fits to this framework because the system allow the public audience to contribute directly to the system</p>
<p>3. Transport model - Two way, decentralized</p> 	<ul style="list-style-type: none"> Different types of vehicle (channels) for different types of passenger (audience) and different terrain (subject) Multiple routes between stations (info centres) depending on needs of passengers. Sometimes demand driven (e.g. tuk tuk) and sometimes supply driven (e.g. scheduled bus). The network is managed by a set of traffic rules and regulations (roles and procedures), rather than controlled by a single station 	<p>Lao44 is also fits to this framework in the perspective of information network. Lao44 plays a role as a portal (main bus station) with link to other online databases and communities (other bus stations)</p>

3.3 Dongdok Statement on Access to Information on Development (SAID)

In December 2007, a group of communications specialists working in the fields of agriculture and natural resource management convened a workshop to share experiences and craft a declaration called the Dongdok Statement on Access to Information for Development (**Dongdok SAID**). Some of the key areas of the statement focused on a commitment to sharing resources, information and promoting open access and open source systems:

“We commit ourselves to working together in order to improve access to information that will enhance the participation and empowerment of the citizens of Laos in their own development, and support the Government and its development partners in fulfilling the goal of poverty eradication; We believe that wider access to information is required at all levels of society, in all parts of the country, and with respect to developments in all socio-economic sectors (agriculture, industry, health, education etc)”.

This was a watershed in Laos as it was the first time that individuals and organizations committed themselves to sharing resources openly and in an informal manner. From this meeting a number of initiatives have evolved, most notably the Coalition for Lao Information Communication and Knowledge (CLICK), Lao 44, and The Rights-LINK programme. In addition, a number of initiatives that were just emerging at that time have become full time services including the Laolink discussion group and the Lao Agriculture Database (LAD).

4. Case studies

4.1 Lao44.org



Lao44 is currently the biggest open online library in Laos for Lao related materials. The objective of this website is to allow citizens to publicly and freely share their information. This website is operated under Article 44 of the Lao constitution (2003) which states: “Lao citizens have the right and freedom of speech, press and assembly”.

The system was designed by members of the Lao open-source community using Joomla software. The system is currently managed by staff of the Laos Extension for Agriculture Project with commitment from more than 15 International NGOs and local NGOs for long term management of the website. This commitment will provide sustainability even after the project stops supporting.

Because the system uses open-source software, the web design took less than two month for completion. Joomla provides a high degree of flexibility for additional modules and configurations. The local open source community continues to provide technical support for the system maintenance.

Since it was established in November 2008, the website has now more than 1500 documents and 300 videos available for download. The content covers all issues concerning development such as agriculture and forestry, health, education, training and extension materials, statistics, indigenous knowledge, environmental issues, laws, economics, gender and government policies. Because all materials are in Lao

language and cover a wide range of topics, the system has generated a large amount of interest from various groups of people.

The latest statistics (March 2010) shows that there are over 500 visitors to the website each day, most of whom live in Laos. This figure is considered high in the Lao context. A recent survey showed that over 70% of respondents said that the website is very useful, 20% useful, 13% quite useful and 7% not useful at all. In term of improvement, people wanted to have more documents in the repositories while only a few people want to improve the standards, for example correct spelling and short descriptions of the documents.

The system allows anyone to upload their documents to the system. Documents that are submitted need approval from the administrator, but the uploading process requires only 4 steps: a) browse, b) select the categories c) name the document and d) select some keywords. Because of simplicities of the structure, it takes less than a minute to provide basic information for a single upload, leading to short time for data entry and maintenance.

Based on the conceptual framework of information system, the Lao44.org fits in to the ‘bank’ model. The website allows people from different sector to share their information into the same portal, which is open to the public.

The on-going development of an off-line version of Lao44, called the “Wisdom Box”, will increase the usefulness of this information system. By putting Lao44 and other digital libraries onto an external hard drive, the information will be accessible in rural areas where internet connections are not available or very slow.

4.2 The Lao Agriculture Database

The Lao Agriculture Database (LAD) was the first on-line repository specifically for Lao agriculture and forestry reports and materials. LAD was established in 2004 by NAFRI in collaboration with Office of University Library of Kasetsart University (Thailand).

