FINAL REPORT FROM THE STUDY OF AND RECOMMENDATIONS FOR THE FUNCTIONING OF THE DIRSI NETWORK

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Introduction

This document is the final report of the *Study of and Recommendations for the Functioning of the DIRSI Network* (Regional Dialogue for the Information Society Network). The study was done by Walter Lepore, who was contracted as an independent researcher by the Institute of Peruvian Studies (*Instituto de Estudios Peruanos*, IEP).

The purpose of the evaluation was to carry out an assessment of the Network, analyze alternative forms of organization and draw up a series of recommendations for enhancing its operation. The specific objectives of the study were aimed at enhancing the DIRSI Network's operation in the following areas:

a) Formal and normative aspects;
b) Decision-making process;
c) Interaction among members;
d) Achievement of results.

The first report outlined the evaluation methodology and established the areas, sub-areas and criteria for analysis of formal/normative aspects and mechanisms for interaction within the network. These are shown in the following table:

TABLE 1. Areas, sub-areas and evaluation criteria

Evaluation Area		Evaluation sub-area	Evaluation criteria
Formal and normative aspects		Organizational structure	Degree of integration (formal/informal)
		Types of exchange (rules)	Scope of interaction (bilateral/multilat.)
		Means for ensuring compliance	Coercive procedures
			Norms and ideologies
Mechanisms for Interaction	Decision-making process	Formulation of goals & objectives	Content of process
		Participating actors & linkages	Quality of interconnections
		Organizational arrangements	Quality of structure
	Institutional level	Stakeholders & ideas	Openness
		Representation of interests	Democratic legitimacy
	Operations level	Achievement of results	Efficacy

This report presents the final results of the study. The first section analyzes formal and normative aspects, providing an assessment of the DIRSI network in light of similar cases elsewhere. It is important to keep in mind the importance of international

experiences, as they complement the analysis of the network's particular characteristics by indicating DIRSI's "relative position" in comparison to other networks working in similar situations and contexts.

The second section presents the analysis of the mechanisms for interaction and concludes with an overall assessment of DIRSI's institutional, operational and decision-making processes. The last section offers recommendations for enhancing the functioning of the network in the following areas: 1) organizational structure; 2) mechanisms and criteria for membership; 3) communication and interaction. The study concludes with an appendix that contains the sources of information used for the assessments and recommendations.

1. Formal and normative aspects

The first step in analyzing a network, in this case DIRSI, is to understand what it does, when it was created, what its objectives are and how the network has developed since it was started. Beginning with DIRSI's creation and the changes it has undergone over time allows for a better understanding of its current organizational structure, approaches and rules, as well as the identity that the network has developed and the influence of members and external stakeholders on the network, its decisions and activities.

Subsequent analysis focuses on the most relevant aspects of each sub-area being evaluated. The procedure is relatively simple. The first step is a description of DIRSI's formal and normative characteristics, using information from internal documents and the network's Web site. Formal information is complemented with interviews with members of the network. Second, there is a comparison with four cases elsewhere in the world to identify the degree of DIRSI's consistency, similarity or difference in formal and normative aspects. Information about the other groups was obtained from their Web sites and email interviews. Finally, there is an overall assessment of this area of evaluation.

1.1. What is DIRSI?

DIRSI is the Spanish acronym for the Regional Dialogue on the Information Society. It originated in 2004 during a meeting in Montevideo sponsored by the IDRC, which brought together a group of researchers to prepare brief studies of regulatory challenges for the expansion of information and communication technologies (ICTs) in Latin America. The original group consisted of nine researchers from different countries in the region. DIRSI was formally founded in 2005, during a meeting in Rio de Janeiro (where four new members joined the original group), and in September of that year the development of a first-round research proposal was completed.

DIRSI was initially conceived as a purely virtual network, with no specific headquarters and with coordination, production and management decentralized among members in various countries in the region. Later, to simplify management and make it more agile, the decision was made for one institution, the Institute of Peruvian Studies (*Instituto de*

Estudios Peruanos, IEP) to serve as administrator and manage the budget. More details about organizational aspects will be discussed in the next section, but it is important to note that within the network it is recognized that DIRSI is still "in the process of formation" (Network by-laws, 2007).

Formally, DIRSI is now "*made up of academic researchers in various disciplines from Latin America and Caribbean countries who are dedicated to studying the challenges posed by the development of the Information Society and public policy problems and solutions. The members of the network focus on producing knowledge that facilitates discussion and the design of policies that promote the inclusion of all sectors of society in the benefits of the Information Society"* (Network by-laws, 2007).

DIRSI's main objectives are to engage in high-quality research in this area and foster dissemination of the results. The network's main areas of interest are ICT supply and demand (definition and measurement of digital poverty), universal service models for disadvantaged sectors and regulation of markets to benefit the poor population in the region.

In accordance with these objectives, DIRSI carries out five main activities: 1) evaluation of policies; 2) critical analysis of the literature; 3) research; 4) dissemination of results to key stakeholders; and 5) training of young researchers. Funds to carry out these activities come almost exclusively from the Canadian government's *International Development Research Centre* (IDRC), one of the first development agencies to adopt ICTs as a tool for finding practical, long-term solutions to the social, economic and environmental problems faced by emerging countries. DIRSI is one of various "knowledge networks" that IDRC has encouraged in its support for the quest for the knowledge necessary to ensure that innovations in the area of ICTs will contribute to human development and a higher standard of living in the region.

1.2. Organizational Structure

To understand DIRSI's organizational structure, it is helpful to focus on two aspects: 1) components of the network (functions, responsibilities and obligations of the various types of members); and 2) membership mechanisms and criteria. The interrelationship between these two aspects explains not only how the different parts of the network are connected internally, but also how it captures crucial human resources for its survival and expansion.

The formal structure that organizes the various DIRSI activities consists of the following members: an Assembly of Members, a Steering Committee, an Advisory Committee, Associate Members, a Facilitator and an organization responsible for managing resources. The formal aspects of each of these components are explained below.

The Assembly, which consists of all of the researchers who are members of the network (known as Plenary Members), holds an ordinary meeting every year (in person or virtual) and occasional extraordinary meetings. The main functions of the Assembly are

to define strategic guidelines for action, including priority issues for research, in order to allocate research funds, and activities related to publicizing and developing the network. The members of the Assembly are also responsible for electing the DIRSI Steering Committee (*Comité Directivo*, CD).

This body is chosen for a two-year term and can be re-elected. It consists of three members whose responsibilities are to implement the decisions of the Assembly and direct the activities of the Network. Each member of the Steering Committee has specific responsibilities. One is in charge of academic aspects and the publication and dissemination of information about the network's activities (coordination of knowledge production); another is responsible for external relations and for representing DIRSI (coordination of institutional relations and development); and the third is responsible for administrative aspects (coordination of communications, dissemination of information and administration).

For operational and administrative activities, the Steering Committee names a facilitator, who is in charge of implementing the network's decisions. The facilitator's main function is to stimulate and manage interaction among the members. Network funds are managed by an organization that has appropriate experience and financial backing, the IEP. Its function is merely administrative, as it serves as a repository for funds, manages resources under the supervision of the facilitator, handles payments and contracts, and reports back to the Steering Committee on the handling of funds.

The Advisory Committee consists of members who are well known internationally in the network's area of interest and who come from academia, the private sector, government and civil society. The members of this committee must be nominated and unanimously approved by the Assembly of Members. When called on by the Steering Committee, the Advisory Committee is expected to provide advice and assistance to the network and its members in areas related to research, relations with other networks and fundraising.

In 2006, the Assembly also decided to create a new category, Associate Member. Unlike Plenary Members, Associate Members are not part of the Assembly, so they are exempt from the responsibilities and privileges granted to Plenary Members in the network's activities plan.

The following tables show the main tasks of each component of DIRSI, according to the network's internal documents. Table 2 shows the responsibilities of the members of the Assembly, Steering Committee and Advisory Committee, as well as those of the network's operations and administrative areas. Table 3 shows the specific functions of each area of coordination of the DIRSI Steering Committee.

