Document of
The World Bank

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Report No: 33924-RO

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$60 MILLION

TO

ROMANIA

FOR A

KNOWLEDGE ECONOMY PROJECT

October 24, 2005

Private and Financial Sector Development Unit
Europe and Central Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective October 24, 2005)

Currency Unit	=	RON
RON 3.01	=	US$1.0
US$0.33	=	RON 1.0

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

CAS	Country Assistance Strategy
CEE	Central and Eastern Europe
EBRD	European Bank for Reconstruction and Development
ECDL	European Computer Drivers License
EU	European Union
FA	Family Association
FIAS	Foreign Investment Advisory Service
GOR	Government of Romania
KE	Knowledge Economy
IBRD	International Bank for Reconstruction
ICR	Implementation Completion Report
ICT	Information and Communications Technology
LIL	Learning & Innovation Loan
LCeN	Local Community e-Network
MCIT	Ministry of Communication and Information Technology
MIS	Management Information System
MoPF	Ministry of Public Finance
MSME	Micro, Small and Medium Enterprise
NGO	Non Governmental Organization
NSP	National Support Provider
PMU	Project Management Unit
PPF	Project Preparation Facility
PPP	public-private partnership
R&D	Research and Development
ROL	Romanian Lei
SEI	(Romanian) National Computer-Based Education System Program
SEN	The (Romanian) National Electronic System
SEP	self-employed person
SIL	Sectoral Investment Loan
SME	Small and Medium Enterprise
UN	United Nations
USAID	United States Agency for International Development
USD	US Dollar
WB	World Bank
WEF	World Economic Forum

Vice President: Shigeo Katsu
Country Director: Anand K. Seth
Sector Managers: Gerardo Corrochano/Maureen McLaughlin
Task Team Leaders: Gregory T. Jedrzejczak/Toby Linden

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Knowledge Economy Project

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ROMANIA
Knowledge Economy Project
Project Appraisal Document
Europe and Central Asia Region
ECSPF and ECSHD

Date: September 30, 2005
Sector Managers: Gerardo Corrochano/ Maureen McLaughlin
Country Director: Anand K. Seth
Project ID: P088165
Lending Instrument: Specific Investment Loan (SIL)

Team Leaders: Gregory T. Jedrzejczak / Toby Linden
Sector(s): Micro and SME Finance (25%), Telecommunications (23%), Primary Education (21%), Secondary Education (21%), Sub-national Government Administration (10%)
Theme(s): Education for the Knowledge Economy; Administrative and Civil Service Reform; Small and Medium Enterprise Support

Project Financing Data

[X] Loan [ ] Credit [ ] Grant [ ] Guarantee [ ] Other:

For Loans/Credits/Others:
Loan Currency: US$
Amount (US$m): $60
Proposed Terms: VSL
Borrower Rationale for Choice of Loan Terms Available on File: [x] Yes [ ] No
Grace period (years): 5 Years to maturity: 17
Commitment fee: ¾ of 1% minus waivers Front end fee (FEF) on Bank loan: 1% minus waivers

Type of repayment schedule:
[x] Fixed at Commitment, with the following repayment method: semiannually April 15 and October 15

Financing Plan (US$m)	Local	Foreign	Total
BORROWER	2.7	7.3	10.0
IBRD	10.9	49.1	60.0
OTHER			
Total:	**13.6**	**56.4**	**70.0**

Borrower: ROMANIA
Responsible Agency:
MINISTRY OF FINANCE
Romania
Partner Agency:
MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY
Address: Bd. Libertatii No. 14, Sector 5, Cod 70060, Bucharest, Romania
Contact Person: Diana Voicu
Telephone: 40 21 400 1701 Fax: 40 21 400 1701

Estimated Disbursements (Bank FY/US$m):

	2006	2007	2008	2009	2010
Annual	5.15	22.12	11.26	10.67	8.80
Cumulative	5.15	27.27	38.53	49.20	60.0

Project implementation period: 5 years
Expected effectiveness date: 03/2006 **Expected closing date:** 06/2011

Does the project depart from the CAS in content or other significant respects? ***Ref. PAD A.3***	[ ]Yes [X] No
Does the project require any exceptions from Bank policies? ***Ref. PAD D.7*** Have these been approved by Bank management? Is approval for any policy exception sought from the Board?	 [ ]Yes [X] No [ ]Yes [X] No [ ]Yes [X] No
Does the project include any critical risks rated "substantial" or "high"? ***Ref. PAD C.5***	[X]Yes [ ] No
Does the project meet the Regional criteria for readiness for implementation? ***Ref. PAD D.7***	[X]Yes [ ] No

Project development objective ***Ref. PAD B.2, Technical Annex 3***
The objective of the Project is to accelerate the participation of knowledge disadvantaged communities in the knowledge-based society and economy in Romania. To this end, the Project will enable the Borrower to implement the National Strategy for the New Economy and Implementation of the Information Society, and the European Union programs related to the information society for all.

Project description *[one-sentence summary of each component]* ***Ref. PAD B.3.a, Technical Annex 4***
The project consists of the following components:
Component 1: Access to ICT in Knowledge Disadvantaged Communities and Improved Digital Literacy. The objective of this component is to provide access to ICT services through the provision of physical equipment and connectivity, as well as providing the local populace with the basic digital literacy skills required to increase their utilization of knowledge.
Component 2: Development and promotion of e-government services. The Project will finance the full-scale implementation and deployment of a small number of e-government services currently being piloted through the use of LCeNs as the primary means of access, prior to full-scale deployment on a national level.
Component 3: Promotion of e-commerce and innovation support for MSMEs. This component will facilitate Internet based networks between micro, small and medium enterprises (MSMEs), both in horizontal clusters and vertical supply chains, serving as a platform of both absorption of innovations and market support, making MSMEs better informed, more competitive, and placing Romania in-line with EU standards.
Component 4: Project Management. The Project will be managed by the MCIT through a Project Management Unit.

Which safeguard policies are triggered, if any? ***Ref. PAD D.6, Technical Annex 10***
not applicable

Significant, non-standard conditions, **if any**, for:
Ref. PAD C.7
Board presentation:
None
Conditions of Effectiveness
Project Operational Manual approved by the MCIT and satisfactory to the Bank
Covenants
Establishment of the PMU with adequate staffing and resources not later than thirty days after the effective date of the Loan Agreement.

A. STRATEGIC CONTEXT AND RATIONALE

1. Country and Sector Issues

In February 2000, Romania began the negotiations process for EU membership. In line with this, the Government of Romania (GOR) opened all negotiation chapters, including that relating to Information and Communications Technology (ICT). In doing so, Romania committed itself to adopt all the EU regulations in the ICT field. Negotiations for EU membership are now complete.

The Ministry of Communications and Information Technology (MCIT) provides government leadership and the coordination required to support Knowledge Economy (KE) activities. Through the adoption of the European Directives concerning ICT, Romania has successfully finalized the legal framework required for completing the process of liberalization of the telecommunications market. The policy and institutional framework for a Universal Service Fund has been established, and implementation began in 2004. The GOR has also established an ICT task force, the Information Technology Promotion Group, led by the Prime Minister. A National Strategy for the New Economy and the Implementation of the Information Society (2002-2010), built on the Lisbon agenda[1], emphasizes improvement of ICT infrastructure; the need to increase the use of technology and e-services across Romania; training of human resources; and, achieving network security. It is also used as a benchmark for this Project.

Education

Romania has undergone a comprehensive education reform program focused on the formal system at primary, secondary and tertiary levels; in part supported by a series of Bank operations. Significant improvements have been made regarding education quality. There has been a major shift away from the centralized system which was based on a standardized curriculum, a single textbook per subject and ineffective student evaluation systems and towards a flexible curriculum framework, alternative textbooks and a modern evaluation system. Improvements were also made in teacher training, finance and management. Current efforts are aimed at tackling equity issues, especially in rural areas. For example, while overall 80% of young people (ages 15-24) graduated from secondary education, in rural areas this number falls to 62% and among poor people to 48%.

The Government's National Computer-Based Education System program (SEI) was introduced in support of ICT education in upper secondary schools. Total SEI cost is estimated at $200 million, of which approximately half has already been implemented. Under SEI, high schools are provided with:

- Computers, standard software, and connectivity equipment, plus technical support: 1,510 computerized laboratories installed and configured (of which 1,220 were installed between 2001 and 2003). This covers 20% of schools;
- Educational software, content and knowledge management, administrative support software platforms – AEL LCMS;

[1] The Lisbon Agenda called for transforming the EU into "the most competitive knowledge based economy by 2010, capable to sustain economic growth by creating new jobs and by the existence of an increased economic cohesion".

- Educational multimedia content: 230 lessons delivered by 2003; in 2004 increased to 430; and,
- Training: 14,000 teachers and 2,600 administrators have already been trained.

SEI has developed an educational portal: http://portal.edu.ro, which receives approximately 450,000 hits per week. Since 2001, it has offered IT support for administrative projects such as ADLIC (national selection and admission of 8th grade graduates in high schools and vocational schools), which received a "Best Practice" award from the European Commission.

The Government now wishes to extend the penetration of computers to basic and lower secondary schools, building on the lessons of the SEI project. Currently, approximately 20% of these schools have the desired level of equipment and trained teachers.

ICT for Development

Overall teledensity in Romania is relatively low, with 21 percent fixed-line penetration and a wide disparity between urban and rural areas. There are over 40 simple telecenters currently operating within a number of villages, including: Frecatei (Braila), Balasesti (Galati) and Iana (Vaslui). Only 16 percent of Romanians use the Internet, compared with the European average of 40 percent; though usage is growing rapidly in spite of high costs. The MCIT has put forth an ambitious program to provide universal access to the Internet, and other telecom services, in line with the EU integration agenda.