The database includes research results, surveys, training and extension materials, working papers, as well as policy and strategy reports. Both Lao and English language materials are included. Currently, the database has around 2200 records with a total 950 downloadable full text files (March 2010).



The LAD was adapted from the FAO Agriculture Research Information System (AGRIS) and is compliant with AGRIS-AP standards. NAFRI decided to adapt and use the AGRIS system because staff had previously been trained in the system, had long-standing partnership with KU and FAO and was interested to link to the AGRIS global network.

As part of this effort, NAFRI translated the FAO multilingual, structured and controlled vocabulary system called AGROVOC terms into Lao language for use with LAD (more than 13,000 terms). This was developed jointly by a group of more than 40 staff from both NAFRI and the National University of Laos. It was also assisted by the Office of the Library, Kasetsart University that had already translated AGROVOC into Thai.

Because the original web-AGRIS system could not support Lao language fonts, or Unicode fonts in general, NAFRI developed its own web-based system using Mysql Lite and PHP in 2007. The new system is still AGRIS-AP compliant but now offers full Lao Language search capability. In addition, some special features have been developed including: most recently entered/most popular side bars on the front page, a statistics page, and editor and administrator tool on the backend. While NAFRI is not an 'official' AGRIS centre, it has participated and coordinated its efforts with FAO AGRIS.

One of the strengths of LAD is that it acts as an institutional memory for Lao based research and agriculture development within the country. It has an institutional base within NAFRI and two full-time staff. Once Swedish funding stops at NAFRI, the system should sustain itself through other funding mechanisms that the center is attracting. Another strength is that working with AGRIS partners in Rome and Thailand, the CAFRI team has been able to build its capacity and develop partnerships with other organizations around the region. It is expected that in 2010, NAFRI and the Kasetsart University will develop a research project to link Thai and Lao systems together in one portal. Using AGROVOC standards, people in Lao and Thailand will be able to access the full range of materials within each of the repositories. This is a huge bonus for Lao users as most can read Thai language but have difficulty writing or typing it.

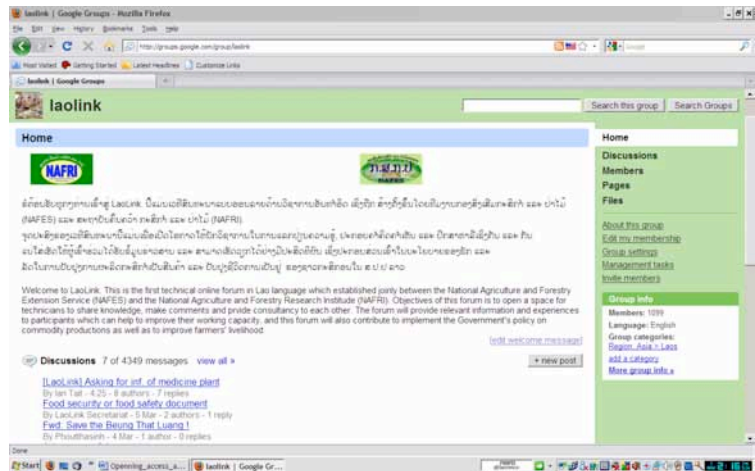
Some issues that have arisen since its development include:

- **Capacity of staff to manage and use:** One of the biggest lessons and challenges has been to develop staff capacity to manage and oversee LAD. AGRIS indexing and cataloguing can be quite complex and it has been hard to retain staff – though now there are two full-time staff on it.
- **Compatibility with Lao language:** During the AGRIS installation it was realized there were a number of compatibility problems with the AGRIS/CDS/ISIS data system and Lao fonts. A temporary solution was developed in which Lao key words were put into a separate database and to search a numbering system was used. Fortunately, in 2007 a new database system was developed that is completely Lao compliant. However, the initial problems with Lao language turned off many users.
- **Complicated nature of AGRIS and AGROVOC:** In terms of the interface, many people find it very complicated to search as most are now only accustomed to “Googling”. In Laos internet connectivity is slowly emerging and people find it difficult to use AGROVOC or even search using the different options that are now offered. The team has been looking into converting the CARIS subject categories into virtual folders to make it easier for users to search.
- **Getting other organisations to contribute to LAD:** While LAD is well-known, it has been difficult to get other organizations to contribute. NAFRI is solving this problem by making more linkages to different organizations (faculties at the university, projects and organizations). In addition, NAFRI will at some stage seek to become an official AGRIS Centre. Interestingly, it did not take this step (getting formal approval) before because there was concern that it would not be approved, or approval delayed, and it was better to 'not ask for permission' in this instance.