TABLE 2. Responsibilities of network components

AREAS
Plenary Members
Participation in knowledge production activities
Participation in dissemination of information and promotional activities
Participation in working groups and ad hoc commissions
Coordination of research in country of residence
Production of national reports for each project
Contracting of research assistant
Development of field instruments and discussions
Publicizing the network's work at international meetings
Supporting the network's growth
Steering Committee
Implementing decisions of the Assembly
Directing organizational activities of the network
Development of academic aspects
Publication and dissemination of information about activities
Development of external relations and representation of the network
Responsibility for administrative aspects
Advisory Committee
Providing advice and assistance to the Network
Guidance on priority research issues
Bridge building with other entities
Fundraising assistance
Assistance and guidance on strategic activities
Facilitator
Management of information generated by the group
Assisting with activities related to dissemination of information and publication
Web site administration
Expediting relations between members and administrators
Providing general logistical support to the network and encouraging participation
Organization responsible for managing funds
Serving as repository for funds
Managing resources under supervision of the facilitator
Reporting to Steering Committee on financial situation and management of funds

Source: Prepared by author

TABLE 3. Specific functions of the Technical Committee

AREAS OF COORDINATION OF THE EXECUTIVE COMMITTEE
Coordination of institutional relations and development
Coordinate relations with IDRC and funders in general
Identify and coordinate fundraising opportunities
Identify and coordinate opportunities for publicizing the network
Coordinate relations with Board of Advisors
Coordinate search for new members
Coordinate evaluation of internal work
Interaction with other networks
Coordination of communications, dissemination of information, administration
Develop operating plan for communication and dissemination of information
Maintain Web page
Manage database of visitors and users
Coordinate internal virtual discussions and communications
Responsibility for network's organizational memory
Organize network's historical archives
Identify events and vehicles for publication to disseminate outputs
Monitor and follow up dissemination
Promotion of the network
Organization of network meetings and events
Management of budget and spending
Coordination of knowledge production
Organize and supervise portfolio of network projects
Develop project timelines and delegate tasks
Monitor projects
Editorial work and manuscript review
Coordinate production of publications
Coordinate publisher relations and distribution
Identify opportunities for development of other sub-outputs

Source: Prepared by author

We will focus here on the second aspect relevant to an understanding of the network's organizational structure: DIRSI membership and membership criteria. According to the *Amendment to the Network By-Laws,* Plenary Members are selected according to the following criteria: 1) having an advanced academic decree; and 2) having a professional and academic track record that demonstrates their contribution to knowledge about regulation and public policy in DIRSI's area of interest in Latin America and the Caribbean. It is also important that the new members work in the region. They are invited to join after having been recommended by a Plenary Member. All new members must be approved unanimously by the Assembly.

The system for joining the network is relatively closed (DIRSI does not issue open invitations); potential members are discussed in the Assembly, according to criteria that seek high standards of production, quality and international recognition. To a great extent, new members join the network more because they are personally known and recommended by a particular member than because of a deliberate recruitment policy or because they had prior knowledge of DIRSI.

These requirements clearly favor a certain quality of production and research and help to solidify the academic profile that distinguishes the network.[1] Nevertheless, it must be remembered that in this region, the people who study ICT-related public policy, regulation and infrastructure are a relatively small and scattered group. Establishing requirements that are too strict in terms of quality and recognition could be a negative factor for growth in the number of network members and for their internal and external relations.

Associate Member is a new membership category aimed at professionals who work in DIRSI's areas of interest, but who do not reside in the region, as well as non-academic professionals who could contribute to specific network activities and young professionals who are in the process of joining DIRSI. Criteria for Associate Members' collaboration are less strict, because they have fewer privileges and obligations than Plenary Members. The activities, conditions and time frames for their participation are established in a project contract with the IEP.

So far, we have focused on formal aspects of the network (organizational structure and membership), taking a descriptive approach. The next step is to look at how DIRSI compares to similar networks elsewhere and determine whether it structural aspects are in line with international best practices. For this analysis, cases with different characteristics, but with certain similarities to DIRSI, were selected. We focused on structural aspects of each of the following research networks: 1) Research ICT Africa

[1] In this regard, one person outside the network said: "DIRSI has been particularly useful in this sense [increasing the output of academic research] with its large number of 'pure' academics who are focusing on ICT issues in South America" (sic).

(RIA!); 2) LIRNEasia, in the Asia-Pacific region; 3) LATN, in Latin America; and 4) the LIRNE.NET, which operates worldwide.

Since 2003, the RIA! Network has brought together research centers and researchers from academic institutions in 14 African countries who study issues similar to those of DIRSI: policy development and regulation of ICTs. The network is led by Alison Gillwald and based at the LINK Centre at the University of the Witwatersrand in Johannesburg, South Africa.

The LINK Centre is a leader in public policy, regulation and education in the area of information and communication in South Africa. In the case of RIA!, the LINK Centre not only is in charge of handling IDRC funding for the creation, development and evolution of the network, but it has also been the driving force behind this continent-wide initiative. As the network's nerve center, LINK handles administrative tasks, research and dissemination of information, acting as RIA!'s organizational headquarters. The center is responsible for sending out research proposals to be discussed at network meetings, handling the contracting or organization of experts for the design of common research methodologies, conducting training courses, and publication of materials. The organizational headquarters also handles communication tasks related to Web site development and maintenance; support for seminars, workshops, conferences and the electronic and print publication of outputs; coordinating and encouraging interaction among different organizations that study related issues in Africa and elsewhere in the world; and developing the first doctorate and Master's courses in Africa specifically in the area of communications and information.

One relevant aspect for this study is the degree to which activities are centralized in the LINK Centre. This offers the advantage of reducing administrative and operating costs for network operations, thanks to economies of scale and because the center engages in other activities related to RIA!'s areas of interest, giving it a certain degree of know-how. This centralization of activities has also positioned the center and the program director (who works in the network's organizational headquarters) as key reference points and guides for RIA!. The disadvantage of this type of network structure is that to operate efficiently, it needs a working group that is dedicated to it part time or full time and that has training in the various tasks; this implies greater material, human and financial resources. In administrative terms, one negative aspect that affects the LINK Centre and, therefore, RIA! is that funds are controlled by the University of the Witwatersrand (where the center is physically located), and there are sometimes problems in making payments in other countries or maintaining appropriate accounting systems. This has not occurred with DIRSI and the administration of funds in Peru.

Through its director and the funding agency, IDRC, RIA! has established relatively simple and lax criteria for membership. First, people who want to participate must be formally associated with a university. This is because RIA! seeks to build capacity; if it must hire independent researchers or consultants with no institutional affiliation, there is the risk that the accumulated knowledge will be lost when the person no longer participates in the network. The second criterion for belonging to the network is to pass

a “probation period,” which generally coincides with the duration of a project for which the person has been contracted. If the aspiring member is able to complete the project (i.e., final delivery of the research), he or she acquires full membership. According to the interviews, RIA! currently has too many members, which creates an administrative problem for the LINK Centre (more than a problem of who qualifies for membership). With regard to the network members’ background, broad and lax selection criteria have allowed researchers from various disciplines — not necessarily focused on issues of ICT policy and regulation — to participate in the network. This membership heterogeneity partly explains the need to develop common research methodologies and training courses. The goal is to develop common methodological and conceptual frameworks that allow for studies whose quality and scope are comparable.

The second international network whose structure we analyzed was LIRNEasia, in the Asia-Pacific region. LIRNEasia is a non-profit organization founded in 2004, based in Sri Lanka, which works in the area of ICT policy and regulation. The center is headed by a Board of Directors (six members) and has an international Advisory Committee. One of the characteristics of this center is that it was created with no institutional resources. Since its founding, it has focused on a specific issue and has maintained a particular point of view and a clear voice in the region, making itself known and developing its own identity. LIRNEasia is the result of a structure with a high degree of centralization around its leader, who is also the main driving force behind it. During this phase of formation and consolidation of the center, Rohan Samarajiva has been LIRNEasia’s intellectual guide and a key fundraiser, thanks to international recognition. In a second phase, LIRNEasia plans to open regional offices in various countries to decentralize communication and administrative activities, so as to operate more as a “virtual organization.” Part of the rationale for this decision was to give the center the time and space necessary to establish itself solidly during the initial phase as a focused, results-oriented organization, and free it from pressure to become a decentralized research network from the start, since that, in the words of one member, “would be to put the knife at its throat.”

It is important to note how this center developed. It began in 2004 with the full-time collaboration of two members, and for the first two years it had no formal structure and very little physical space. Today, more than 15 people work at the center part or full time, with the collaboration of five others who work in remote locations. This notable growth has allowed the center to engage in different types of ICT-related activities: research; academic output and publications; organization of and participation in forums, conferences and workshops; development of training programs; and consultancies. Thanks to this diversity of projects and activities, LIRNEasia is able to generate its own resources and diversify its funding sources. This has allowed it not only to acquire and develop infrastructure useful to the center, but also to attain greater financial and operational autonomy. As a result, LIRNEasia has more freedom to make decisions about and reach consensus on projects, activities and research agendas with its researchers, as it is less subject to conditions set by funders than similar organizations that depend exclusively on a single funding source.

With regard to membership criteria, LIRNEasia does not have "members" as such. Rather, it has a stable group of workers (full time or part time) who receive a salary for dedicating themselves to production, dissemination of information and/or administration. To implement projects, the center enters into temporary contracts with people who may belong to an organization, but who do not work full time with other organizations. These people are paid in accordance with their fulfillment of the terms of the project for which they have been contracted.