Romania ranks behind other new EU members countries in terms of technology development capacity. The key identified weaknesses are in technological sophistication, business spending on research and development (R&D) and Government procurement of advanced technology products[2]. Romanian ICT companies lack effective marketing and management skills, limiting their international competitiveness, and software companies suffer from persistent "brain-drain," with almost 30 percent of polytechnic university graduates taking higher-paying jobs abroad. The local ICT market remains limited, as Romanian firms have been slow to embrace the full capabilities of ICTs, and the majority of demand comes from multinational firms in Romania. The "Internet economy" has been slow to emerge in Romania. Romanian small and medium enterprises (SMEs) have been late adopters of ICT, even through the capacity of embedding ICT in operational activities ranked in line with the global average. Despite major challenges, Romania's software industry is growing at a rapid rate (at an average of 15% over the past 20 years; equivalent to approximately double the global rate).

The National Electronic System (SEN) was launched in 2003. The system is designed to increase the efficiency in the interaction with public administration, reduce costs for both public and private entities, limit the potential for corruption, and increase public trust in the administration. The government one-stop-shop portal, however, still remains largely non-interactive and provides a very limited number of services. Major challenges are to develop the proper system for monitoring and evaluation, getting feedback from users, and scaling-up pilots. Citizen awareness of and access to the government e-services remains low – since its launch SEN has been accessed 1.9 million times by only 90,000 visitors.

[2] Source: World Economic Forum – Global Competitiveness Report 2002-2003.

The MCIT has also initiated pilot projects in various areas of government e-services, including e-procurement, e-voting and e-taxation. The public procurement electronic system (PPES), launched in March 2002, is currently used by 1,000 public institutions and more than 10,000 companies. The number of product categories currently being traded over PPES has increased to 80. According to the Government, PPES has generated savings of over €100 million.

2. Rationale for Bank Involvement

The Country Assistance Strategy (CAS) for Romania (Report 22180-RO) identifies accession to the European Union as a key priority for development. In 2001, Romania adopted the e-Europe+ Action Plan, designed specifically for then-CEE Candidate Countries, as part of the effort to implement the Lisbon Agenda. This has since been updated under the e-Europe 2005 Action Plan which emphasizes the objective of stimulating secure services, applications and content based on a widely available broadband infrastructure[3].

The proposed Project supports the CAS objectives of promoting growth through private sector development, by promoting the use of ICT technology as a means for driving micro- and SME-led growth, of building human capital and reducing poverty. Related to the KE sector, the Bank has funded the Romania e-Readiness Report in 2003. There are a number of operations related to knowledge economy activities, including the Private Institution Building Loan, the Public and Private Institution Building Loan, the Education Reform Project and the Higher Education Reform Project. However, none focus on tackling KE issues in a coherent, focused, and strategic manner; the underlying basis of the proposed Project and the Bank's comparative advantage. Foreign donor activities are fragmented and pilot-based, and overall, lack a systemic, cross-sectoral approach.

Finally, the Bank, with its multi-sector approach, is able to advise the Government on balancing public goods with private initiative. The local community e-networks (LCeNs) are mainly a public good, but private involvement is the best way to ensure that public money is spent in a cost-effective and demand-driven way to promote long-term sustainability.

3. Higher Level Objectives to Which the Project Contributes

The Project is expected to ultimately contribute to the development of an information society, better prepared to integrate and compete within the EU. The Project is expected to improve the quality of government services, including regulatory and judiciary functions, as well as creating an enabling business environment, especially to support the development of new MSMEs. Cost-saving efficiencies would be generated through implementation of transparent e-Government services, while the employment of ICT and Internet services would contribute to the improvement of the quality of and access to education in primary and lower secondary schools.

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[3] European Commission communication COM(2002) 263, *eEurope 2005: An information society for all: An Action Plan to be presented in view of the Sevilla European Council 21/22 June 2002* (2002).

B. PROJECT DESCRIPTION

1. Lending Instrument

The proposed Project is a Specific Investment Loan of $60m, with project implementation over a 5 year period.

2. Project Development Objective and Key Indicators

The objective of the Project is to accelerate the participation of knowledge disadvantaged communities in the knowledge-based society and economy in Romania. To this end, the Project will enable the Borrower to implement the National Strategy for the New Economy and Implementation of the Information Society, and the European Union programs related to the information society for all.

Specifically, in targeted disadvantaged communities, Local Community e-Networks (LCeNs) would evolve into a daily tool for education, business and public communications with the Government, with increasing private management and financial self-sustainability.

3. Project Components

The Project components form a coherent set of interventions built around the physical, human and financial resources selected disadvantaged communities need to enable them to use and leverage knowledge in their daily economic and social lives (see also diagram in Annex 4).

Component 1: Access to ICT in Knowledge Disadvantaged Communities and Improved Digital Literacy (US$43.1 million, loan proceeds US$37.0million)

The objective of this component is to provide access to ICT services through the provision of physical equipment and connectivity, as well as providing the local populace with the basic digital literacy skills required to increase their utilization of knowledge.

Subcomponent 1A. Improving Access by Establishing Local Community e-Networks (LCeNs)

The Project will establish at least 200 multi-purpose local e-networks (LCeNs). LCeNs will serve as "knowledge-centers", providing information, services and benefits to citizens and small businesses in selected knowledge disadvantaged communities.

There is no single business model envisaged for LCeNs, either in terms of design and technological scope or management and ownership arrangements. Rather, communities will prepare a proposal as to which model meets their needs and is affordable. However, it is expected that in almost all places there will be multi-purpose nodes at basic and lower secondary schools, local administration offices, public libraries and business community centers. These nodes would share management, staff and technologies (including broadband access) to maximize use and impact and to reduce connectivity and other costs.

During preparation, a typology of five basic models was developed, based on an extensive analysis of data including from a survey of a nationally representative sample of communities, suitable to disadvantaged communities and from which those communities will adapt and adopt. During implementation of the Project Preparation Advance, these models are being tested and evaluated; the number of LCeNs will expand as the evaluations demonstrate effective practices in different aspects of LCeN development. The evaluations will document lessons of experience and options for concerted action on practical matters of common concern to the disadvantaged communities. Nine LCeNs have been initiated under the Project Preparation Advance (PPA).

Approximately 45% of the most disadvantaged communities will be eligible to participate in the project. A typology of 13 community types has been developed during project preparation (based on socio-economic, technological, education, and business factors). Communities will prepare an application, including a three-year development plan indicating the level of public subsidy anticipated (central and local). Selected communities will be determined through a competitive process, with their applications being evaluated accordingly to an agreed scoring matrix.

LCeNs will be public resources, available to communities, with access governed by a set of established and agreed rules. When established, LCeNs would be publicly owned, but from the outset open to private initiative. Under the proposed flexible model of LCENs, private parties will have available a whole spectrum of involvement, such as: providing content for the LCENs activities; adding services to LCENs activities (for example, opening an internet café, or publicly available email services); management contracts for LCENs nodes, buying out public share in the LCENs. Private investment can vary in size from small (e.g. one computer station) to relatively large (investment in a number of LCENs). It is expected that 20 percent will be run by private companies or public private partnerships with municipalities by the end of the Project. The experience of other Bank projects in relation to public-private partnerships (PPPs), such as the implementation of the Romania Social Development Fund, will be used.

LCeNs will be supported by a National Support Provider (NSP). NSP will provide online advice and support to LCeNs staff and users on technical and application questions in response to client demand and professional support to the different LCeN client-groups, specifically education staff and public administrators (support to SMEs will be provided through the e-Store – see Component 3 below). The NSP will also develop a knowledge portal, based on the information these client groups need on a daily basis. The NSP will be originally financed from the public resources (including the Loan proceeds), but over time, it is expected to be partially financed from fees. By the end of the Project, in accordance with the Government's strategy, the NSP would be managed by a private firm or a public-private partnership could be established.

Loan proceeds will finance equipment (including both initial installation and replacement of out-of-date equipment), connectivity infrastructure, training, and consultants for network design, support to communities in the preparation of applications, and outreach/promotion activities. In addition, financing will be provided to LCeNs to pay for broadband connectivity.

Subcomponent 1. B. Digital Literacy for Communities

In support of businesses, this subcomponent will support activities which promote increased access to ICT and e-services via LCeNs. It will focus on how emerging ICT technologies can provide practical benefits, how to apply them to business processes, and how to find appropriate sources of help to do so. Initially, training programs will include simple workshops and peer-to-peer contacts on digital literacy, including use of the Internet. These training programs will be offered by private providers and a basic course will be paid for from loan proceeds on the competitive basis, also using the e-Store instrument (Component 3.A.). Additional courses will be provided on a fee basis.

Subcomponent 1.C. Digital Literacy for Schools

This subcomponent will focus on the enhancement of digital literacy within primary and lower secondary education levels. Activities will address the improvement of primary and lower secondary education through the integration of information and communication technologies (ICT) into the classroom, thereby improving students' skills and knowledge. The Project will utilize LCeN nodes that are based in schools and public libraries.

Activities supported will be:

- The development of integrated ICT-based curricula, teaching and learning materials (teachers' guides, student worksheets, sample lesson plans) and applications for selected subjects (e.g. mathematics, science, languages). Non-proprietary software will be used.
- Teacher training in: computer literacy; use of the ICT-based teaching-learning materials; and use of the support service and collaboration with other schools.
- Establishment and use of communities of practice (school networking) to promote sharing of information and resources assisted by the NSP.
- Training of administrative staff and ICT support personnel in schools.

