

LOCAL-COMMUNITIES INSERTION NETWORK PARA AMERICA LATINA: THE LINK-ALL SYSTEM

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Abstract (EN)

Implemented under the **@lis Programme** of the **European Commission**, **Link-all** is a pilot project aimed at helping **remote communities** in Latin America to secure **sustainable development** through the introduction of **advanced information and communication technologies**. It focuses on three (3) sectors, namely **cultural heritage, crafts and eco-agro tourism**, which are complementary and strongly linked to remote, rural areas. The overall objective of the project is to strengthen and integrate local activities by building strong synergies between these targeted sectors, while fostering the preservation of the environmental, the cultural and historical legacy of the local communities.

The objectives of the project are implemented through the creation and operation of an innovative knowledge based B2B IT platform capable of enacting “environmentally friendly sustainable development” in a Latin American context, in order to aggregate the natural, cultural, and human resources of remote communities.

The Link-all platform includes tailored and integrated, state-of-the-art IT tools that provide a range of key e-inclusion facilities strengthening the integration of local development activities.

Networked demonstrators are being deployed in selected areas and the Link-all platform supports

an infrastructure covering a wide range of “field connectivity realities” faced by the Latin America remote communities via the Internet. Training activities are currently underway in the selected communities a coherent business framework is being elaborated. The Link-all Project started in October 2003. Its’ duration is three (3) years.

Keywords: ICT, Latin America, e-inclusion platform, culture, remote communities, crafts, eco agro tourism

Résumé (FR)

Soutenu par le **programme @lis de la Commission européenne**, le projet pilote **Link-all** vise à aider les **communautés isolées d'Amérique latine** à soutenir leur **développement durable** par l'introduction des **nouvelles technologies de l'information et de la communication**. Le projet s'adresse aux trois secteurs clé de la **culture**, de **l'artisanat** et de **l'éco-tourisme**, domaines complémentaires et fortement liés aux zones rurales isolées. L'objectif principal de ce projet est de soutenir les relations entre ces secteurs afin de renforcer et d'intégrer les activités locales tout en préservant l'héritage culturel, environnemental et historique de ces communautés locales.

La réponse à ces objectifs initiaux a été apportée par la création et le développement d'une plate-forme technologique innovante B2B, capable de favoriser dans un contexte latino-américain un développement durable respectueux de l'environnement par le regroupement des ressources culturelles, naturelles et humaines.

La plate-forme Link-all dispose d'outils technologiques de pointe adaptés aux spécificités technologiques, sociales et géographiques du projet qui offrent un large éventail de services clé pour l'inclusion électronique et le renforcement du développement local. Des sites pilotes en

réseau ont été déployés dans des zones sélectionnées, et la plate-forme Link-all s'appuie sur des infrastructures variées qui répondent aux différents besoins des communautés locales d'Amérique latine en matière de connexion à Internet. Des activités de formation sont actuellement menées dans les communautés locales participantes et un cadre de développement commercial cohérent est en cours d'élaboration. Le projet Link-all a commencé en Octobre 2003 pour une durée de trois (3) ans.

Mots clés: TIC, Amérique latine, inclusion électronique, culture, communautés isolées, artisanat, éco-tourisme

1. Introduction

Latin American countries are facing the challenge of bringing rapid, efficient and equitable diffusion of Information and Communication Technologies (ICTs) into their economies. This is particularly true for remote communities and SMEs therein, which are more vulnerable and face a number of obstacles due to their family business structure, lack of resources and public support, “isolated” working environments, limited access to information and little or no ICT infrastructure. Crafts and tourism SMEs and cultural actors have always played an important economic and social role in Latin American countries and the substantial economic impact of these sectors has long been recognized.

Implemented under the @lis Programme, Link-all is a pilot project based on the premise that the introduction and diffusion of advanced ICTs in the targeted sectors of crafts, eco-rural tourism and cultural heritage, can play an important role in facilitating and supporting local, sustainable development.

Link-all aims to assist in the uptake of innovative IT practices, to support collaboration, promote exchange of experience and transfer of know-how and improve related skills in the targeted sectors of crafts, eco-rural tourism and cultural heritage in order to help remote Latin American communities secure a sustainable and environmentally friendly economy, relying on their local natural, material and human resources. The Link-all platform will include tailored and integrated, state-of-the-art IT tools to provide a range of key inclusion facilities strengthening the integration of local development activities. Networked demonstrators will be deployed in selected areas and communication facilities including satellite coverage and wireless applications will be provided. Training activities will be implemented and a coherent business framework will be elaborated.