In the Latin American region, the case chosen for comparison is that of the LATN network. While this network focuses more on trade policy, its regional scope and aspects of its organizational structure are relevant to DIRSI.

LATN was founded in Buenos Aires in 1997 during a regional meeting on trade issues sponsored by IDRC. More than 180 organizations and individuals currently belong to the network.

Ten years after its founding, and having been financially supported from the start by IDRC, this interdisciplinary research network's headquarters are now at FLACSO/Argentina, whose international relations area is responsible for executive direction and administration. LATN's organizational structure consists of the Directors (physically located at FLACSO/Argentina and consisting of four members: the general director, general coordinator, project coordinator and publications coordinator), the Steering Committee (six members in five different countries in the region) and an international Advisory Committee of experts.

Initially, the network had only a central coordinating office at FLACSO/Argentina, made up of two directors and a full-time assistant who were responsible for management, operational and strategic activities. The tasks ranged from defining research priorities to avoiding "free riders" in the network; as a result, LATN was in the hands of a relatively small group of people (LATN, 2007). As the network expanded, governance mechanisms were modified to reflect the increase in the number of members and create a sense of belonging among them. The result is the current structure described above. It is important to note that decision making among members of the network has been decentralized and has become more democratic.[2] Nevertheless, like other similar organizations, LATN centralizes the functions of administration, coordination and dissemination of information at its institutional headquarters at FLACSO/Argentina.

Membership criteria are relatively lax, which has allowed the network to expand the number of members and achieve an appropriate mix of organizations and individuals interested in being involved in its growth. One basic requirement for LATN is that aspiring members have an interest in developing regional and national expertise (LATN,

[2] Thanks to its consolidation and expansion in the region, LATN has moved toward a decentralized organizational structure with semi-autonomous nodes in three other Latin American countries (Brazil, Peru and Costa Rica). Each node has a coordinator and an organization that serves as its headquarters, and has management and decision-making responsibilities.

2007). Aware of the difficulty of ensuring that all members maintain this constant interest, LATN opted for a membership structure that gives it greater adaptability. Like all developing organizations, LATN underwent changes in the makeup of its membership, which occurred informally and flexibly with no particular rules. The coordinators and members of the network determined that to increase the number of members and their contribution to the network, it was necessary to have broad membership criteria. In general, one basic requirement for becoming a member of LATN is to have contributed to the production of knowledge; it is also important for the aspiring member to have participated in the network in various ways (the most committed members, in terms of strategic, budget and administrative decision making, can be elected to the Steering Committee).

The last international case to be analyzed in this section is that of LIRNE.NET, a worldwide network. LIRNE.NET describes itself as a "strategic collaboration" between centers and networks — including DIRSI — that focus on research, training, dialogue and consulting on ICT policies and regulations. The network's governance system is co-managed by two of the member centers, CICT in Denmark and Comunica in Uruguay. The former is responsible for overall network management (under the direction of William Melody, founder and intellectual leader), while the latter is responsible for coordination of LIRNE.NET, and has hired a person especially for that task.[3] The coordination of activities is not limited to academic production, but also includes tasks related to publication (including organization and the translation of material), Web site maintenance and international events. Comunica is responsible for managing funds for tasks related to coordination.

LIRNE.NET's organizational structure consists of a six-member Steering Committee that includes one representative of each region where the network operates (that is, a member of DIRSI for Latin America, one from RIA! for Africa, one from CICT for Europe, and one from LIRNEasia), a member of Comunica and an outside adviser. Because LIRNE.NET is a network of centers and networks that already have their own coordinators and internal organization, the Steering Committee operates as a forum for discussing the direction of the network, reaching agreements and making decisions that the representatives then communicate to the centers in their regions. This process is key to designing research frameworks with a common vision that allows member organizations to collaborate worldwide.

LIRNE has no written rules or criteria for membership. It mainly seeks members who are willing to participate, whose academic profile is in line with that of the network and who are well known in their field of research. Prior knowledge (LIRNE.NET tends to bring in members who have done satisfactory work for it at some point) and the quality of the potential member's work are decisive factors in the selection of new members.

[3] Administration was initially handled in Denmark (activities were mainly centered in Europe), but as the network expanded worldwide, the decision was made to centralize these functions in South America.

At this point, it is helpful to summarize the main findings of this extensive section. The following table shows the main differences and similarities between DIRSI and the other international organizations analyzed, in terms of structure and membership:

TABLE 4. Organizational structure and membership of DIRSI and other organizations around the world

	Organizational structure							Membership	
	Governance mechanism				Operations			Membership criteria	Mechanisms for selection
	Steering Comm.	Members Comm.	Board of Advisers	Visible leader	Centralized administration	Centralized coordination	Centralized dissemination		
DIRSI	?	?	?	X	?	X	X	Strict (written)	Closed
RIA!	?	N/A	N/A	?	?	?	?	Lax (unwritten)	Open
LIRNEasia	?	N/A	N/A	?	?	?	?	Not applicable	Not applicable
LATN	?	?	?	?	?	?	?	Lax (unwritten)	Open
LIRNE.NET	?	X	X	?	?	?	?	Lax (unwritten)	Open

Source: Prepared by author

In general, like the other research networks analyzed, DIRSI's operation is supported by a relatively informal organizational structure. Its governance mechanisms, however, suggest a "hierarchical structure" in decision making and implementation of activities. The international cases show a moderate to high degree of formal integration in the design of their structure. DIRSI, on the other hand, has a moderate degree of integration because of the lack of an organizational headquarters, even though administrative and operational tasks are done by the IEP. We speak of a "moderate" range when the networks are made up of autonomous and interdependent members, and "high" when they are based on a bureaucratic administrative control structure.

1.3. Rules of exchange

In this section, we will analyze the rules that establish the type of exchange that occurs among members of DIRSI in the areas of production, dissemination of information and coordination, as well as in operational and functional matters related to the network.

The evaluation criterion for this sub-area is the range of bilateral or multilateral interaction (exchange). Theoretically, the former assumes stakeholders whose behavior is guided by selfish considerations and who are less concerned about the collective good; at the other extreme, multilateral exchanges encourage stakeholders to adopt collective behaviors and jointly define the interests of the group.

The inputs used for identifying the rules of exchange were the various types of contracts that DIRSI establishes with its components (plenary members, associates, Steering Committee members and some staff members involved in administrative and

operational tasks). The DIRSI network has two types of contracts for subsidies and services. The first is signed with members of the network (researchers), who receive payment for carrying out projects (for example, the *Mobile Opportunities* study required that a member be responsible for preparing reports in each country where the network operates). Under subvention contracts, researchers are individually "employed" by the IEP, which is the institution that receives the funds and is responsible for network administration and budget management. In general, the subvention contracts (which are based on Peruvian labor legislation) establish the objectives of the agreement, forms of payment, time frames for delivery of outputs and obligations of the parties involved in the contract (IEP and the researcher). The model for the subvention contract is practically standardized, with the main contractual variations (especially deadlines and forms of payment) depending on the terms of reference of the contract. In other words, differences in the form of the contract depend more on the type of research being done than on the researcher responsible for doing it, which assumes equitable treatment for the researchers who are contracted.

Although subvention contracts may apply to either Plenary Members or Associates, there are differences in the contractual conditions. Associate members have fewer responsibilities and privileges than members of the Assembly. Associates are also "invited" to collaborate in specific activities related to research, training or publicizing of the network. In each case, the conditions and time frame for the collaboration are specified (in a contract with the IEP). The most significant difference in contractual terms between Plenary Members and Associates is that researchers in the latter category are fined for late delivery (0.02 percent per day), a penalty not set for Plenary Members. The rationale for this differentiated treatment was not clear in the interviews that were carried out, although it was acknowledged that the main problems with compliance with subvention contracts has been the late delivery of research outputs by Plenary Members.

The other type of contract is used by the network for contracting services, particularly quantitative studies (data gathering), translation, Web site maintenance, publication of books and materials, and training or the purchase of tickets for researchers' travel. This type of contract is established with individuals or businesses that engage activities that support the network's administrative or strategic operations. As in the previous case, the IEP has model service contracts, and contractual conditions vary depending on the terms of reference and the type of service contracted.

The members of the Steering Committee are remunerated for their tasks. While the amount paid to the three coordinators has increased in recent years, interviews showed that it did not compensate for the actual amount of time they devote to the network. The amount of time the members of the Steering Committee dedicate to DIRSI is proportionally much greater than the remuneration they receive.

Studies published by IDRC (2007) about the networks it supports show that coordinators may be salaried, non-salaried or a combination. In general, most (80 percent) of the coordinators who receive no remuneration for their activities belong to

universities or academic institutions. Coordinators who are paid (who generally belong to NGOs or international organizations) tend to show a greater commitment to the network and dedicate more time to handling financial or administrative matters or coordinating research (IDRC, 2007). DIRSI might think of moving toward a model of exclusive dedication to the network, because as the interviews showed, the members of the Steering Committee are geographically scattered, belong to other institutions (whose activities are often given priority), and have other activities and obligations, which means that the time they can spend on activities related to network coordination is limited and irregular.