Component 2: Development and promotion of e-government services (US$8.8 million; loan proceeds US$7.0)

The Project will finance the full-scale implementation and deployment of a small number of e-government services currently being piloted through the use of LCeNs as the primary means of access, prior to full-scale deployment on a national level. This includes the development of an appropriate infrastructure, implementation of a compatible legislative framework, development of an institutionalized and technological platform, and the training of human resources.

Subcomponent 2A: Online system for notifications and authorizations of local businesses

The objective of this component is to develop an online system for the registration of family associations and self-employed individuals.
The system would enable enterprises to remotely file documents in electronic format and receive feedback directly from Government through the electronic system. LCEN nodes will be used as access points.

Subcomponent 2B: Integrated network civil information and documents

The objective of this subcomponent is to develop an integrated network for citizen status information and documentation. The Project will finance the development of the "Public Community Services through the National System for the Personal Evidence". Citizens using LCeNs will be able to apply online for birth and marriage certificates and enable individuals to update marriage status, deaths of family members, etc. Applicants will be able to track the progress of their application online. Training will be provided by the Project to civil servants operating the system in a selection of communities in which LCeNs have been established.

Component 3: Promotion of e-commerce and innovation support for MSMEs (US$11.9 million; loan proceeds US$11.3 million)

This component will facilitate virtual – Internet based – networks between micro, small and medium enterprises (MSMEs), both in horizontal clusters and vertical supply chains. These networks will serve as a platform of both absorption of innovations and market support, making MSMEs better informed, more competitive, and placing Romania in-line with EU standards.

Subcomponent 3A. Portal for promotion of e-commerce and business networking

The e-Store portal would provide MSMEs with relevant information, how-to tools, training, consulting, references and other resources for developing e-business competency, to share knowledge, and to establish contacts for commercialization of new technologies, the development of supply chains and business solutions. The e-Store will also help Romanian enterprises to market their products abroad through e-commerce. The e-Store will capitalize on existing "brick-and-mortar" networks of sector oriented associations of producers and service providers. A non-proprietary, open, web-based platform will be used.

Although the e-Store is to be established and initially run using proceeds of the loan, by the end of the Project its running costs will be partially covered from non-loan and non-government sources. The main sources of revenues are expected to be transaction and membership fees, and revenues from advertising space.

Subcomponent 3B. Grant Facility

The Facility would provide grants to individual small and medium enterprises, self-employed persons (SEPs) and family associations (FAs), enterprise associations and clusters (or consortia

of these clients) to facilitate e-business adoption and improve the competitiveness of Romanian firms in domestic and foreign markets. The priority would be given to projects implementing e-business solutions aimed at developing support infrastructure by offering Internet-based services to sector associations, industrial clusters, and commercial service providers oriented on groups of firms. An Evaluation Committee will assess the financial viability, economic and social benefits of the plan, and eligibility of the applicant to co-finance and execute the project. All services financed under the specific Project would have to be, where possible, acquired from commercial providers using open procurement through the e-Store. An independent impact assessment based on TORs acceptable to the Bank will be carried out to assess demand, improvements in productivity, revenue and employment changes. This assessment will serve as a key input for the subcomponent for the implementation completion report of the project.

Activities eligible for financing under the grant facility would include:

- Professional service costs necessary to assess new or existing business markets (including e-business costs and benefits), and prepare business plans to re-engineer business processes, products, and ICT systems (these activities will be funded at 100%);
- Initial software and networking costs; website development, hosting and security certification;
- Acquiring equipment and devices embedding innovative elements and modern technologies such as: production machinery, tools, and office equipment;
- e-Business information services; and
- Expenditures incurred in relation to activities aiming at export-orientated goals, such as local and international trade-fairs/exhibitions.

Salaries and other operational costs (such as office rental) would not be eligible.

Component 4: Project Management (US$6.1 million, loan US$4.7 million)

The Project will be managed by the MCIT through a Project Management Unit (PMU), where the Project Manager, fiduciary and support staff, plus technical staff dealing with communications and IT issues would be housed. In addition, a small number of technical staff of the PMU would be located as necessary in participating agencies.

4. Lessons Learned and Reflected in the Project Design

The Bank's experience in community-driven development

Bank experience in other projects in Romania, as well as numerous activities worldwide, has been most successful when the project team has worked with communities to help them identify their needs and priorities, with follow-up implementation activities designed to emphasize sustainability and transparency. This has been reflected in the project design through the demand-driven process for establishing LCeNs and the decentralization of LCeN resources and responsibilities to communities.

Balance Private-Sector (bottom-up) and Public-Government (top-down) Structures

This balance is struck at various points. For example, the government determined that only knowledge-disadvantaged communities will be eligible, but within this group the participants in the Project will be competitively selected. The architecture of LCeNs will be open to allow private sector operators to 'plug in' and provide services. The private sector will be involved in the content creation: knowledge providers rooted in local communities know best the type of information communities require, and what type of information community members are ready to pay for. The Project emphasizes the flexibility of proposed solutions which will allow a variety of business models (ownership and management) for LCeNs, and changing dynamically whenever technology or different management offers less expensive and more efficient solutions.

Share Best Practices and Coordination Needed to Meet the Knowledge Economy Agenda

Analytical work conducted by the Bank (launched in the World Development Report 1999) on the knowledge economy emphasizes the need to build synergies on the connections between and across traditional sectors, while acting in specific and selected areas. This innovative, but potentially complex, Project requires that several ministries and agencies work together closely. This task is being co-managed on the World Bank side by task team leaders from different divisions and the project team has emphasized the need for a comprehensive and well-coordinated PMU for implementation.

Need to focus on sustainability

The Project approach which brings ICTs into disadvantaged areas through public financing runs the risk of financing shortage when Project resources come to an end. All LCeNs therefore under the Project will have a strategic development plan and the pilot approach will have a performance evaluation. Building blocks for success must be in place to ensure their survival, including a realistic mix of public and private financing. To be sustainable, based on international experience, the LCeNs will need to: (i) offer services and content that meet the needs of the community, content which needs to be developed and adapted; (ii) create an association to promote a larger roll out and to forge new partnerships (government agencies, national and international organizations, ICT and other commercial and service firms) and; (iii) have appropriate service contracts reflecting responsibilities, service levels, and obligations. A report, which is acceptable to the Bank, on promoting sustainability was prepared and adopted by the Steering Committee.

Need for extensive teacher training and open software platform for schools

The SEI program in secondary schools shows that teachers need extensive training, on an ongoing basis, to have the confidence and skills to utilize ICTs. The use of proprietary software and platforms also severely constrained the accessibility of systems. In addition, it is necessary to ensure that ICT-based training is not perceived as teacher's replacement or diminishing teacher's role, and that the Internet is promoted as a source of information, not an end in itself.

5. Alternatives Considered and Reasons for Rejection

It would have been possible to focus on low-technology solutions, as has been done by the USAID project. This would have built upon specific Romanian experience and lower costs would have meant reaching more communities. However, this approach would not address e-Europe 2005 objectives, which specifically target broadband access as the key for engagement in the knowledge society.

A wholly private sector model could have been used under which all the costs, or at least all the recurrent costs, would be met from private sources. However, this model was not considered appropriate given that the GOR was clear it wished for only knowledge-disadvantaged communities to participate, and there is a strong public good rationale for the Project.

C. IMPLEMENTATION

1. Institutional and implementation arrangements

The Loan Agreement will be signed between the World Bank (IBRD) and Romania, represented by the Ministry of Public Finance (MoPF). An agreement will be signed between MoPF and MCIT setting out their respective roles and responsibilities.

A Steering Committee, consisting of high-level representatives from the various ministries and agencies involved in the project implementation, has been established to provide project oversight, to set the strategic directions and to issue operational guidelines. The Committee is chaired by the Minister of CIT, as GOR coordinator for ICT and knowledge economy activities. Membership will include a representative from each of the ministries and the agency responsible for managing the other project components. An operational manual covering both implementation and fiduciary arrangements is under preparation and will be finalized prior to effectiveness..

2. Monitoring and evaluation of outcomes/results

The PMU will have primary responsibility for monitoring different aspects of the project, using a variety of methods. Specific provision in the loan is made for meeting these costs. Evaluations will include both quantitative and qualitative methods, building on the work done during project preparation in identifying the needs of communities. The Government has prepared and adopted a plan for monitoring and evaluation during the course of the Project, which is acceptable to the Bank. The multi-agency nature of the PMU and of the Steering Committee will enable the results to be fed rapidly to all the agencies involved in project implementation.

3. Sustainability

International experience shows that provision of communication and IT facilities is not a goal in itself, and that to have a real impact on development, the introduction and use of such facilities and services must be done as an integral part of a multi-disciplinary effort of community development. International experience indicates that telecenters without strong rooting in

communities have major sustainability problems when government support is withdrawn, generally after 2-3 years of operation. Taking into account that LCeNs under the proposed Project will offer diversified and – at the same time –integrated solutions, according to the size and density of the population and the needs of the community, and that they will be located in disadvantaged communities, some 4 to 5 years should be realistically expected for their financial sustainability. The Project therefore will establish key stepping stones for this sustainability, and make the major investments in infrastructure and equipment early in the Project. Sets of qualitative and quantitative indicators will be agreed (annex 3).

The open architecture of LCeNs should remove an important obstacle to private investment in LCeNs observed in many countries when private risk capital is reluctant to support isolated and/or small-scale projects. Private investors will be able to build their applications within the network of a particular LCeN, providing to the community services supplemental to the ones provided by publicly sponsored nodes, thus bringing in healthy competitive pressures. This will include the production of local information to improve local knowledge structures.