4.3 Laolink

Laolink is the first online discussion operated in Lao language on the issues of rural development in Laos. The email group is established in May 2007 using Google Groups which is a free service of Google. The objective of this group is to provide up-to-date information and a mechanism for people to share their opinions on issues relating to rural development in Laos.

Because the system use Google Groups, it took less than an hour to set everything up. The service comes with everything needed for general management of the discussion, for instance: list of all members, archive of all discussed topics and comments, statistics, file space and a 'pages' section. The system also allows ordinary users to configure their membership while the owner of the group can fully manage messages and membership options.



There are now over 1,000 members of Laolink, coming from government, donor agencies, international NGOs, local Non-Profit Associations, private sector, students and other interested persons. Over 4300 topics were discussed during the first 2 years and a half. The most active members in the group are always from educational institutions, NGOs and private sector, while government officers prefer reading messages rather than showing their opinions.

A survey showed that members were very happy to receive information, hear other people comments and share their own opinions on their topics of interest. The information helped them to keep up with the development dynamic and emerging concerns.

In response to the success of Laolink, new online communities have been formed such as LaoLandInfo (a group on land and natural resource management), LaoUbuntu (a IT group on ubuntu program), Lao Youth Network (a group of over 10 youth centers in Laos) and LaoSHEL (INGOs in Laos on social, education and health issues), etc.

5. Lessons and issues

5.1 Local language/local materials

The use of ICT has taken off in Laos only during the last 10 years, and many technologies and services are still based in Foreign languages. In fact it is only in the last 6 years that there has been web-compatible font for the Lao language. Laolink and Lao44 focus on local language information and communication in order to take advantage of these new developments. The systems have been benefiting a broad audience, especially those who can only speak Lao language. The key lesson is that information services should be suitable to the target audience, and using local language is a must.

5.2 use of open source systems and meta-data standards

Below is a table of comparing Lao44 and LAD repositories. Both are built on the use of open source data and meta-standards which ensure that systems are open to modification by all users. In the case of Lao44 it uses the Joomla open source Content Management System whereas LAD uses the open source FAO

AGRIS system. Both systems have benefited from using open source systems in that they were built relatively quickly and with support from others (rather than building by themselves).

An interesting issue relates to the role of meta-data standards. In the case of Lao44, it is designed using minimal 'meta-data' which takes very little time for data entry and system maintenance. This makes it very easy for users to add in their own information with minimal training or support; like other web2.0 technologies it is intuitive. In the case of LAD, the AGRIS meta-data standard takes training and a while to understand. A lot of time was spent on training "LAD staff" to index and catalogue information. While many organizations provide information, few have the human resources to invest in training for LAD.

Area	Lao44	LAD
Established	November 2008	December 2004
Management	1 person/15 organizations committed to supporting it	2 staff/Officially part of CAFRI/NAFRI
Number of resources	1,500 documents (full-text) and 300 videos	2,200 records and 950 full-text documents
Standards	The system uses Joomla open source system.	The system uses AGRIS meta-data standards and open source mysql lite and php databases
Design	System was designed locally	System was adapted from Thai AGRIS system and updated by NAFRI staff and experts
Length of development	System design took less than two month	System took one month to adapt and install and one month to train people to use
Data entry	There are 4 'meta-data' fields to fill in. Take less than 2 minutes	AGRIS meta-date and experience in using AGROVOC and CARIS key words. Take generally 30 minutes to enter all data
Approval	Approved by individual administrator with no government affiliation	Approved by CAFRI management which can take time
Sources of information and data-entry	Open for public to upload documents	Not open for the public to upload documents but organizations can upload their own information and public can send in

5.3 Knowledge sharer/champion

In any information system, it is very important to have at least one committed person in an administrative position. This person, who must have a 'sharing attitude', plays an essential role in the maintenance of the system. Interestingly, Lao44 and LAD have taken different routes.

For Lao44, the site is run and maintained by one committed individual working at LEAP. Many different projects and organizations have contributed their own information and are actively supporting the system, but this individual has acted as a catalyst, coordinator and 'champion' for the system. LAD has gone the organizational route and institutionalized the data system within the NAFRI Library. This took many years and it was only after 3 years of operation that two staff were officially assigned to manage the LAD system.