Finally, the staff members who engage in executive, administrative and general support tasks (the network's executive coordinator and administrative assistant) are formally contracted by the IEP, where their offices are physically located and where they work under the supervision of the coordinator of communications, dissemination of information and administration.

To gauge the range of interaction (bilateral or multilateral) among network members, we focused particularly on subvention contracts, which govern relationships of exchange between Plenary and Associate members and the network. Theoretically, a network with DIRSI's characteristics (geographically dispersed researchers who work via a virtual platform), and which is largely promotional (like R&D partnerships), should be characterized by multilateral exchanges established through relatively informal agreements. The subvention contracts, however, suggest that the exchanges are bilateral — between the IEP and a researcher — by way of a binding, personalized contract (it should be kept in mind that the contracts are based on Peruvian labor legislation), typical of an obligation-based network where there are strong contractual connections. Nevertheless, it should be noted that other cases similar to that of DIRSI use the same arrangement of contracts for research projects.

1.4. Compliance with rules of exchange

This section focuses on the means by which DIRSI ensures that its members follow the rules of exchange by fulfilling contracts (in this case, we are referring only to the subvention contract). As mentioned in the section on methodology, there are two types of tools for ensuring compliance with rules: coercive procedures, and norms and ideologies aimed at achieving consensus among members.

In the case of DIRSI, the subvention contracts are governed by Peruvian labor legislation and establish obligations for each of the parties involved (IEP and the researcher). In the case of serious breach of contract, the problem first goes to the Steering Committee, and then, if necessary, to the Peruvian courts. So far, this has not occurred.

The subvention contracts also establish other means for ensuring compliance, such as payment upon delivery of outputs. The researcher receives an advance upon signing

the contract and partial payment upon delivery of partial and final outputs, as established in the terms of reference. The same procedure is followed by RIA!. The LINK Centre allocates funds based on projects, paying the researcher 50 percent in advance to cover expenses and the balance upon delivery of the final written report (the percentages may vary depending on expenses). In terms of accountability, the LINK Centre considers that funds to have been spent appropriately as long as these procedures are followed and the final report is submitted on time.

Information gathered in the interviews shows that this method for enforcing compliance has not been very effective in DIRSI's case. The members of the network believe that the main problem with contract fulfillment has been the late delivery of products (not outright non-compliance). DIRSI therefore also uses other means to ensure compliance with contracts, including a negotiating process mainly led by the Steering Committee, or relying on personal relationships to bring pressure or encourage a higher degree of commitment.

In general, therefore, in this area DIRSI shares certain (theoretical) characteristics of obligation-based and promotional networks. In this particular case, contracts are enforced through a combination of coercive measures (binding contracts and dependence on resources) and consensus (personal relationships, peer pressure and negotiation).

1.5. Assessment of formal and normative aspects

To summarize the analysis done in this section and highlight DIRSI's principal weaknesses in formal and normative aspects, as well as similarities and differences with other international cases, it is helpful to focus on five points: 1) system of governance; 2) administration, coordination and dissemination of information; 3) membership types and criteria; 4) contracts; and 5) enforcement of contracts.

1.- DIRSI's system of governance shows a high degree of similarity to and consistency with other international cases; despite slight differences, all of these networks have a governing structure headed by a relatively small, collegial decision-making body (two to four people) analogous to DIRSI's Steering Committee. These networks also have another collegial body, made up of a larger number of people, which seeks to represent different interests and members. In this case (as with DIRSI's Assembly of Members), they communicate, negotiate, make strategic and operational decisions for the network, and choose the members of the top leadership body. Finally, all of the networks analyzed, including DIRSI, have an international committee of expert advisers.
Despite these similarities in governing mechanisms, DIRSI differs from the others in two ways. First, DIRSI has a small number of members who participate actively (including Plenary Members). In the other cases analyzed, the governing bodies make decisions and carry out actions for a relatively large number of members who need coordination and direction (for example, LATN has more than 180 members, while RIA! has 14 affiliated organizations). DIRSI currently has no more than 10 members, while the

average number of members in networks is 39 (IDRC, 2007). This is not a minor factor, as studies of networks show that although the number of members does not affect capacity building for research, it is difficult for networks with fewer than 10 members to have an impact on decision makers or on the design of public policy, legislation and programs (IDRC, 2007).
Second, DIRSI lacks a visible figure to serve as intellectual leader of the network. The presence of a committed leader has proven crucial for building trust and cooperation among members, developing a network identity (especially in the phase of formation and consolidation) and attracting resources. Research networks similar to DIRSI that work in the area of ICTs have been characterized by having a leader who is clearly identified by both members and people outside the networks (such as William Melody in LIRNE.NET, Alison Gillwald in RIA! and Rohan Samarajiva in LIRNEasia).

2.- In administration, coordination and dissemination of information, international cases show a high degree of concentration of activities in the center that functions as the organizational headquarters. In the case of longer-established networks, strategies for the future focus on decentralizing management and administrative tasks by shifting them to regional centers. For networks that are still in the formative stage, the organization that serves as headquarters, because it is independent, plays an important role in building the network's credibility and providing an autonomous space that is isolated from fluctuations of national, sectoral, political or corporative interests (LATN, 2007). In terms of administration, being headquartered in an institution makes it possible to adhere to two principles that are key for receiving international funding, especially from IDRC: development of administrative abilities and the financial security afforded to the funding organization.
In the case of DIRSI, having the IEP handle funds has proven to be a satisfactory and efficient arrangement (no complaints or conflicts were perceived in this area) and is in line with international principles and practices. Nevertheless, in the area of coordination and dissemination of information, DIRSI lacks a nerve center similar to those of other cases analyzed. It is in these areas that its members recognize that improvement is needed.
While at the IEP the staff members who handle executive and administrative tasks also help with communication and interaction among members, in centralized organizational headquarters such tasks are carried out by individuals or groups who have exclusive responsibility each activity (as well as the necessary expertise in each area). The lack of an organizational headquarters has contributed to an image of a "diffuse" network, even among members.[4] One additional factor is that DIRSI has been conceived as operating only virtually. When the network began, administrative tasks were handled long distance, with payment requests coming from a remote location (Argentina) to arrange disbursements from bank accounts in other countries. Final authorization of payments came from Peru, where the IEP was responsible for network administration and budget management. Although these administrative functions are currently centered in the IEP, that fact that they were not done in a single physical location from the start has

[4] For example, some payments for publications are made in Peru, while the member of the Steering Committee who is in charge of editorial work, coordination of publications and relations with publishers is in Mexico.

contributed to a perception among some members of a dispersed, diffuse organization. In general, from the time they are created, networks (not only the cases analyzed here) have a specific organizational headquarters; 75 percent of the networks supported by IDRC have had a stable organizational headquarters since they began operating (IDRC, 2007).

3.- In the international cases studied, membership procedures and criteria are fairly lax and open, so as to attract a larger number of members. This has been crucial, especially in the first phase of establishment of the networks (formation and consolidation). In this area, DIRSI differs significantly from the other cases analyzed. It has established stricter selection criteria (based on international recognition and academic training with certain quality standards) and a relatively closed and personalized selection mechanism. This type of membership system has undoubtedly contributed to the small number of members who participate actively in DIRSI. Added to that, strategies for publicizing and promoting the network have not been conducive to its positioning and visibility (almost none of the members were attracted to the network because of prior knowledge of DIRSI).[5]

4.- The rules of exchange among members of DIRSI, particularly the model of subvention contracts, are in line with other international cases. The members contracted for projects tend to be more committed and more active in seeking alternative sources of funding (LATN, 2007). If funding is very volatile, however, the members may have little incentive to remain in the network, or their decision to stay may be subject to strategic decisions based on personal benefit.
Another positive aspect of contracting for projects is that they offer members a common purpose: “outputs, meetings, deadlines, real activities” (IDRC, 2007). In addition, the projects (and their results) are important to donor agencies because they show that the networks are engaged in productive work (IDRC, 2007).

5.- Mechanisms for enforcing DIRSI’s contracts are also in line with international experience. Research networks tend to opt for a combination of coercion and consensus to ensure that the parties involved abide by the rules of exchange.
Nevertheless, DIRSI cannot ignore the fact that some members miss deadlines for delivery of outputs. While this does not signify complete breach of contract, it significantly affects network operations and coordination. It is therefore necessary to impose penalties for late delivery — which currently apply only to Associate Members — to all members of DIRSI, or seek alternative means (of consensus or coercion) to ensure that network members meet their academic output obligations.