The Link-all Project started in October 2003. Its' duration is three (3) years. This paper presents the methodology employed by the Link-all Consortium in the Project in order to support the uptake of new technologies by remote local communities in a sustainable and integrated context, the basic design and functionalities of the Link-all platform, as well as the challenges, problems and achievements of the Consortium to date.

2. Objectives

The strategic objective of the Link-all project is to help remote communities in Latin America to secure sustainable development based on the integration and promotion of activities in three (3) targeted sectors, crafts, eco-rural tourism and culture, with the assistance of advanced information and communication technologies (ICT).

The project intends to strengthen and integrate local activities by building strong synergies between the crafts, eco-rural tourism and cultural sectors, while fostering the preservation of the

environmental, the cultural and historical legacy of the local communities. A natural activity chain, involving “local products – creation of quality handicrafts – ecological, alternative and cultural tourism – heritage valorisation” will be fully supported. It will enable these different sectors of activities to benefit from one another, to reach a high level of comprehensiveness, to reinforce local identity, and above all to improve quality of work and life in the local communities.

To this end, Link-all implements an innovative knowledge based B2B IT platform capable of enacting “environmentally friendly sustainable development” into a Latin American context, in order to aggregate the natural, cultural, and human resources of remote communities.

More specifically, the objectives of the Link-all project include:

- providing remote communities with a unique opportunity of joining the information society, through a set of facilities, services and functionalities, especially designed for local SMEs, organisations and key actors in the crafts, eco-agro tourism and cultural sectors to engage in value added activities.
- promoting an integrated and locally grounded economy chain for remote communities based on a strong local identity, leveraging local natural, human and cultural resources.
- enabling and facilitating the successful insertion in the global market of remote communities by developing a trans-national EU-LA cooperation network among craft, eco-agro tourism and cultural actors in an environmentally and culturally aware context.
- offering actors in the targeted sectors access to a full range of best practice experiences in Europe and Latin America, and increasing their ability to collaborate together in order to build synergies between the targeted sectors.

3. Methodology

Link-all encourages electronic inclusion, sustainability, global market insertion and intersectoriality. It seeks to achieve the electronic inclusion of Latin American remote communities, as well as the products' commercialization in the eco-rural tourism, culture and crafts sectors through an integral and combined offer; it seeks to defend and foster the heritage and the cultural identity of the remote communities where it operates.

3.1 A Wide Range of Instrumental Actors and Activities

The Link-all integrated “craft-agro-tourism-culture” concept relies on the participation of a range of instrumental actors, carrying out focused and well-defined activities. Three categories of key actors supporting various activities have been identified and are being involved in a collaborative context:

- business operators undertaking promotional / exploitation activities
- catalytic actors offering the needed level of organisation and infrastructure
- local producers with the skills and resources required for the production of products and services

Actors from all these categories are involved in the Link-all System design, content provision, deployment, testing and training activities. In addition, Link-all aims to involve local and national political actors who are able to support the remote local communities by improving policies that facilitate their connectivity or encourage local entrepreneurship.

3.2 An Appropriate and Expansive Geo-Thematic Demonstrator Coverage

To secure an expansive coverage of the many different contexts of Latin American remote communities the Link-all System will be deployed in pilot demonstrators in Costa Rica, Colombia, Brazil, Uruguay, Argentina and Chile. By doing so, the Link-all sustainable

development model and the corresponding IT environment will be validated in an operative context, and expanded to other regions of Latin America, with limited adaptations required.

3.3 A Progressive and Integrated Approach Focused on the Local Communities

The Consortium believes that the success of the Link-all project lies in an integrated and ascendant approach that places the local communities and their needs at the centre of the process. Therefore, the functional specifications of the Link-all System are based on extensive user requirements survey, an initial working prototype is being deployed in the local communities, populated with content and then tested. The Link-all Partners selected a “train the trainers” methodology, by selecting suitable candidates in each local community who are being extensively trained in the use of the Link-all system. These trainers will further train users as part of training courses organized in the local communities.

4. Technology Description

The transformation of the Link-all integrated “craft-agro-tourism-culture” concept into an operational environment requires addressing the specific needs of the targeted communities.

The Link-all platform serves the integrated “sustainable development” concept by implementing an enabling IT environment capable of providing catalytic “communication”, “collaboration” and “insertion” means. An approach hiding the software complexity whilst providing dedicated interfaces and functions to the different actors has been implemented.