Over time some of the costs of the LCeNs would be met by being integrated in a financing scheme of a given institution (for example a school budget, or local budget of training of unemployed), or by selling services to the market (e.g., training for ECDL—European Computer Driving License). EU funds for disadvantaged communities are also expected to be available by the Project end. The variety of LCeN nodes and client groups will also enable incomes sources to be diversified (see Economic Analysis in Annex 9 for further details).

LCeNs will be publicly owned, but with a strategic objective of transferring their assets into a public-private partnership or private company. This could take various forms: management contracts for parts (nodes) or whole LCeNs; franchising LCeNs (or nodes); bringing private parties (investors); or, possibly, full privatization. The timetable and end point of this process will differ from community to community. Percentage of LCeNs that have produced a satisfactory 3 year development plan for their operation after the Project support ends should be: 80% by March 31, 2009 and 90% by the completion of the Project.

The Agency for Small and Medium Enterprises already runs several grant programs, and would be well-placed to extend the experience to of the Grant Facility developed under the proposed project.

4. Critical risks and possible controversial aspects

To Development Objectives	Risk Rating	Risk Mitigation Measure
No fully operational LCeN prior to effectiveness reduces information about what works and what doesn't.	H	Use of pilot approach, in conjunction with an assessment of the pilot to consolidate lessons learned for the purpose of developing a framework for embarking on a large-scale program.
Risks due to comprehensive coverage, multi-sectoral nature, interdependence among components and complexity.	H	Proposed Project objectives will be phased, focus on a coherent set of subprograms, start with pilots in e-Government and LCeN programs and promote maximum institutional coordination and out-sourcing to the private sector.
Poor understanding and lack of support from communities and other stakeholders	M	Project design includes competitive selection of communities ready to commit resources, training for community leaders and administration officials, public campaign, training and hiring local leaders/facilitators
Risk to component results		
1. Access to ICT and Improved Digital Literacy: Communities may not be interested and/or support LCeNs. LCeNs may not become sustainable.	H	Extensive assistance will be offered to communities to identify their needs and potential benefits. A realistic program of the public support will be offered for LCeNs to become commercially viable. An evaluation framework of the pilot LCeNs will attempt to evaluate commercial viability and social impact, which will be discussed with GOR before scaling up further LCeNs to remedy possible shortcomings, work plans and/or resource allocations.
2. E-government: Institutional capacity will not be built to support reform and change management.	M	GOR has already introduced a number of successful e-government services. The Loan envisages training for administration officials to increase their capability to use and promote e-government services. E-government services financed by the Project are narrowly defined and their use will be carefully monitored by MCIT
3. Promotion of e-commerce and innovation support to MSMEs: Lack of demand from the local MSMEs leading to insufficient or poor quality Grant Fund proposals. 4. Project Management: Delays in implementation due to the lack of experience with the WB projects in MCIT and the need to coordinate across ministries	M H	The component will capitalize on existing "brick and mortar" business networks. The Fund facility will be reviewed and adjusted over time if stronger incentives are needed. Technical assistance, financial training and advice will be provided during inception and for a limited duration thereafter. Hiring of individuals for PMU with prior experience in the WB projects, intensified supervision by HQs and Bucharest based staff, and written agreements on roles and responsibilities of different ministries and agencies.
Overall Risk Rating	**M/H**	

5. Loan/credit conditions and covenants

Conditions of Effectiveness

Project Operational Manual approved by the MCIT and satisfactory to the Bank

Covenant

Establishment of the PMU with adequate staffing and resources not later than thirty days after the effective date of the Loan Agreement.

D. APPRAISAL SUMMARY

1. Economic and financial analyses

Institutions created and originally financed by the KE Project (LCENs, the support center, e-government services, and e-store) are designed to become self-sustainable after the Project completion by finding their place in the growing market for similar services. According to the Economist Intelligence Unit, this assumption is supported by macroeconomic forecasts of healthy economic growth (on average around 5 percent), and strong growth of private and public consumption (around 7 percent) – during the next 5 years.

Indirect budgetary annual costs, such as support to schools implementing ICT technologies, should be of the order of $1-2 million a year– relatively insignificant compared with the overall annual expenditures of the state budget of some $10 billion.

Scaling-up of the number of LCeNs to the remaining knowledge disadvantaged 1,000 or so communities after completion of the Project would approximately require an additional $100 - 150 million. By this time, Romania will very likely have the access to structural and cohesiveness financing from the EU, which would be a viable source to support this financing requirement. An end of project impact assessment of the installed LCeNs under the Project will be undertaken to serve both as an input to the Bank's Implementation Completion Report (ICR) as well as guide this potential expansion after the project completion.

2. Technical

The Project develops a coherent set of interventions to tackle market failures in knowledge disadvantaged communities who would otherwise not get access to broadband technology in the foreseeable future. In addition to the basic technology infrastructure, demand-driven services will be developed and provided through the infrastructure supplied. However, this public investment will be made more efficient by introducing in a planned and phased way and, at several points, competitive pressures and alternative management and financing models. Similarly, the e-Store and Grant Facility will be focused on micro, small, and medium enterprises, and SEPs and FAs who are least able to access upfront financing or new knowledge for commercial innovation.

The Project also promotes government coordination to generate a coherent and holistic framework for the project. Project preparation has involved multiple ministries and agencies, and this collaboration will be institutionalized (through the Steering Committee and PMU) throughout project implementation. The need for this cross-government coordination is one of the lessons of the Bank's analytical work on knowledge economy activities.

Finally, the Project design is deliberately flexible, given the innovative nature of the interventions. A learning process is built in, through piloting various activities and use of alternative models for LCeNs as well as an end-of-pilot assessment.

3. Fiduciary

The PMU within MCIT would be responsible for the financial management aspects of the Project. The financial management arrangements of the Project are acceptable to the Bank.

The significant strengths that provide a basis of reliance on the project financial management system include: (i) the simple funds' flow and centralized financial management arrangements; and (ii) the experience of the project's financial manager in implementing Bank-financed projects and satisfying Bank financial management requirements
There are no significant weaknesses of the project financial management system.

4. Social

The benefits for the poor should be significant. The Bank poverty assessment (September 2003) indicates that the risk of poverty in Romania is strongly correlated with the lack of education of a household head, poor educational opportunities for youth and adults, rural location, and passiveness of communities. The KE Project addresses all above poverty risk factors.

An assessment has been conducted to identify those knowledge disadvantaged communities eligible for participation under the Local Community e-Networks (LCeNs) subcomponent of the proposed Project. Using comprehensive datasets and indices of the geographic, economic and social dimensions of Romanian localities, a set of thirteen *k-typologies* was developed. These were established at the level of village and small urban areas (larger cities were excluded as they are the most k-developed communities in Romania). Since villages are part of *communa*, the village typologies were used to develop commune typologies based on their composite village types. In each case, the correlation of factors was very high.

Communities from five of these typologies, which represent the communities with greatest disadvantage, have been surveyed to pilot the introduction of LCeNs, based on a detailed questionnaire and the development of technological specifications. In addition, a nationally representative sample of 100 communities was surveyed to provide a comprehensive picture of k-development in Romania and benchmarks for the Project.

5. Environment

No issues arise.

6. Safeguard policies

This is a Category C project, with no construction or major renovations planned. No other policies are triggered.

7. Readiness (checklist)

This Project does not require any exceptions to Bank policies and is ready for implementation.

TECHNICAL ANNEXES

Annex 1. Sector background

The knowledge economy sector cuts through traditional sectors of ICT production, and its implementation in education, research, business, government, and public communication. Its products can be defined as goods and services which add to building of an information society.

ICT sector production

There are over 8,000 ICT companies, of which very small and small firms represent 92% of the total number of firms. The sector contribution to the national economy exceeds 8% of the turnover despite the fact that ICT companies represent only 2% of the total number of companies.

The hardware industry, after the severe contraction suffered in 1989, managed to recover through focusing on the assembly of the equipment from Asia. Foreign hardware companies have an active presence, with approximately 50% of the market share. The software industry grew quite remarkably. Starting practically from scratch, there are over currently 4,800 companies involved in software development as their primary line of business, often for foreign contractors.

Research activities in the field of ICT

The Program "INFOSOC – the Information Society" is a component of the National R&D and Innovation Plan for 2001-2005. The program objective is to develop the information society by developing the scientific and technological capacity, and increasing the participation of products and services specific to the knowledge economy. The INFOSOC Program budget is ROL 350 billion (equivalent to approximately US$11 million), of which, for the 2001-2003 period, projects in the amount of ROL 214 billion (approximately US$6.7 million) have been contracted.

ICT Access

Fixed lines

The penetration of fixed line telephony is about 60 percent (lines by the number of households). Fixed phone telephony penetration in Romania is still low compared to other EU candidates and new members. The waiting list for fixed phone lines is still long with an average waiting time of 2.7 years. The network is digitized in 74% and fully automated, and has a fiber-optics network of over 30,000 km.

Mobile

The mobile telephony market has recorded spectacular growth in the last 5 years and the market is highly competitive, with four main providers (three of which comprise the most significant share in the market). By June 30, 2004, there were more than 8.2 million users– with one third of Romanians aged over 15 owning mobile phones. The geographical coverage of the mobile telephony exceeds 95% of the Romanian territory.

Internet Availability

At the end of 2003, there were approximately 400 ISPs, mostly private companies.

At the end of the first half of 2004, there were approximately 4.5 million* Internet users– a growth from 1 million users in 2001**.

Public Access Points

Some 45% of the Internet users use public access points (29% access Internet from home and 26% from work).