2. Mechanisms for Interaction

The second area of evaluation focused on mechanisms for interaction among the components of the DIRSI network: organizational elements and opportunities and

[5] While DIRSI has designed a plan for advocacy and dissemination of information to publicize the network and promote its products, its implementation has not been satisfactory.

arrangements for communication, decision making and collective action. Mechanisms for interaction were divided into three sub-areas for evaluation: the decision-making process (definition of common goals and objectives), interaction at the organizational level (openness and democratic legitimacy) and interaction at the operational level (achievement of results in terms of efficacy and quality).

Evaluation of this area was mainly based on first-hand information, as it was necessary to investigate informal aspects of the network's operation that cannot be analyzed by examining rules and/or documents.

2.1. Decision-making process

This section analyzes the process for defining DIRSI's objectives, which members participate, their relationships during this process, and the organizational arrangements for decision making in the network.

2.1.1. Formulation of objectives

In any mechanism for governance and coordination of activities, the definition of common objectives gives meaning to the members' individual and collective actions. The way in which objectives are defined, therefore, is key to understanding the meaning that individuals give to their own actions and to the organization itself, as well as the behaviors they adopt as a result.

According to DIRSI's by-laws, "*the highest decision-making body is the Assembly of Members,*" while the Steering Committee is responsible for "implementing the decisions of the Assembly and directing the activities of the organization." In formal terms, therefore, the Assembly is responsible for establishing common objectives for the network, since in ordinary and extraordinary meetings it "*defines strategic guidelines for action, including priority issues for research, how research funds will be allocated, and activities for promotion and development of the network"* (DIRSI by-laws, 2007).

Analysis, however, shows certain inconsistencies between the formal guidelines and how these principles are put into practice. The network actually operates according to a slightly different pattern. Taking as mandate the general priorities defined by the Assembly, the Steering Committee assumes the main functions related to decision making and direction of the network, making itself the principal decision-making body.

From the start, the network has sought to establish a democratic process for making consensus-based decisions, with discussion and debate about issues and work areas. Reaching formal agreements *ad referendum*, therefore, is crucial for keeping members from straying from the agenda. It is important to note, however, that based on unanimous, general decisions made by the Assembly (such as the decision to study mobile telephones in 2007), the Steering Committee has a significant degree of freedom to allocate resources and establish priorities for the entire network. For example, the Steering Committee has enough autonomy to set specific objectives and define

approaches and methodologies to be implemented by the members who are researchers.
The reasons for this decision were strategic and responded to an effort to make decision making more efficient. In strategic terms, it must be understood that DIRSI is in a formative phase and must reinforce its own identity as a research network. Establishing a common work plan, therefore, helps it become known as a single, focused entity and establish its own voice, credibility and recognition, which in the knowledge market are importance for a network's survival. Another strategic reason was the need to continue capturing funds from IDRC, which required that DIRSI be on a par with other networks that are also funded by the Canadian agency. Establishing research frameworks with a global approach, so as to be able to do comparative work, is one of IDRC's priorities.[6] In terms of efficiency, meanwhile, this decision-making process sidesteps certain stages of discussion and negotiation, reducing the time needed to make decisions.

How do DIRSI's members see this process? In general, those responsible for decision making (the members of the Steering Committee) are satisfied and note that the process has been efficient. Other members of the network, contrary to what might be expected, indicate that they are in agreement with the process, recognizing that "strategically the Steering Committee's decision was correct," and "… it was not a forced process … they have been transparent in explaining the situation." It would seem, therefore, that there is a certain degree of agreement among network members with the decision-making process, although it means giving up democratic decision making procedures.

DIRSI members, however, do not show the same degree of satisfaction with the content of the process. While they acknowledge the importance and relevance of studying mobile telephones in the region, the members have called for a greater degree of diversity in research topics, so as to reflect the different situations in the region's countries. While DIRSI previously allocated funds to other projects of smaller scope (which constituted a more diverse research agenda), network members have perceived that is not clear how opportunities, time and resources will be made available for other topics. Plenary Members have repeatedly called for more systematic, formal and transparent support for other research projects. It is also important to remember, however, that balancing regional and national priorities with an overall research approach is one of the greatest difficulties facing research networks, especially when control and direction are centralized. This tends to occur in networks and centers that are part of worldwide networks that seek to establish common research platforms.

DIRSI's relatively centralized decision-making process is consistent with those of other research networks that we have analyzed, although there are several significant differences. The available information shows that one common characteristic is that priority research topics have been or are defined by a relatively small group of people (or even by a single person), at least in the first few years of the network's existence.

[6] Members of DIRSI, RIA! and LIRNE.NET decided in early 2007 to make studies of mobile telephones a common topic.

Other international cases also have an organizational headquarters that operates as a nexus for interaction (LINK Centre, FLACSO/Argentina, Comunica) or intellectual leaders who participate constantly in the network (R. Samarajiva or W. Melody, for example). DIRSI lacks both of these elements.

2.1.2. Stakeholders and bonds of interaction

According to the network's by-laws, the members of the Assembly must meet at least once a year, virtually or physically, to make collective decisions. In 2004, 2005 and 2006, meetings of the Plenary were held for this purpose, while in 2007 only those involved in the *Mobile Opportunities* study met.

In general, DIRSI's decision-making processes have aimed to build agreement among Assembly members and consensus on priority topics for research. Nevertheless, the process has not been free of flaws and has created a sense of confusion among members because of the way in which decisions crucial to network operations have been communicated. Some comments in this regard: "[There was] a lack of communication … no one knew what was going to be done or how it was going to be done," "There is a problem of communication in the implementation … it was not clear what the members of the Steering Committee were asking; there were constant changes in the structure of the content that they wanted."

2.1.3. Organizational arrangements for interaction

Organizational arrangements can be understood as the elements that structure the decision-making process; in other words, they are the spaces and mechanisms that allow interaction among members for decision making.

As mentioned above, the main opportunities for members of the network to gather formally are the Plenary meetings that must be held at least once a year. Schedule conflicts, however, keep members from meeting frequently, even virtually. As a result, the members of the Steering Committee are the only ones who maintain weekly communication (electronically) for making strategic decisions about the network, although the committee members also sometimes have problems with coordination and organization.

For communication about operational matters related to research, DIRSI keeps a list of participants' electronic mail address and uses bulletins. These are the means used to provide information about deadlines, events for disseminating information, budgets, relevant news, etc. There were differing opinions about the usefulness of the mailing lists as a means of communication.

Another opportunity for interaction and communication in DIRSI is provided by its Web site (http://www.dirsi.net/espanol/). This, however, is mainly used for activities that publicize DIRSI "outside." In other words, it is a Web site on which the network's academic outputs are available, but it does not allow two-way interaction with outside

stakeholders (when they would like to contact the network, they must do so by electronic mail). The site lacks Web 2.0 tools (such as mashup, blogs or podcasts) that would facilitate smoother communication with the world or that could be used by the network members for a speedier exchange of information and ideas. Initially, the site had an Intranet system for interaction and academic discussion among members, but it received little use. As some people noted, "… the researchers did not have the skills (or the patience) to access and use [the Intranet]", and "…perhaps a training workshop was needed on how to use it. …"

2.2. Mechanisms for interaction: institutional level

The second area of evaluation of mechanisms for interaction relates to the way in which network members relate at the institutional level once common objectives have been established. The criteria for analysis are openness and democratic legitimacy. *Openness* refers to the existence of a variety of stakeholders and ideas, the acceptance of new ideas and stakeholders in the process of interaction, and access to arenas for discussion and sharing of knowledge. A significant degree of openness creates conditions for an equitable balance of interests and different viewpoints. The criterion of *democratic legitimacy* is met if there are democratically elected bodies and mechanisms that make it possible to promote the interests of different members or groups within the network.

2.2.1. Democratic legitimacy

DIRSI formally defines the Network's system of governance and election of the Steering Committee in its by-laws: *"…the Assembly of Members elects a three-member Steering Committee whose responsibility is to carry out the decisions of the Assembly and direct the activities of the organization. The Steering Committee is elected for a two-year period and can be re-elected once."*

The election of DIRSI's highest decision-making body is based on guidelines that are lax and general. When the network was created, these rules were followed to elect the Steering Committee that is still in office, and which is perceived by the members of the network to be a legitimate governing body.

With regard to mechanisms for promoting the interests of different members, the decision-making process that is relatively centralized in the Steering Committee has not left enough room for valuing different approaches and viewpoints in the definition of priority research topics. As explained above, these changes were strategic and were designed to make the decision-making process more efficient, although some members have noted that "there has been no debate among the members." It should also be noted that the organizational arrangements for interaction among members of DIRSI have been inefficient for ongoing communication and for building bonds. In this area, DIRSI is not in a situation that is conducive to the exchange of ideas and views outside the network's institutional decision-making process.