State-of-the-art background technologies have been used and tailored to provide the needed range of integrated services.

The Link-all platform incorporates a range of IT tools and facilities in support of the targeted sectors that address the needs of business actors (for finding relevant products and services and

for packaging commercial offers), of catalytic actors (for generating educational, promotional and certified content) and of local actors (for exchanging expertise, securing financing and trading their production).

To support all the above-described characteristics the Link-all System architecture is divided into four layers incorporating a range of integrated modules and services as presented in the following figure [1]-[6]:

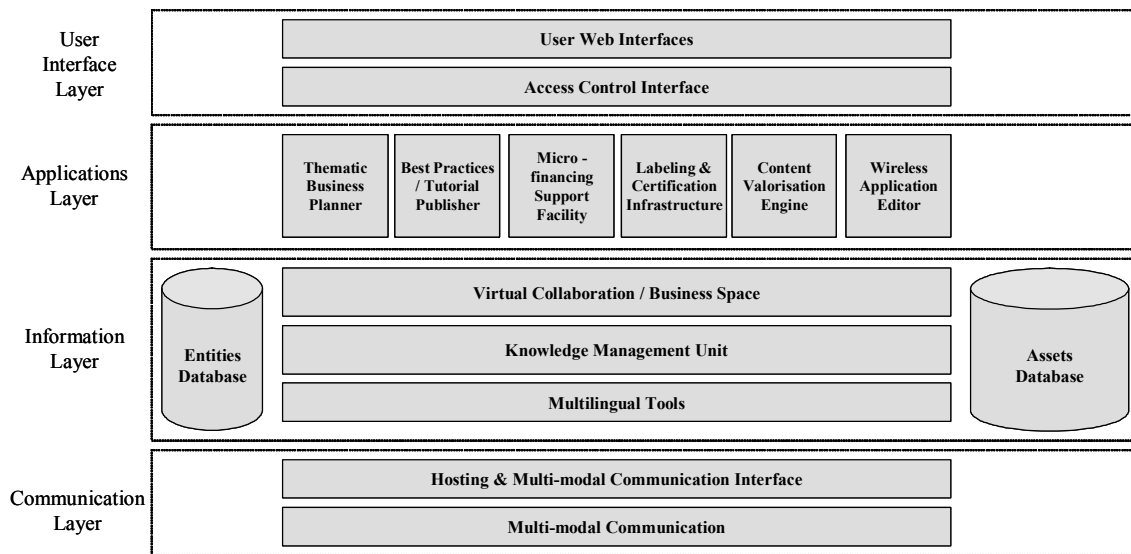


Figure 1: Core Applications of the Key Actors

The core concept of the Link-all layered architecture is centred around providing the most appropriate facilities to each of the Link-all key actors and of securing a full integration of the different services needed by the different actors. At the centre we have a content and knowledge management system where the best practice, the expertise, the products and services description of the different Link-all communities are deposited and processed. A set of tools is then provided to the local actors in order to allow them to exchange experiences, to describe their products and services, to enter into e-business activities and to secure micro-credits. Another set of tools is

provided to the catalytic actors enabling them to promote, to valorise and to certify the local communities cultural and production resources as well as the relevant educational and best practice content. A third set of tools is provided to the business actors enabling them to look for relevant products and services, to compose commercial offers and to manage the underlying eBusiness logistic. All these facilities are accessible through a wide range of communication means, such as telephone lines, wireless telephony, satellite and radio. The aim is to reach and interconnect even the most remote areas.

The figure below shows the Link-all platform concept and main facilities [1]-[6]:

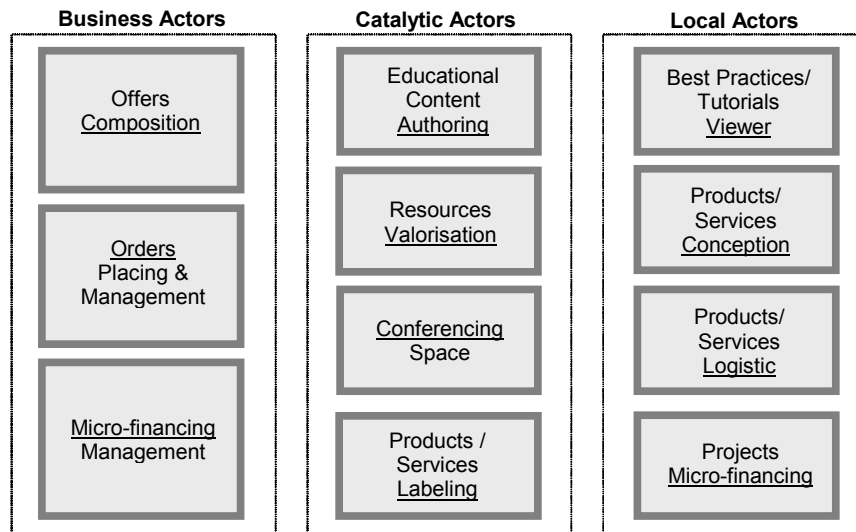


Figure 2: Core Applications of the Key Actors

State of the art technology has been integrated into the Link All platform such as:

- A knowledge management system couple with an advanced linguistic module enabling multilingual search, multilingual key concepts extractions and multilingual summaries.
- A virtual reality environment for content promotion, including virtual visits though panoramic images, 3D exhibition spaces and scenarised projections.

- A labelling and certification environment based on a PKI (Public Key Infrastructure) capable of associating legal certificates to offered products and services and of watermarking critical multimedia assets.
- An integrated e-logistic environment capable of presenting products and services, of generating business offers, of issuing orders, and of processing orders.
- A multi-modal communication environment capable of supporting PTSN / ADSL, GSM, Satellite and Radio connectivity.
- A dedicated integration architecture, based on a federator concept, has been conceived to support the wide range of above listed technologies and applications. Interoperability, modularity, services distributions, flexible access rights configuration have been the key consideration.

5. Developments

Link-all commenced in October 2003, with the objective of developing an innovative knowledge based B2B IT platform capable of enacting “environmental friendly sustainable development” in remote communities in a Latin American context.

Towards this goal and after twenty-two (22) months of the Project life, a Conceptual Framework, conceived to help the Partners follow an “integrated” sustainable development approach through the various phases of the Project, has been elaborated, the user requirements have been analysed, the functional specifications defined and the System architecture specified. The basic functions, tools and services have been defined and are under development. A prototype of the Link-all System has been elaborated and is currently being tested by the Project Partners and the local communities.

In the meanwhile, the local communities participating in the project as pilot demonstrators have been identified by the Latin American Partners, based on their socioeconomic characteristics and their ability to respond and participate to the Link-all offer. A thorough survey of the connectivity solutions available for these sites has been conducted and infrastructural installations are underway.

The selection of local communities reflects the targeted sectors of the Link-all Project and the diversity of local communities in terms of location, level of development and inclusion specifics. It is worth underlining that most of the local communities are deemed mature enough to take part of the Link-all Project and benefit directly from the creation of the Link-all System. A synthesized presentation of the ten (10) communities selected is included in the table below.

Name of the local community	Location	Targeted sector	Socio-economic characteristics	Strategy and Initiatives with regard to local development
Manzano Amargo	Patagonian region - Argentina	Eco rural tourism Cultural heritage	Remote community Weak economy Andean Cordillera	On-going work on the definition and recollection of its natural and cultural heritage
Huinganco	Patagonian region - Argentina	Eco rural tourism Cultural heritage	Small community made up of Chilean descendants and inhabitants of native-Spanish origin Andean Cordillera On-going infrastructure works	Cooperation between authorities and local organizations Definition of a strategy for the promotion of the natural and cultural environment
Santa Rosa de Lima	Santa Catarina State - Brazil	Eco rural tourism	Good accommodation capacity	Strong cooperation between authorities and population Strategy for development based on the eco tourism sector

				Cooperation LA, EU tourism related organizations
Tabuleiro	State of Minas Gerais - Brazil	Eco rural tourism	Old mining region facing economic difficulties	Work on the promotion of natural, historical and architectural heritage
Torrão do Matapi	State of Amapá - Brazil	Eco rural tourism	Strong afro-descendant traditions Amazonian environment	Tourism mainly based on the promotion of the afro-descendant related heritage
Melipeuco	Region of Araucania - Chile	Eco rural tourism	Pehuenche native population Ecoregion of Bosques Templados Valdivianos	Small tourist oriented offer provided by the local population
El Tambo	Region of Cauca - Colombia	Craft	Tradition of silk production Crafts Cana Guada related products Operation of telecenters	Local crafts cooperative
Abangares	Guanacaste - Costa Rica	Cultural heritage Integrated tourism	Old Gold Mines Facing economic crisis Eco-museum	Try to develop a new tourist offer integrating the potentialities of the eco-museum
Villa La Paz	Department of Colonia - Uruguay	Eco rural tourism	Isolated village with a number of sites of cultural and architectural interest Thematic cultural routes	Initial promotional activities developed Concern about dangers of mass tourism
Villa Tambores	Departments of Tacuarembó and Paysandú - Uruguay	Crafts Eco rural tourism	Economy mainly based on traditional activities Eden Valley	Women's crafts cooperative