The main public access points are Internet cafes (which exist especially in university centers) but also by the 2,800 post offices that offer ICT-based services, out of which 960 allow the transmission of electronic messages and over 600 permit public Internet access.

Affordability

The cost for Internet access is between 0.3 Eurocents/min (off-peak) and 0.8 Eurocents/min (during peak hours), lower than the cost of regular local calls of 0.21 Eurocents/min (off-peak) and 3.34 Eurocents/min (during peak hours).

ISDN dial-up access offers bandwidths of 64 or 128kbps, (compared to a maximum of 56Kbps over the classical connection) but is available at higher subscription costs between EUR 17.4 and Euro 26 monthly, and connection tariffs are like the regular phone connection.

Cable Internet connection cost depends on the guaranteed and maximum bandwidth available and the traffic included in the subscription cost and is between Euro 7.8 and 400 Euro (for unlimited traffic and 128kbps, guaranteed bandwidth).

Internet through leased lines is available from major ISPs. The subscription cost is of approximately EUR 400 to which one must add the leased line cost, which depends upon the bandwidth and the length of the line and is around 0.5Euro/km/month.

ICT in the education system

Educational institutions connected to Internet

	Education institutions connected to the Internet	Total number of education institutions	% of education institutions connected to the Internet from the total number of education institutions
County inspectorates	47	47	100%
Universities	75	75	100%
High-schools	927	1,365	68%
Elementary Schools	1243	12,627	9.8%

SOURCE: THE MINISTRY OF EDUCATION, RESEARCH AND YOUTH (LATEST STATISTICS)

* Sibis (Statistical Indicators Benchmarking the Information Society), Matching up to the Information Society, August 2003

** The World Bank – "ICT at a Glance"

No of computers and number of Internet connected computers per 100 students

	University	High-school	Elementary School
Number of computers per 100 students	16.7	11	2
Number of computers connected to the Internet per 100 students	12	7.5	1

SOURCE: THE MINISTRY OF EDUCATION, RESEARCH AND YOUTH (LATEST STATISTICS)

The Computerized Education System Program (SEI)

As of 2001, over 90% of high-schools have been endowed with ICT laboratories typically with 25 work-stations. Software applications were developed to support the teaching process and to assist in the development of new educational modules by assembling the existing modules or by integrating new ones. Over 250 lessons have been developed, covering subjects from 8 disciplines of the high-school syllabus. Communication between MECT and the educational institutions and inspectorates is carried out by means of the www.portal.edu.ro portal.

ICT at the college level

The recent growth in the number of academic centers has led to an increase in the number of universities offering ICT specialization and a more uniform geographical distribution of such universities. Although the overall number of ICT specialists graduated in Romania would be sufficient to cover the current needs of the Romanian economy, the highly skilled work force in the field is concentrated in the big cities (especially in Bucharest) or emigrates, leaving the demand for such specialists uncovered in rural areas and smaller towns.

Distant learning (e-learning)

e-Learning has been developing rapidly in Romania, and is provided by:

- The Virtual Business University available over the Internet at www.uva.ro - an application developed by the National School of Political and Administrative Studies;
- www.academiaonline.ro - an eLearning portal build in partnership by the Institute of Educational Sciences, InsideMedia SRL and the Association for Career Excellency.

Some universities have opened distance learning centers. For example, the Academy of Economic Studies in Bucharest (www.ase.ro) has had 17,000 students enrolled in Open Economic Distance Learning in 17 towns and cities.

Cisco Networking Academy Program

Romania ranks 8th of the 100 countries where the Cisco Networking Academy is in place. In Romania there are currently 11 regional and 84 local academies. Starting from 2003, a similar program has been put into place in cooperation with Oracle (Oracle Internet Academy).

Business use of ICT

Around 85% of the companies have Internet access, and 47% of the PCs in Romania were used for business (13% were used by the administration and 40% by households).

In late 2003, the total number of ".ro" registered domain was 57,500 (8,976 in 1999).

Electronic commerce

B2C Electronic Commerce

At the moment, Romanian firms offer only browsing of products information and ordering online, while payment still takes place by traditional methods.

B2B Electronic Commerce

Development of B2B is still limited, as it implies the existence of complex, integrated financial and commercial management systems that can be interconnected between businesses by specific platforms. Currently the main incentive for B2B development is the Public Procurement Electronic System (PPES). It is expected that, as the PPES is generalized during 2004 (by the inclusion of all institutions and categories of products and services) B2B electronic commerce will also increase significantly, which will stimulate its use by SMEs.

Government use of ICT

All the government institutions have their own sites. The Government web side www.gov.ro presents the activity of the Government and includes links to the sites of Ministries and other Central Government agencies.

A considerable number of local public administration institutions have web sites, including web sites that allow for an interaction between citizens and such institutions.

The GOR recently adopted the National Strategy on e-Administration. Already the government gateway offers several online services for companies, and a large selection of official forms is available, involving more than 400 public institutions. MCIT has also initiated pilot projects in various areas of e-Government, including e-Procurement, e-Voting and e-Taxation. In this regard, the GOR has been quite progressive, and often ahead of some of its generally better-off neighbors. At the same time, developing the proper system for monitoring, evaluation and scaling-up pilots remains a major challenge.

Public use of ICT

ICT is mainly used as a communication tool and for web surfing.

The Civil Society Online

Civil society organizations gradually incorporate ICT in their activities; for example, the eRomania Gateway Association (www.ro-gateway.ro), Pro-Democrația Association (www.apd.ro), The Civil Society Development Foundation (www.fdsc.ro), The Foundation for an Open Society (www.osf.ro), The Romanian Association for Transparency (www.transparency.org.ro) etc. The Group for Social Dialog (GDS) has developed the www.ong.ro portal as an Internet communication and resource centre for NGOs. The Centre for Assistance for Non-Governmental Organizations (CENTRAS) is developing a database for non-governmental organizations, with financing from the Government of Canada. The Civil Society

Development Foundation (FDSC) has built the Civil Society Catalog in electronic format. Since 2002, this Catalog is available online, which gives each organization the opportunity to update their posted data and information.

Portals

Local portals offer links to Internet sites grouped by domains as well as discussion groups and free e-mail services, weather forecasts, local and national useful information and news.

Mass media

Most of the newspapers and magazines have an Internet presence, with shortened electronic versions of the printed issues. All radio and TV stations with nationwide broadcast and many of the local and regional stations have own web pages presenting the program schedules, the show hosts and even highlights or live streams of their programs.

ICT policies and progress to date

Romania has successfully adopted EU electronic communications directives[4] and is in the process of implementing the *acquis communautaire* for the Universal Service (US) component of the EU package. It includes Romania's participation in, and commitment to, the broad goals of the EU's e-Europe initiatives regarding broadband access and associated projects[5]. As documented by the summary of the EU country reports, during the last few years Romania made significant progress in implementing requirements of the Chapter 19 (ICT) for the EU accession

The e-Europe+ initiative was launched[6], however, in Romania funding for the e-Europe+ initiative largely comes from the national budget and the results have been constrained[7]. As a consequence the gap between Romania and the new member states is widening.

[4] In fact Romania transposed the directives earlier than some EU and acceding member states.

[5] See this portal for the range of broadband initiatives
http://europa.eu.int/information_society/eeurope/2005/all_about/broadband/text_en.htm

[6] See http://europa.eu.int/information_society/topics/international/regulatory/eeuropeplus/text_en.htm

[7] While Romania made progress it remains in a laggard position in comparison to the rest of the group of countries. See the final eEurope+ report http://www.emcis2004.hu/dokk/binary/30/17/3/eEurope__Final_Progress_Report.pdf

Annex 2. Major related projects financed by the Bank and/or other agencies

The Romania Knowledge Economy Project is designed to support the Government of Romania in its process of EU accession through assisting in the implementation of the e-Europe 2005 action plan and the Government's Information Society National Action Plan (2002-2010). The project, where possible, will build upon ongoing and recently completed Bank operations in Romania, with a specific emphasis on the following projects:

Private Institution Building Loan (P039251): Latest PSR- DO Rating: S, IP Rating: S

The Private Institution Building Loan's objective is to enhance the private sector's role in the economy through the transfer of state-owned assets and the creation of an enabling environment conducive to private sector growth and development. The loan has provided Technical Assistance to Romania, with a major focus on enhancing the country's business environment.

Public and Private Institution Building Loan (P069679)- Latest PSR- DO Rating: S, IP Rating: S

The Private and Public Sector Institution Building currently supports Romania's private sector based, with the objective of creating an environment conducive to private sector growth and development. The loan has focused on the implementation of key policy reforms which lay the foundation for the development of a dynamic business sector.

Education Reform Project (P008784)- OED Outcome Rating: Satisfactory

The Education Reform Project has supported the government's strategy for reform of pre-university education. The Project has focused on the improvement of basic and secondary education through strengthening curriculum and teacher training, assessment and examinations and textbook quality.

Reform of Higher Education and Research Project (P008793)- OED Outcome Rating: Satisfactory

The focus of the Reform of Higher Education and Research Project was to reorient higher education to make it more responsive to the market economy. This included the improvement of the quality of academic programs and the development of research centers to support university students.

Other international donors have also been actively involved in the Romanian ICT sector across a number of different dimensions. The Romania Knowledge Economy Project will leverage these efforts by contributing to the development of a KE framework which maximizes the benefits of activities in the telecommunications industry, and provides a context for their implementation.

USAID

USAID is undertaking an intervention in support of the Romanian IT sector. This strategy is focused on the telecommunications legal and regulatory policy reform, and will compliment the Knowledge Economy Project.