2.2.2. Openness

The criterion of openness is related to stakeholders and ideas (approaches), in terms of heterogeneity and access. As mentioned above, selection criteria for DIRSI members are designed to identify members who have a certain academic level and recognition in the area of study. Such criteria may allow for high standards of quality in terms of production, but they can be an obstacle to developing a diverse membership.

Indeed, the network's members have a homogeneous profile and similar methodological approaches (for example, market studies, business orientation and consultancies). In addition, a relatively closed selection process in which the acceptance of new members must be approved unanimously in the Assembly (considering the difficulties involved in coordinating a Plenary meeting) makes it difficult for new members from different disciplines and with different backgrounds to join the network.

Access to forums for discussion and sharing of knowledge is also limited, since DIRSI does not have virtual platforms for collaboration that would allow for more and better interaction between its members and other stakeholders.

2.3. Mechanisms for interaction: operational level

At the operational level, analysis focused on evaluating the effectiveness of DIRSI's outcomes. Analysis centered on the fundamental purpose of the network (the production of knowledge that facilitates discussion and policy design) and its guiding activities: 1) evaluation of policies; 2) critical analysis of the literature; 3) production of research; 4) dissemination of results to key stakeholders; and 5) training of young researchers.

In general, considering that the network is in an early stage of its existence, outcomes have been perceived as satisfactory (especially in the production of knowledge), although some objectives have been met only partially.

In the area of academic production, both members and stakeholders outside the network perceive that DIRSI's work has been effective and has attained appropriate standards of quality. In the words of one, "DIRSI's work is of very good quality and is comparable with the work being done by other centers." The problems related to academic production have mainly been due to delays and missed deadlines.

The greatest weaknesses are perceived in the dissemination of information. The dissemination of results, organizational arrangements and tools for communication and interaction have not been effective enough in publicizing the network's outputs. That is also the opinion of the members of the network. Nevertheless, it is important to remember that the various tasks related to dissemination of information fall to a relatively small group of people who are not dedicated exclusively to these activities (they also handle administrative and operational tasks). In that sense, the work done so

far is commendable, although in the long run, if DIRSI seeks greater expansion and visibility at the regional and global levels, it will need a staff dedicated exclusively (or at least part time) to the task of dissemination of information and communication of the network's results.

In terms of impact on the design of public policies, because the network is so young, significant effects have not been perceived (this, however, does not mean that DIRSI has not had some degree of influence in this area). It is important to remember that influencing public policy and the design of regulatory frameworks is a long-term, multifaceted process whose effects are difficult to identify. Nevertheless, the presence of an intellectual leader who is well known outside the network is indispensable in moving toward this goal (for details of a specific case, see *LIRNEasia on Policy Influence and Dialogue*). DIRSI must also improve its communication about processes related to the design, implementation and/or evaluation of public policies, even if they are nearly imperceptible. This could also allow the network to better position itself at the regional and global levels.

In the area of training, DIRSI has held grant contests for young researchers for studies in the network's area of interest. The granting of financial resources, however, cannot be considered an effective training policy, as it does not provide courses or training to researchers in formation or provide periodic follow-up of research that is under way. While progress has been made in the past year in more regular monitoring of the work being done by young researchers, this has not resulted — as one Associate member said in an interview — in a greater degree of commitment to the network (in any event, the commitment was due to having received a smaller amount of funds, under the terms of the contract and in accordance with penalties for delays).

Finally, with regard to network members' personal goals, belonging to DIRSI is seen as very positive. The main benefits that the members have identified are acquisition of new knowledge (methodologies and approaches), national and international visibility and recognition, and making new contacts with experts in the field.

2.4. Assessment of mechanisms for interaction

The assessment in this section focuses on the following aspects: 1) definition of common objectives; 2) organizational arrangements; 3) openness and democratic legitimacy; and 4) achievement of outcomes.

1.- The definition of objectives and priority research topics has undergone certain changes, and the Steering Committee has positioned itself as DIRSI's highest decision-making body. These changes have been accepted by the network members, who believe that the decisions have been strategically correct in terms of efficiency. At the same time, centralization in critical aspects of decision making is common practice internationally, especially when networks are in the process of formation.
Nevertheless, the decision-making process has created confusion among members for two reasons: first, it is inconsistent with the network's formal documents; and second,

communication of the Steering Committee's decisions has been extemporaneous and unclear. These weaknesses must be resolved to give members a greater sense of certainty and give direction and meaning to DIRSI's work.

2.- The structure of the decision-making process is left somewhat to chance and is subject to the time that the Steering Committee members have available. Opportunities and mechanisms for interaction (such as mailing lists or the Web site) have not proven effective for maintaining periodic links among members and between them and the outside world. This is not insignificant; considering that the members tend to have little time to dedicate specifically to network affairs, DIRSI lacks a dynamic, friendly Web site that could become a platform for discussion among members and with other stakeholders. Innovative technologies should be used for building relationships and common values within the network.

3.- As the highest decision-making body, the Steering Committee is considered legitimate by the members of the network. It is also perceived, however, that the committee has not left enough room for debate about other priority research topics, a situation that some members consider inappropriate. DIRSI needs to create conditions conducive to the sharing and discussion of viewpoints and priorities, not only to allow diverse interests to be represented, but also to attract new members from different disciplines.
Regarding heterogeneity and openness to new members and ideas, DIRSI has proven to be a relatively closed network. This is due to its strict selection criteria, a mechanism for closed membership, and the lack of collaboration platforms that would foster smoother interaction and balance different interests without the need to channel them through the Assembly or the Steering Committee. If it is to expand, DIRSI must become a more open network that is permeable to members with different viewpoints and backgrounds from different disciplines, as well as the diverse types of participation that could emerge from a more heterogeneous membership.

4.- In the achievement of objectives, DIRSI shows satisfactory results in academic production (in terms of efficacy and quality), but other objectives have been met only partially. The main weaknesses are in the dissemination of information and the network's outputs. In particular, organizational arrangements and tools for communication and interaction have not been effective enough. Training has not been ongoing and has not been aimed at a specific target population; as a result, significant effects have not been perceived in this area. Nor have specific results been perceived in terms of impact on the design of public policies, although it must be remembered that DIRSI is still at an early stage and the channels for influencing the design and implementation of policy are diffuse and multifaceted.
One final point to keep in mind is that, in general, DIRSI's members believe that their participation in the network has had personal benefits in terms of acquisition of knowledge, recognition and establishing new contacts with experts in the field. It is important that DIRSI learn to capture this individual energy for the benefit of the network (especially to encourage a greater degree of commitment and involvement). If that is not

done, it is possible that after the “initial enthusiasm” wears off, members will see DIRSI only as a strategic means for achieving personal goals.

3. Recommendations

This final section of the study presents recommendations aimed at correcting DIRSI's principal operational and functional shortcomings. The recommendations focus on three main areas of the network: 1) organizational structure; 2) mechanisms for affiliation and membership criteria; and 3) communication and interaction. These areas are clearly interrelated and affect one another without a previously determined causal direction. Despite the interconnections, however, for clarity the recommendations are presented in three different sections.

3.1. Organizational structure

Structural recommendations focus on: 1) the network's system of governance and decision making; and 2) administration, coordination and dissemination of information.

- **System of governance**. Based on the cases analyzed, DIRSI is very similar to and consistent with international practices. The existence of an elected collegial decision-making body, an assembly of members for discussion of priority and strategic issues, and an external advisory committee are common characteristics of virtual research networks. It is recommended, therefore, that these components of the network's formal structure be maintained.

With regard to how these components should be structured for decision making and the definition of common objectives, it is important to keep in mind the network's stage of development. Just three years after its founding, DIRSI has experienced significant changes in its operation, from a purely virtual network to one that is relatively centralized in terms of management of funds; from a participatory decision-making style based on democratic deliberation to a relatively centralized process; from a varied work agenda to a single common research focus for its members. DIRSI must therefore complete its current formative phase and make the transition to a process of consolidation. It is necessary for DIRSI to strengthen an **organizational identity** that distinguishes it as a research network focusing on ICTs. This will be crucial for its expansion and growth, especially in a region such as Latin America, where researchers in this field are fragmented and geographically scattered, there is little accumulation of knowledge on the subject, and there is no regional research agenda.

Given the need for and importance of developing an organizational identity, it is advisable that the DIRSI Steering Committee continue to be the **focal point for the definition of priority topics** for research. Common, collective projects for the members of the network offer benefits in terms of internal consistency, recognition and credibility outside the network. There is also an important disadvantage, however: if there is not enough room for autonomous positions and different stakeholder preferences, there is a risk that members will stop participating actively, that their participation in the network will be sporadic and based more on the individual benefits they receive than on a sense of belonging, and that potential new members may decide not to approach the network.