Table 1: Synthesized presentation of the Link-all Communities

Finally, the basic principles governing future commercial exploitation of the Link-all System have been agreed-upon and a detailed exploitation/business plan is being drafted.

6. Results

The Link-all objectives will be achieved and embodied in the Link-all System, which will be fully operational in October 2005. The main target groups are: on the supply side: Latin American local producers in the targeted sectors (directly or via their representative catalytic actors) as well as Latin American local communities, and on the demand side: business actors (Travel Agencies, Tour Operators, crafts-related buyers, etc.).

To date, the work with the local communities shows a tangible interest of the local communities for the Link-all Project and the System to be deployed. Local catalytic actors and stakeholders (authorities, NGOs, citizens' groups) have expressed their willingness to promote the System to local actors (producers, tourism providers, cultural actors).

Preliminary contacts with a number of European and international business actors mainly from the eco-tourism sector have confirmed that they are willing to explore future avenues of collaboration and propose to follow the Link-all System developments in order to facilitate and secure future association/integration with similar or complementary platforms.

User Partners working directly with the local communities have recorded the expectations of local communities, who recognise the Link-all project as an original way to support their local development and promotion in Latin America and internationally. The User Partners have undertaken an important commitment and responsibility to these local communities and are proceeding with care in order to ensure a reasonable balance between the expectations of the local communities and the final results of the Link-all Project.

7. Business Benefits

The Link-all Consortium recognizes the importance of setting early foundations for the self-sustainability of future collaboration of the Project partners in order to secure "commercial survival" of the resulting network of operation of the Link-all System. Therefore, in addition to the technical development work and the technological methodologies and practices, the project focuses on a coherent sustainability business analysis, based on the collection and analysis of market-oriented data, forecasts and trends in the crafts, eco/rural tourism and culture sectors and IT markets in the Latin American region, as well as profiles of competitors and potential competitors. A detailed exploitation/sustainability business plan will cover all issues related to the future operation of the Link-all System with a view to maximizing benefits for all actors involved therein.

The preliminary exploitation scenario elaborated to date envisages a central operating company for the overall Link-all System, and "franchisees" to supervise its' operation in distinct territories (countries or regions) who will be responsible for the supply/content side of the System (locating local communities, producers and listing them and their products).

Sectoral specialists will join the System as necessary to act as "catalytic actors" and organize the offer. Business partners in Europe will be sought to promote the System to their respective business communities. Revenues will be mostly transaction-based and rely only partially on membership fees. Sponsorships and further financing will also be sought.

Additional market validation activities and investments are necessary to bring the Linkall System to full market operation. These are being carefully planned. Business alliances in the targeted

sectors currently being pursued are considered to be crucial in this context. A more complete version of the business plan will be available in December 2005.

8. Conclusions

The Link-all environment will contribute to the preservation and promotion of the cultural heritage of the Latin American region and increase the awareness-level regarding environmental issues. The reinforcement of synergies between the targeted Craft – Agro Tourism - Culture sectors will strengthen and integrate local activities while fostering the preservation of the environmental, cultural and historical legacy of the local communities.

The Link-all System will provide a range of key e-inclusion facilities strengthening the integration of local development activities. Communication facilities including satellite coverage and wireless applications will be provided. Aspects such as best practices /tutorials - integrated quality labels - cultural valorisation tips- integrated promotionmechanisms– project collaboration and financing opportunities will be included, supporting a sustainable and environmentally friendly local economy chain. As a result, the Link-all System will support the access of the local communities to relevant collaboration facilities and sources of information, while at the same time making these communities and their products both visible and accessible to global business actors.

The System will be fully operational in October 2005. Future activities will focus on market validation, commercial deployment, marketing and business sustainability. The main difficulties stem from the variety of technological, cultural and business realities in the targeted communities. A clear vision for the end results of the Project, close collaboration between user and technological partners throughout the system development phase and early involvement of

key business actors are considered essential for the success of the current as well as similar projects. More information available at www.link-all.org

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