European Bank for Reconstruction and Development (EBRD)

EBRD have long been active in the Romanian telecommunications sector providing financing support to private entities. This has included investments in Romanian mobile operators as well as telecommunications equipment manufacturers. In addition, EBRD assisted the Romanian Government through financing of the design, supply and installation of the earth station linked to the Eurovision network via satellite.

Annex 3. Results framework and monitoring

1. Results Framework

PDO	Outcome Indicators	Use of Outcome Information
To accelerate the participation of knowledge disadvantaged communities in the knowledge-based society and economy. To this end, the Project will enable to implement the National Strategy for the New Economy and Implementation of the Information Society, and the European Union programs related to the information society for all.	At least 40 percent of eligible people in targeted communities have used LCeNs as a tool for education, business or public administration and are satisfied with the results. At least 20 percent of LCeNs operate as sustainable PPP arrangements	Enhanced reviews of the project components for possible scale-up of the program supported by the Project
Intermediate Results One per Component	**Results Indicators for Each Component**	**Use of Results Monitoring**
Component 1 Provision of equipment, technical assistance, infrastructure, training, and funding for improving access to ICT in knowledge disadvantaged communities through the development of at least 200 LCeNs to serve as "knowledge-centers", providing information, services and benefits to citizens and small businesses, and to enhance the digital literacy of students and teachers at the primary and lower secondary education levels.	**Component 1:** In at least 200 disadvantaged communities, LCeNs are operating satisfactorily towards a sustainable future in line with their business plans (e.g., increasing number of users and services) Percentage of local community e-networks (LCeNs) that have produced a satisfactory 3 year development plan for their operation after the Project support ends: 80% by March 31, 2009 and 90% by the completion of the Project. 75% of targeted teachers are using their new skills in the classroom. 75% of people trained in LCeNs acquired basic digital literacy skills.	**Component 1** Slower establishment of LCeNs may signal need for more facilitation in communities. Missing LceNs development plans signal need for more TA. Ineffective teacher behavior in classroom signals need to redesign training. Low literacy numbers signals need to improve training curricula and methodology.
Component 2 Improvement in time and accuracy for individuals and businesses in communities with LCeNs to complete their transactions through the e-government services developed under the Project as compared to the existing processes.	**Component 2** 40 % improvement	**Component 2** Slow establishment of services may signal need to simplify process and enhance convenience to users. Investigate causes of any low take-up of services for client satisfaction levels
Component 3 Operation of a facility to provide co-financing grants from the proceeds of the Loan to eligible beneficiaries to facilitate e-business adoption.	**Component 3** 10,000 MSMEs, SEPs, and FAs introduced to ICT technologies through interactions with e-Store Number of grants awarded: 20 by the mid-term review (on or about March 31, 2008), and 300 by the completion of the Project.	**Component 3** Broadening of the awareness campaign Review and adjustment (if needed) of the functioning of the Grant facility

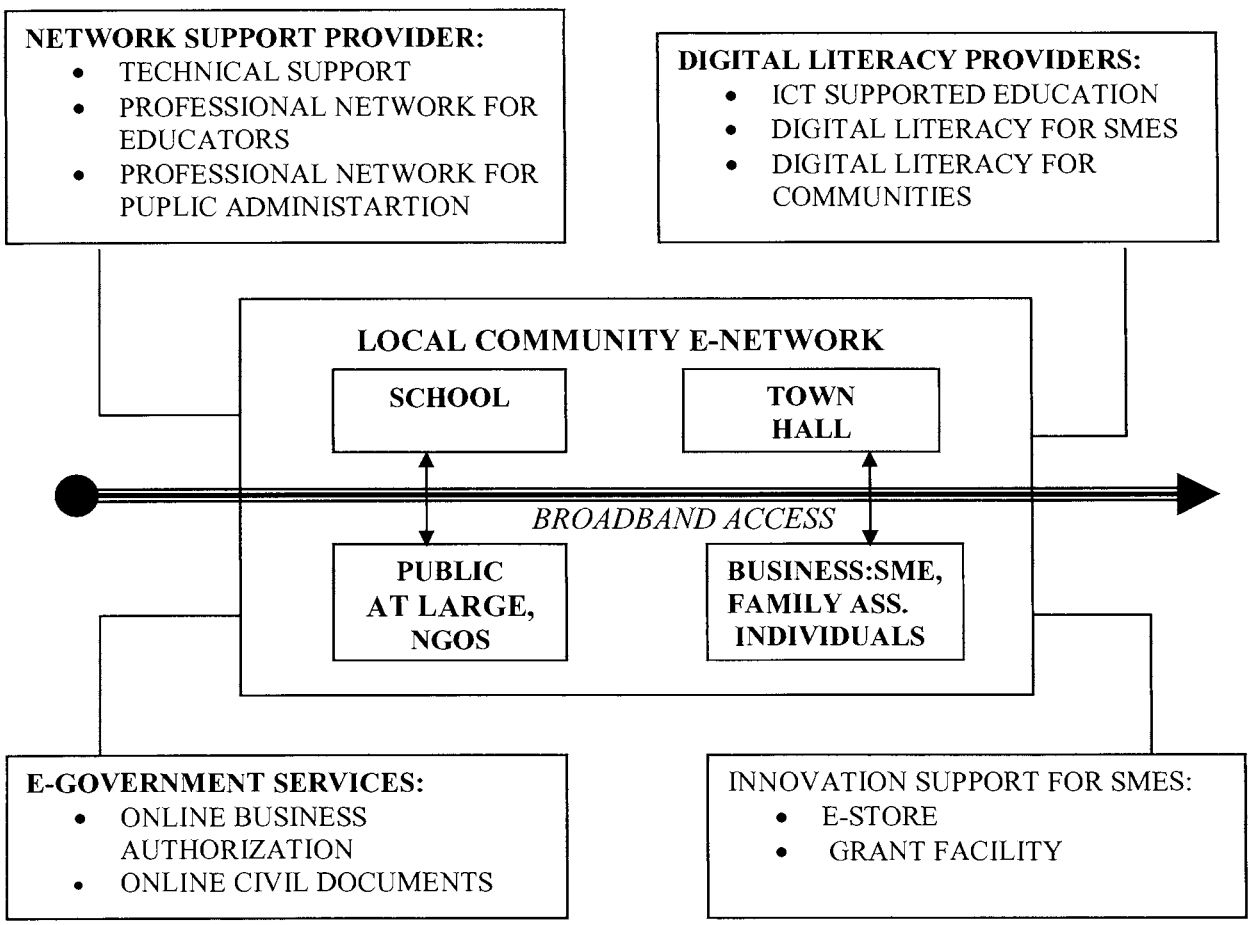
Arrangements for results monitoring (all figures cumulative)

		Target Values						Data Collection and Reporting		
Outcome Indicators	**Baseline**	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**YR6**	**Frequency and Reports**	**Data Collection Instruments**	**Responsibility for Data Collection**
Percentage of relevant population in targeted communities have used LCeNs as a tool for education, business or public administration and are satisfied with the results.	None		5%	10%	25%	40%		Annually	Survey	PMU
Percentage of local community e-networks (LCeNs) that have produced a satisfactory 3 year development plan for their operation after the Project support ends					80	90		annually	Survey	PMU
Results Indicators for Each Component										
Component 1: Number of LCeNs operating satisfactorily towards a sustainable future in line with their business plans	None	9	9	50	100	200		Annually	Sample surveys	PMU
LCeNs percentage operated under PPP arrangements	None				10%			Annually	Direct	PMU
Percentage of teachers who have taken courses are using their new skills in the classroom.	None			50%	60%	75%		annually	survey	PMU
Percentage of trained people in communities with LCeN who acquired basic digital literacy skills.	None		50	60	70	75				
Component 2: Percentage improvement in time and accuracy for individuals and businesses in communities with LCeNs to complete their transactions through the e-government services developed under the Project as compared to the existing processes.	To be taken at the beginning of LCeN operation				20%	40%		Annually	sample surveys	PMU
Component 3: MSMEs, SEPs and FAS participating in e-Store activities	None			1,000	5,000	7,000		Annually	Survey	PMU
Grants awarded			20	100	200	300		Annually	PMU data	PMU

Annex 4. Detailed Project description

There is a two-way link between the institutional side of the Project – Local Community eNetworks, and services supported under the Project (network support, digital literacy and ICT content, e-government services, innovation support to SMEs). The services will be promoted and made available for disadvantaged communities through LCeNs infrastructure, and LCeNs will be sustainable by providing a variety services. The proposed model is not exclusive, i.e. services provided by the LCeNs will not be limited to the services supported under the Project, and – on the other hand – the LCeNs will not be an exclusive channel to access services supported by the Project. These links are highlighted in the following scheme.

Functional links between KE Project components:



Component 1: Access to ICT in Disadvantaged Communities and Improved Digital Literacy

Subcomponent 1. A. Improving access through the development of Local Community e-Networks (LCeNs)

The Project will establish at least 200 multi-purpose local e-networks (LCeNs), in knowledge disadvantaged communities around the country. During implementation, these models will be tested and evaluated; the number of LCeNs will expand as the evaluations demonstrate effective practices in different aspects of LCeN development. The evaluations will document lessons of experience and options for concerted action on practical matters of common concern to the disadvantaged communities. Ten LCeNs are being established under the Project Preparation Facility (PPF). The evaluation will include a standard core of indicators relevant to at least 9 different sites to generate comparable data for the evaluation of project sustainability, effectiveness, and impact, and will be reviewed by GOR and the Bank prior to any scaling up. The list of communities eligible to participate will be determined based on agreed upon criteria related to socio-economic, technological and business disadvantage (see Annex 15). Communities will then be selected through a competitive process. Broadband Internet connectivity for selected disadvantaged communities will be funded from the Loan.