Both arrangements are valid and show a shift in how information is shared and created. LAD can be seen as the traditional, institutional repository where information is stored centrally by one group for use by another. Lao44, on the other hand, is an open system in which everyone can contribute, regardless of their organizational affiliation.

In the case of Laolink, the moderator plays a crucial role in terms of making sure the discussions are focused, while also facilitating exchanges across a wide range of people and topics. There have been attempts to get government staff participation in this process but it has been difficult to train and get

active participation of government staff as moderators, possibly because this is seen as a 'risky' position to be in.

5.4 Sustainability

Lao44, LAD and Laolink depend greatly on the champions and this can have a negative affect on sustainability if the champions are gone. However, the following factors help to reduce the risks:

The use of open source standards and a network approach has enabled all three systems to develop a sustainable model which should see them through the coming years.

Laolink uses Google Groups which is free and just requires the work of a moderator. For Lao44 uses Joomla, and therefore the costs for maintaining and upgrading are very low and only include the server space. A number of NGOs, projects and local associations are interested to support Lao44 in the future so associated costs could be low. In many ways, Lao44 takes advantage of the digital commons as a "A space which is neither dominated by commercial interests (market driven), nor monopolised by the state...active public participation is a distinctive characteristic of the Public Domain 2.0. The public in part determines the design and content of this new public space." (Kluitenberg 2009).

For LAD, the system is government run. Costs for server space are met by NAFRI and staff time is paid by the government. In this sense it should be sustainable over the long-term but will rely on interest and commitment from NAFRI and the government priorities. Upgrades in the future could be paid by development of special projects. In addition, the partnership with FAO AGRIS and Kasetsart University, Thailand can assist in upgrading capacity and keeping innovation within the system.

5.5 Approval

In all three instances, formal government approval was not sought. Although the systems were developed with some involvement of government institutions, they were installed on the web where there is less control than traditional media. However, the government has recently indicated that it may try to gain more control over the web and digital media. In a local newspaper dated 1st March 2010, the Director of the Information and Culture Department of Khammouane province stated "We are tasked to inspect and manage website content, but we don't seem to have the right to instruct website owners what they should or shouldn't advertise, or what should be removed from their websites" (Vientiane Times, 2010)

Lao44 is run through a coalition of organizations and projects. Approval has not been requested because the system shares information that has already been published through other channels. It is unlikely, however, that approval would have been given if it had been requested, since no one from the government would have taken the risk of allowing something like this to happen. But once it was established, the government has never expressed any opposition. Indeed, all government officers, including the Minister of Agriculture and Forestry, appreciate the system very much due to the usefulness of the information.

Laolink is run by Agricultural Information Management (AIM) Working Group, consisting of staff from Government organizations. Like Lao44, official approval has never been sought for Laolink. There have been some negative feedback from upper-echelons within the government regarding certain topics (corruption, land issues, religions and political criticism) but for the most part, it is recognised that keeping the debate alive is a better strategy than trying to shut it down. It was recommended by the government to have a better control on the information posted to the group and better screening of member's comments.

For LAD, there was a concern that if formal approval to become an AGRIS centre and formal approval for the translation of Lao AGROVOC was sought, NAFRI could be turned down and then they would

have to shut down the whole system. LAD is now seen as a main-stay at NAFRI and the Lao AGROVOC received official approval only after it was up for a year and feedback was sought.

6. Conclusion

The use of web 2.0 has been proving successful for information and communication in Laos. The systems examined in this article have not reached rural areas, but are having an impact on national development by improving the capability of people working for donor agencies, research institutes and NGOs.

These systems are also contributing to the development of civil society, by creating a public space for knowledge-sharing and debate that was previously lacking in Laos. Opening access to information and communication through the use of ICT using alternative systems provides people with choices and unlimited access. The increased availability of information services and materials in Lao language has particularly helped increase the contribution of local citizens in the development process.

In the two years since communication experts in Laos produced the Dongdok Statement on Access to information for Development, considerable progresses have been made through a combination of individual commitment, open source software, and the use of the global commons. Consequently, it is to be hoped that Laos will get a higher rating in future indices of freedom of press.

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