In this area, DIRSI must improve in three areas: norms, communication and planning. Each is explained below.

First, it should **make its internal governing documents consistent** with the real decision-making process. This means modifying DIRSI's by-laws and formally establishing the Steering Committee as the highest governance body and the Assembly of Members as a body responsible for deliberation, communication, negotiation and adjustment of decisions made by the Steering Committee. In terms of transparency, criteria for selection and replacement of Steering Committee members, which currently do not exist, should be established and included in the by-laws.

Second, it should **speed up and improve communication of Steering Committee decisions** to the Assembly to avoid confusion and missed deadlines. The Steering Committee must communicate priorities and short-range goals in a timely, clear, transparent manner to give direction and an identifiable purpose to the network's collective action. Similarly, the Steering Committee's decision-making process should be speeded up and/or enhanced. Given the committee members' time constraints and schedule conflicts, and the fact that they belong to other organizations and therefore have other priorities, more efficient decision making could take **two forms:** 1) **reducing the number of members** of the Steering Committee; or 2) **establishing formal, systematic guidelines for communication,** so the Steering Committee communicates weekly or bi-weekly, giving DIRSI activities priority over other issues. These options are described in greater detail below.

Third, it should establish formal mechanisms for achieving a certain degree of heterogeneity in research topics, without forgetting the importance of having a common agenda and the need to reinforce the organization's identity. The Committee's decisions, therefore, should be based on a **strategic planning process** with the Assembly's participation. The members of the Assembly would present medium-range work plans (biennial, for example), so the Steering Committee can understand their priorities and academic interests, the scope of their research, and an estimate of the financial, human and material resources needed. The Committee, in turn, should give consistency and order to the members' proposals, balancing regional and global priorities in light of international trends, and develop work plans to be debated in the Assembly. The idea is to establish clear goals and develop a sense of shared values and interests, creating synergies among members based on a common foundation of decision making and a sense of direction for collective action.

It is also recommended that there be room for research topics that are not on the priority list or the common work agendas. A strategic planning process like the one described would enable the Steering Committee and the Assembly to establish and agree on priority issues for joint work. This, however, does not mean that other research projects not directly tied to the agenda of pre-established activities should be set aside. The Steering Committee can use the members' biennial plans to rank non-priority projects (depending on the relevance of the issue, scope, budget, etc.) and establish a competitive system for funding research. The idea is for the members to feel that they

have a certain degree of autonomy in their work and to stay in the network even if what they are doing is not directly connected with DIRSI's work.

In terms of transparency and certainty, it is recommended that DIRSI formally include in its governing documents the strategic planning process and the system for competing for research funds, with their respective requirements, time frames and criteria. Issues discussed in the Assembly and decisions made by the Steering Committee must also be published so that all network members are aware of them.

- **Administration, coordination and dissemination of information.** The international cases analyzed, as well as studies published by IDRC (2007), show that networks need an organizational headquarters if they are to develop, expand and maintain themselves over time. The benefits of having an organizational headquarters are related to greater facility in obtaining funds, reduction of operating and administrative costs, greater prestige, visibility, contacts, and efficiency in obtaining and/or delivering products and services.

Research networks tend to concentrate administration, coordination and the dissemination of information in a center that is recognized as the organization's headquarters. As noted above, DIRSI has moved from a purely virtual administrative system to a model of payments and contracting centralized in the IEP. Coordination of members and their interaction, as well as the dissemination and promotion of the network and its outputs, however are scattered among various members of DIRSI. As a result, there have been problems of organization and communication that complicate the network's operation.

To solve such problems, it is recommended that these three activities (**administration, coordination and dissemination of information)** be **centralized** in a single place. This recommendation has several implications.

First, it is important to consider the "physical location" of the network. Administrative tasks are currently handled at the IEP with satisfactory results, as are some activities related to communication, dissemination of information and publication. Given the acquired expertise and the development of certain capacities for the functioning of the network, it is recommended that the **nerve center of DIRSI be established in the IEP.** It is important to note that the IEP is a large research center that does not specialize exclusively in the area of ICTs (unlike the LINK Centre or LIRNEasia), and in the case of DIRSI it would act as an intermediary for resources. It is therefore not possible to propose that the IEP serve as DIRSI's organizational headquarters, as it would be necessary to create an ad hoc department or designate an area exclusively dedicated to day-to-day and strategic network operations (as in the case of the international relations area of FLACSO/Argentina). In this case, the IEP could handle the administrative system, as it has been doing, and provide some material resources, infrastructure and physical space, for which it could receive some compensation.

Second, the concentration of activities in a single physical location would also imply a **redistribution of functions,** hiring of **more personnel** and disbursement of more **financial resources** for operations, as explained below.

With regard to funds for centralizing activities in the IEP, the hiring of more staff, which would require more material resources, implies a considerable disbursement of funds. This would also be true if the IEP charged for the infrastructure it provided to function as the network's physical location. It is important to remember, however, that the establishment of a "nerve center" — an organizational headquarters — also offers opportunities for diversifying funding sources, as it would make it possible to attract different kinds of projects that are not dedicated exclusively to academic production. It would even be possible to generate revenue through activities that are currently not done because of a lack of sufficient operational capacity (events, conferences, seminars or training courses).

Diversification of funding sources is positive in more than economic terms. Not depending exclusively on a single funder (with its own interests and objectives) is important for ensuring greater autonomy and freedom to define priority research topics and common and strategic objectives for the network. A greater degree of independence in this area would also help with the development of the organization's identity.

As mentioned above, DIRSI must also make the Steering Committee decision-making process more agile. It is therefore necessary and sensible to bring the coordination of communications, dissemination of information and administration, as well as coordination of knowledge production (option 1 above) together in one place. **Having a single person responsible for internal coordination** of DIRSI would result in lower communication and operating costs, more agile interaction among members and internal consistency. One person should be responsible for coordination of institutional relations and development as a means of strategic interaction with those outside the network. Reducing this governing body to just two members (responsible, respectively, for internal and external coordination of the network) would offer benefits in terms of more efficient decision making.

With regard to the centralization of coordination of communication, dissemination of information, administration and knowledge production, the merger of tasks and responsibilities will not happen "automatically," without consideration of the quantity and diversity of tasks that one person should perform. The person in charge of internal coordination must focus on strategic and organizational affairs, delegating operational tasks and day-to-day network operations to a work group contracted specifically for these activities.

The recommended way of merging strategic and organizational tasks is as follows: development of an operating plan for communication and dissemination of information; coordination of internal virtual discussions and communication; promotion of the network (currently functions of the coordinator of communications, dissemination of

information and administration); organization and supervision of the DIRSI project portfolio; design of the project timeline; identification of opportunities for the development of other sub-products stemming from research (currently functions of the coordinator of knowledge production).

Operational and logistical tasks that could be delegated to a work group include: maintaining the Web page, managing the database of visitors and users, keeping organizational records and organizing the network's historical archives, identifying events and vehicles for publication to disseminate knowledge outputs, follow-up of this dissemination, organization of meetings and events (functions formally assigned to the coordinator of communications, dissemination and administration); editorial work and manuscript review, and coordinating the production of publications and relations with publishers. This diversity of tasks also suggests the need to hire additional personnel with certain training and expertise (currently in the IEP there are only two staff members who carry out many of these tasks). After a certain period of time, the delegation of these functions should be reflected in the organizational structure and processes should be formalized.

One important point is that if the Steering Committee is reduced to only two members, problems could arise when controversial decisions are made, as one of these two members must have the power to break a tie vote. If the functions and duties of each member of the Steering Committee are clear and correctly defined, however (that is, if neither has direct authority over the other), however, the likelihood of problems in decision making would be reduced (although there are some differences, it is important to keep in mind the case of LIRNE.NET, which is co-managed from Denmark and Uruguay with different tasks assigned to each coordinator and each center).

As mentioned above, there is a second option for speeding up decision making by the Steering Committee and communication with other network members (without the need to reduce the number of Committee members): establishing set times for the Steering Committee to give priority to DIRSI activities. A model of this type assumes formal establishment (by agreement or modification of the network's by-laws) of a weekly or bi-weekly time for the Steering Committee to meet regularly to make decisions, discuss or simply follow up network activities. Although the Steering Committee already maintains periodic communication, because of other priorities and the demands of their regular activities, the committee members sometimes find it necessary to postpone or change the times of planned meetings. Formally establishing a time exclusively for coordination of the network does not mean that the Steering Committee members would indefinitely set aside other priority activities; it simply means that at that particular time, **DIRSI** would become their **number one priority** over other daily tasks. This would offer benefits not only in ensuring timely decisions and communication, but also in helping the members of the Steering Committee organize their schedules and facilitating their commitment and dedication to DIRSI activities. This may be the **most advisable option** for the network at this time (given the operational and financial implications of redefining the Steering Committee and the small number of network members), while the Steering

Committee could be modified once the current formation and consolidation phase is complete.