A prevailing model would be a local network of multi-purpose nodes at schools, local administration offices, public libraries and business community centers. These nodes would share management, staff and technologies (in addition to the broadband access). Community-based MSMEs, networked through LCeNs, are expected to be important supply-side and demand-side stakeholders in LCeNs development. They are potential providers and users of such value-added services as business software and consultancies. Private sector participation in LCeNs is also expected through providing training for operators and users, and content creation. At the inception, LCeNs would be publicly owned but with a strategic objective of transferring them into private hands. One aspect of the evaluation of particular interest to the Bank and GOR will be the costs of building and operating the LceNs in relation to the revenues generated (the business case).

While establishment of the LCeNs is envisaged as a public initiative, it is expected that private initiatives could "plug-in" into the local networks with private applications (for example, internet café) at any time and using broadband connectivity provided by the Project. Open architecture of LCeNs would remove an obstacle observed in many countries where private capital is reluctant to initiate isolated and/or small-scale projects. Under the model of local networks proposed for Romania, private investors can build their applications supplemental to the ones provided by publicly sponsored nodes. This would also bring a healthy competitive pressure to LCeNs. It is expected that 20 percent would be managed by private companies or public private partnerships with municipalities by the end of the Project.

Schools and community-based institutions and enterprises, networked through LCeNs, are expected to be important supply-side and demand-side stakeholders in LCeNs development. They are potential providers and users of such value-added services as educational and business software and consultancies.

LCeNs will be supported by a National Support Provider (NSP). The NSP will provide online advice and support to LCeNs staff and users on emerging technical and application questions in response to client demand. The NSP will be also used as a gateway for users seeking advice at the substantial issues. The NSP will be originally financed from the public resources (including the Loan proceeds) but overtime it is expected to be partially financed from fees. By the end of the Project, in accordance with the Government's strategy, the NSP could be managed by either a private firm or a public-private partnership

Subcomponent 1.B. Digital literacy for Communities

In relation to businesses and the general communities, the project will target issues related to the enhancement of digital literacy, primarily through leveraging the increased access provided to ICT and e-services through established LCeNs. It will focus on how the new ICT technologies can provide practical benefits, how to apply them to business processes, and how to find appropriate sources of help to do so. Initially, training programs will include simple workshops on digital literacy, Internet promotion, exchange of experience, and awareness focusing on specific sectors. These training programs will be offered by private providers and a basic course will be paid for from loan proceeds; additional courses will be provided on a fee basis. International experience shows that public libraries are important information points for the communities. Libraries are therefore strong candidates for publicly available nodes of LCeNs.

Subcomponent 1.C. Digital Literacy for Schools

On the education side, this subcomponent will aim to contribute to enhancing primary and lower secondary education through the integration of ICT into the classroom, thereby improving students' skills and knowledge. The Project will utilize LCeN nodes that are based in the basic and lower secondary education schools and help schools use the Internet and multimedia.

Concrete interventions in individual schools will include: (i) development of integrated ICT-based curricula, teaching and learning materials, and applications for selected subjects; (ii) teacher training in using ICT; (iii) establishment and use of communities of practice (school networking) to promote sharing of information and resources assisted by the NSP; and (iv) training of administrative staff and ICT support personnel in schools.

During the first phase of Project implementation the Ministry of Education and Research will develop a new Policy on Technology in Education, which will outline the steps it intends to take over the next four years, including revision of curricula and assessment (both the subject of IT and integration of ICT into other subjects) and revised guidance for school inspectors. In addition, the MOER will provide schools will guidance and recommendations on giving community access to computers placed in schools, to ensure safety, security and appropriate income generation and use.

A critical mass of teachers will be trained in each participating school, to build up a professional group of people, able to work with each other to solve problems and share ideas. A small number of schools will be targeted to receive intensive ICT training to develop models for the use of ICT

to transform teaching and learning in the Romanian context. These schools will be networked to share ideas and innovations.

In addition to teachers, administrative staff and ICT support personnel will get basic training on using computers, and on how to plan the access to computers of teachers and students, how to pay recurrent costs, how to develop agreements about community use etc.

Based on the updated curricula, new teaching and learning materials will be developed. Such materials as teachers' guides, student worksheets, sample lesson plans, as well as applications for selected subjects (e.g. mathematics, science, languages) will be designed and distributed to participating schools. Materials will also be made available to all the other schools through posting on the web.

Schools will be assisted by the NSP which will provide advice and support to teachers and ICT support personnel both on technical and on educational issues. Assistance will be offered both through a help-line and through web-based system. The NSP dealing with educational issues will also promote networking among teachers to share experience and extend good practice.

In addition to the concrete interventions at the level of selected schools and classrooms, the Project will also support policy changes in the following areas: (i) ICT and curriculum; (ii) ICT in schools; and (iii) ICT competences standards for teachers.

Component 2: Development and Promotion of e-Government Services

The component will enhance interaction of the society and the government and increase the transparency by introducing selected e-services. The Romanian Government has already initiated several national-scale projects providing e-government services. Also, it will guarantee 40 percent improvement in time and accuracy for individuals and businesses in communities with LCeNs to complete their transactions through the e-government services developed under the Project as compared to the existing processes.

Subcomponent 2. A. Portal for on-line notifications and authorizations for local businesses (G2B)

The objective for this component is to develop an online system for the registration of family associations and self-employed individuals. The portal for on-line authorization and registration will ensure a faster, more efficient and transparent way to register local businesses, FAs and SEPs.

Standardized registration of information will assure better management of documents and higher transparency of decision-making. Application and decision making process will be standardized and automated thus limiting opportunities for bureaucratic abuse and corruption.

The portal for online notification and authorization of local business will have two main components (sections):

- *The Public Section* will consist of:

- Information on the current legislation regarding local business, necessary steps for business registration to get the authorization from a town hall, and a public database comprising information about MSMES owned by private persons and family associations from communes involved in this project.

- Downloadable electronic forms.

- *The Private Section,* a secured electronic area, will be comprised of:

- Client (applicant) sub-section to check the status of an application

- An integrated electronic system for documents management and an archive for monitoring process workflow. Office representatives handling particular cases will be able to check all documents received, send the documents back to be revised, control deadlines for approval and the date of authorization approval, the date when authorization was sent to The National Trade Register Office for registration and the date when the registration was completed.

The main users will be community members with economical potential and entrepreneurial skills for starting a business, such as artisans, service providers for local markets, farmers and local agricultural producers who want to sell or to buy products and services.

Subcomponent 2. B. Integrated network for public information, and issuing and renewal of documents for citizens (G2C)

The network will be created to allow citizens to apply on-line and receive civil status certificates, such as birth and marriage certificates. The objective of this subcomponent is to develop of an integrated network for citizen status information and documentation. The project will finance provision of equipment, consultants' services and training to government authorities, and provision of internet service for county authorities.

The network will ensure efficient and affordable public services which are currently provided by city and county administration. These services will be available to citizens by integrating current Territorial Civil Status Offices and Ministry of Administration and Interior offices, and will lead to faster service, transparency and information accuracy. The integrated offices will also facilitate community services related to the evidence of the population by providing access to information for local and central government institutions, commercial institutions, etc. New community services for notification and intervention in case of emergencies (like earthquakes, flood, fire, etc.) could be also organized based on the new structure. The system will limit bureaucracy by limiting direct contacts between civil servants and citizens and will increase transparency of the decision making.

The network initial implementation phase will include Territorial Civil Status offices from towns and villages implementing the KE Project, with an objective to scale it up.

The new system will integrate the information system in the territorial civil status offices and the population evidence system. It will allow data collection at Territorial Civil Status level. The data and documents collected will be then sent to the county level where it will be aggregated, validated and will be used for the physical production of the documents. Territorial Civil Status offices will be still responsible for the production of the Civil Status certificates, including birth and marriage certificates. The production of the actual documents will be performed only at a county level, in order to ensure cost-effectiveness and to increase security.

The KE Project will cover the costs of hardware, software, on-site implementation, management and organization of the national center of expertise, training and support, national training activity, and connectivity in relation to this activity.

Component 3: Promotion of e-commerce and innovation support for MSMEs

Subcomponent 3. A. Portal for promotion of e-commerce and business networking

This subcomponent will introduce new tools and services for e-business capacity building of Romanian AFP, FA, and MSMEs. The Project is going to fill a niche of facilitating Internet based networks linking MSMEs, both, in horizontal clusters and vertical supply chains. These networks will serve as a platform of both absorption of innovations and market support, making MSMEs better informed, more competitive, and placing Romania in-line with EU standards. The following objectives underlie the design of the Portal:

- Better access to information about market opportunities, new product designs and technologies, TA and advisory services (both, commercially offered and in the public domain);
- Increased transparency regarding prices, supply and demand for particular products produced or procured by Romanian MSMEs;
- More efficient price discovery mechanisms through the increase of the liquidity of the markets by their spatial and temporal consolidation;
- Broader outreach to global markets and elimination of some intermediation costs;
- Better integration of supply chains with participation of Romanian MSMEs;
- Easier and faster communication between members of market support organizations (chambers of commerce, professional associations, etc.) for provision of training, information about products and market opportunities;
- Easier and faster access to governmental regulations; and
- Better access to public procurement in connection with strengthening innovative MSMEs.

The component will, in particular, assist in the development of business opportunities in knowledge disadvantaged areas; it will provide these regions with better access to information, integrate relatively isolated communities, and foster socio-economic development and give local producers access to market information.