3.2. Membership mechanisms and criteria

The reduced number of members who participate actively in the network is one of the most important problems (and one requiring the most urgent attention) affecting DIRSI at this early stage of its existence. In fact, it is the main limitation on growth and expansion. It is therefore necessary to redefine criteria for the selection of new members and create a new mechanism for membership.

- **Selection criteria**. The international cases analyzed had much more lax minimum requirements for membership than DIRSI does. While DIRSI seeks members with a track record of high-quality academic production and a certain degree of expertise and recognition in the area, in other networks the sole requirement is having participated in one of the network's activities or simply wanting to collaborate actively.

To expand DIRSI's scope and its geographic presence in the region, it is advisable to establish **more relaxed selection criteria** that are specifically aimed at capturing new members from a variety of disciplines and backgrounds. A heterogeneous membership offers the possibility of developing an organizational identity that goes beyond individual members of the network, including its founding members, to give continuity to the work being done and direction to future projects.

Related to this, the addition of a larger number of more diverse members would create the need to discuss what it means to be a "member," what benefits this brings and the possibilities offered by participation in the network. Creating a sense of belonging and commitment is key to attracting new members and keeping those who are already participating actively involved.

In some of the cases analyzed (LATN, for example), the sense of belonging has been encouraged through economic incentives (honoraria) for members. This model offers the advantage of increasing each member's obligation to the network and lays the groundwork for a shift from voluntary participation to a more professional work model. The disadvantage is that the honoraria must be subject to some mechanism for oversight of results if they are to have a significant effect. If the economic incentives are not tied to completion of strategic network activities, and if there are no means for verifying the achievement of results (such as dissemination of information, promotion or direct incorporation of new members), there is a risk that resources will not be spent wisely.

Other means (not necessary economic) of compensating members for their support and for creating a sense of belonging include inviting them to participate in conferences in seminars, giving them greater responsibility in decision making and offering selective incentives for publications or research.

Diversification of network activities, especially those coordinated from the organization's headquarters, offers precisely the tools needed to keep members' attention and maintain their commitment. For example, members who are not collaborating in a joint research project might be required to participate in conferences and seminars organized by the network or to give virtual training courses.

With regard to the type of members, the cases analyzed generally established a single type of membership, "full" or "ordinary" members. Depending on their degree of commitment to the network (in strategic, budgetary and administrative terms), they can later be elected to a governing body. In DIRSI's case, there are formally two types of members: Plenary (with responsibilities and privileges) and Associate (contracted for projects). It is advisable to follow international best practices and **establish a single type of membership**. The existence of two categories of members with different contractual conditions has helped create a sense that there are "first-class" and "second-class" members in the network, even though some Plenary members do not participate actively. This makes developing a sense of common values and shared interests among DIRSI's members even more difficult.

The lack of a common membership could make it more difficult to maintain members' energy and their commitment to the network, as well as to foster a sense of belonging. Having only one type of membership would contribute to the idea that the possibility of holding a strategic position in the network depends on the member's efforts to help the network grow (this is not true in the case of DIRSI, where the Plenary members, the "first-class" members, hold this title because they were part of the original group that was convened in Montevideo in 2004). To create a sense of certainty in this area, it is important that mechanisms and criteria for election of authorities (Steering Committee and Assembly) be clear, transparent, duly communicated and perceived as legitimate by the members of the network.

- **Mechanisms for affiliation**. In organizational terms, the redefinition of membership criteria is a relatively simple step as long as the Steering Committee and Assembly are in agreement and they are clearly defined in the by-laws. A more difficult step lies in determining the process for applying the new selection criteria. This involves attention to two aspects.

First, problems of access by new members are not due only to DIRSI's strict selection criteria. To expand the network, it is necessary to establish a **deliberate recruitment policy** with a strong effort to publicize the network and attract members in different countries in the region and in various disciplines. It is important, however, to ensure that the various types of members, contributions to knowledge production and forms of participation in the network do not sidetrack the work that has been done so far.

Second, as membership criteria are relaxed and the network is publicized more widely, the number of applicants for membership may increase. So far, new members have been proposed by a Plenary member and their incorporation must be unanimously approved by the Assembly. Because of the difficulties in scheduling meetings of the

Plenary members, having a larger number of applicants will mean **simplifying the selection mechanism** and placing its **operation in the hands of a small group of members** of the Assembly. With the relaxation of selection criteria, the minimum requirements for membership can be easily verified and approved by a committee (of two people, for example) without the need for approval by a deliberative body.

Related to this, the selection of Assembly members must also be partially modified to take into account the increased membership and facilitate the active integration of new members. Assuming a broader base of "ordinary" members, the Assembly would take on key functions for the network and its various components (through participation in decision making and planning of collective action). In general, selection criteria for the Assembly are appropriate for its strategic nature. Nevertheless, it is also necessary to value the contributions and participation of the various members, so election to decision-making bodies should be based on merit. This would mean that the members of the Assembly and the Steering committee would observe and oversee, for a certain period of time, the efforts of other peers. Eventually, the Assembly could decide that a member should leave the governing body, and that another member with merit who has demonstrated active commitment to DIRSI should be elected. This model offers benefits in terms of democratic legitimacy and openness, without necessarily making Assembly or network operations more unwieldy.

3.3. Communication and interaction

This final section presents recommendations for improving communication and interaction within the network and with those outside it. Because communication and interaction among members and other stakeholders is built from day to day, sometimes by chance, it is not possible to pre-establish specific processes and procedures for putting these recommendations into practice. The following are two strategic areas for enhancing DIRSI's internal and external communication: use of innovative technology and perception management.

- Making **greater and better use of innovative technologies** to build relationships and common values with the network. DIRSI needs to **enhance its Web site,** making it more dynamic and friendly, so that it can become a platform for discussion among members and between them and other stakeholders. It is necessary to include Web 2.0 tools (such as blogs and podcasts) to facilitate communication with the world (two-way) and make the exchange of information and ideas among members more agile.

To encourage more dynamic connections and interaction, DIRSI must develop a solid **culture of horizontal communication** instead of channeling information through a central coordinator (the facilitator) or a mailing list. These same tools can also be used for the presentation of reports or research. The Steering Committee must play an important leadership role in encouraging the use of these types of innovative technologies among network members.

Periodic development and maintenance of the Web site also offers benefits in terms of transparency, ensuring that Steering Committee decisions and Assembly discussions are published on the site in a timely manner.

- **Sensitive management of the transformation** of a diffuse, decentralized network into one that is more institutionalized and formal, with centralized decision making and a high degree of concentration of strategic activities. To implement such transformations, the Steering Committee must take into account members' perceptions of the structural changes and the organizational identity that is being developed. It is important to keep in mind the members' "social" perception of the changes (new procedures, new actors included in discussions and incorporation of new members) and the "cognitive" perception (common language, not excluding ideas, incorporating new approaches into the discussion process, and fostering reflection among network members). With regard to identity, it is important to remember that changes must be aimed at maintaining a certain degree of "organizational memory" of DIRSI and should be implemented gradually so as to ensure continuity with what has been done so far. Keeping these points in mind is important for **reducing the likelihood of tensions and conflicts** in the network and facilitating the implementation of structural and procedural changes. To this end, it is recommended that the network **begin with the changes that are likely to meet the least resistance,** such as the redefinition of selection criteria and mechanisms for recruitment of new members, as well as the use of innovative technologies and enhancement of the Web page, and **later move toward the potentially more controversial reforms** (in operations, administration and/or finances), such as the redistribution of functions of the Steering Committee and the Assembly, modification of the network's organizational structure and system of governance (if necessary), and establishment of an organizational headquarters where dissemination of information, administration and communication are centralized.

Annex: Sources of information

The following is a list of the sources of information used in this study:

FORMAL/INTERNAL DOCUMENTS OF THE DIRSI NETWORK:

- Network by-laws
- Amendment to the network by-laws: Plenary Members and Associate Members
- Governance of the DIRSI network
- Model contracts for subsidies and services

INFORMATION IN THE PUBLIC DOMAIN:

- http://www.dirsi.net/espanol/
- http://www.researchictafrica.net
- http://www.lirneasia.net/
- http://www.lirne.net/
- http://www.latn.org.ar
- www.cprsouth.org

FIRST-HAND INFORMATION:

- Semi-structured telephone interviews with members of the DIRSI network.
- Email interviews with members of other networks / organizations selected for international case studies.

OTHER SOURCES:

- International Development Research Centre [IDRC] (2006). *Survey of Coordinators and Members of IDRC-supported Networks (1995-2005) Final Report*.
- Latin American Trade Network [LATN] (2007). *LATN HISTORY: Expansion, Growth and Resilience. Exploring the Origins, Making and Expansion of a Research Network*.