A specialized system, called an "e-Store", will be created to run the platform. The networks and services run by the e-Store would be developed by its owner as demand emerges, but would involve commercial Romanian and foreign firms specialized in networking services provided to MSMEs. These initiatives could be supported by grants, as described below. The e-Store would capitalize on existing "brick-and-mortar" networks of sector oriented associations of producers and service providers. Although the e-Store is to be established and initially run using proceeds of the WB loan, it is expected to become financially sustainable.

Primarily, in the first stage of the project, the e-Store will be managed by specialists hired under the KE Project, to set up the initial structure, staffing and the work program, and run effectively the basic activities.

The e-Store will operate as a non-proprietary, open, web-based application. Access will be available to any preauthorized user with Internet access and from any location (including LCeNs). In the longer term, the operation of the e-Store could be outsourced to a specialized commercially operated firm providing technology, content and data services and consulting to users. This would allow e-Store management to focus on its core competency– specific industry expertise and establishing and maintaining a critical mass of users.

Subcomponent 3. B. Grant Facility

The main goal of establishing the grant facility (MGF) is to encourage collaborative industry-based projects which aim to accelerate the adoption of innovative business solutions, including ICT-based services, across a wide range of industry sectors, with a particular focus on MSME clusters. The Facility would offer support to individual enterprises, enterprise associations and clusters to co-finance through grants funded from the proposed Loan projects that would facilitate e-business adoption and improve the competitiveness of Romanian firms in domestic and foreign markets. Priority would be given to projects implementing e-business solutions aimed at developing MSMEs support infrastructure by offering Internet based services to sector associations, industrial clusters, and commercial service providers oriented on groups of firms. The Facility could also finance the preparation of individual e-business plans, through the provision of full grant financing of technical assistance for Project preparation and co-finance some percentage of the costs of execution of these e-business projects (depending on the upfront decided classification of financed projects).

The projects for preparation and implementation of e-business plans (both for network services and individual firms) would have to be approved by the Evaluation Committee, based on the assessment of the financial viability, economic and social benefits of the plan, and eligibility of the applicant to co-finance and execute the project. All services and goods financed under the specific Project would have to be, where possible, acquired from commercial providers using open procurement through the e-Store. The Evaluation Committee will be composed of PMU members, experts from the ministries involved and NASMEC, and independent experts. The Committee would be guided by a POM.

Activities eligible for financing under this grant facility would include:

- Professional service costs necessary to assess new or existing businesses market including e-business costs and benefits, and prepare and implement business plans to re-engineer business processes, products, and ICT systems which enable e-business operation;
- Initial software and networking costs; website development, hosting and security certification;
- Acquiring equipment and devices embedding innovative elements and modern technologies such as: production machinery, tools, office equipment, transport facilities;
- e-Business information services; and
- Expenditures incurred in relation to activities aiming at export-oriented activities, such as local and international trade-fairs or exhibitions.

Based on the private sector analysis regarding the design, functions, eligibility criteria and MGF fund apportioning in different distribution ratios, along with the business specialists within the PMU, the Grant Scheme was developed and approved by the Competition Council according to Romanian legislation.

To increase program transparency, all grant approvals and rejections would be posted at the end of each evaluation time period, on the e-Store web page.

Component 4. Project Management

The Project will be managed by the MCIT through a Project Management Unit (PMU), where the Project Manager, fiduciary and support staff, plus technical staff dealing with communications and IT issues would be housed. In addition, a small number of technical staff of the PMU would be located as necessary in each of the following: the Ministry of Education and Research, Ministry of Administration and Internal Affairs, and the Agency for Small and Medium Enterprises, but fully integrated into the PMU work plan. The loan would finance minor renovations, operating costs of the PMU including purchase and operational costs of vehicles, PMU salaries, and consultants for the monitoring and evaluation of Project activities and audit. .

Monitoring and evaluation will use an Internet-based system as the best addressing the broad reach and diversity of the project (200 locations, 4 nods each). Such e-M&E system will ensure an effective instrument enabling collection, storage, processing and presentation of the necessary data in order to monitor and evaluate, periodically, based on specific formulas, evolution and progress of project implementation.

The whole system will be web based. Reporting of data will be done periodically in the specified timeframe by the beneficiaries.

All detailed technical aspects and requirements will be developed with a specialized firm, along with all stakeholders involved in the Project.

Annex 5. Project costs

Project Cost by Component/Activity	Local US $million	Foreign US $million	Total US $million
Component 1. Access to ICT in disadvantages communities and improved digital literacy	7.3	35.7	43.0
Component 2 – Development and promotion of government e-services	0.5	8.4	8.9
Component 3 Promotion of e-commerce and innovation support for MSMEs	1.3	10.6	11.9
Component 4 – Project Evaluation and Implementation	4.5	1.5	6.0
Total Baseline Cost	*13.6*	*56.2*	*69.8*
Physical Contingencies	0.0	0.0	0.0
Price Contingencies	0.0	0.2	0.2
Total Project Costs	**13.6**	**56.4**	**70.0**
Front-end Fee			
Total Financing Required	**13.6**	**56.4**	**70.0**

Annex 6. Implementation arrangements

PMU is organized as a body without legal personality within MCIT in order to ensure the adequate preparation and implementation of the Project. The selection of PMU personnel is done through a competitive process. Technical specialists (for example, the e-government specialist, the education and qualification specialist, the public administration specialist, the business administration specialist) will be selected in consultation with the respective ministries and agencies.

PMU staffing and structure
The core staffing of the PMU will include:
- A project manager;
- A financial specialist;
- An accounting specialist;
- A procurement specialist;
- A logistics specialist;
- An ICT/e-development specialist (sector specialist);
- An education specialist (sector specialist);
- A public administration specialist (sector specialist);
- A business administration specialist (sector specialist);
- An assistant; and
- A financial controller.

Additional staff will be recruited as necessary with the prior consent of the Bank. Detailed tasks of PMU the core staff will be described in respective TORs.

Due to the cross-sectoral nature of the Project, the PMU will hire sector specialists who will be liaisons with the respective agencies participating in the Project. These specialists will have the following functions in their respective areas of expertise:
- Prepare/review technical specifications for the TORs and procurement packages related to the respective subcomponents;
- Ensure consistency between the activities and policies of the Project and those of the respective sectors;
- Participate in contracts evaluation and negotiation commissions;
- Contribute to the accomplishment of the implementation politics and procedures of the respective sub-projects developed within the project;
- Follow the progress accomplished during the implementation of the respective subcomponents;
- Supervise and monitor the ongoing contracts, including the participation in the periodical on-site verifications;
- Cooperate with procurement and financial specialists;
- Participate in the drafting of the reports regarding the implementation of the respective subcomponents as requested by IBRD, the Ministry of Public Finances etc.; and
- Monitor, evaluate and submit for approval the modifications in the execution of the contracts.

PMU will be supervised by the Steering Committee, which is headed *ex officio* by the Minister of MCIT, and includes high level representatives from participating ministries and agencies.

Annex 7 Financial Management and Disbursement Arrangements

Financial Management

1. Summary

Country Issues

The first Country Financial Accountability Assessment (CFAA) for Romania was finalized in December 2003 and concluded that the overall fiduciary risk associated with the public financial management and financial accountability arrangements of the Romanian Government administration is considered to be moderate, with the systems for accounting, financial reporting and internal control representing the areas with the higher risks and budgeting, cash management and external audit and Parliamentary oversight representing the lower risks.

The implications of the CFAA for the project are addressed by the following actions:

- A detailed review of the systems was performed for the implementing entity;
- The implementing entity has set up a distinct project-specific accounting ledger;
- Project accounting staff appointed for the implementing entity;
- The format of the FMRs and financial reports agreed with the implementing entity;
- Project financial statements audited by an independent auditor annually.

Strengths and Weaknesses

The significant strengths that provide a basis of reliance on the project financial management system include: (i) the simple funds' flow and centralized financial management arrangements; and (ii) the experience of the project's financial manager in implementing Bank-financed projects and satisfying Bank financial management requirements.

There are no significant weaknesses of the project financial management system.

Implementing Arrangements

The Project Management Unit within MCIT would be responsible for the financial management aspects of the Project.

The Loan Agreement will be signed between the World Bank (IBRD) and Romania, represented by the MoPF.

Funds Flow

Project funds will flow in respect of each of the sources of project financing as follows:

(i) The Bank loan, by direct payments or via the Special Account, which will be replenished on transactional methods using Statements of Expenditure; and

(ii) Government counterpart contribution, via dedicated Treasury project accounts.

A Special Account will be opened at a commercial bank and on terms and conditions acceptable to the WB. Foreign currency amounts will be exchanged as needed in local currency (ROL), to cover eligible expenditures payments in local currency to suppliers, from the Special Account into a local currency transfer account that will be opened at a commercial bank and on terms and conditions acceptable to the WB. This arrangement is already in place for the Project Preparation Facility (PPF), on which disbursements started in February 2005 and for which the SA is opened at a commercial bank acceptable to the WB. Subject to satisfactory performance, the PMU intends to use the same commercial bank for keeping the SA for the main project.

Government counterpart contribution payments will be made from a separate Treasury project accounts, being sub-accounts of MCIT's main budgetary account, and which will be used specifically for the counterpart contributions to the project. These contributions will be received monthly in accordance with normal budget procedures, as it is already the case for the PPF.

Staffing

The project management unit includes a finance team comprising the project financial manager and the accountant. The project financial manager has good experience of implementing Bank-financed projects and has demonstrated that it is fully capable of fulfilling the financial management needs of the project, as shown during the previous years worked on other two WB-financed Projects.

Accounting Policies and Procedures

The project's accounting books and records will be maintained on an accrual basis and denominated in Romanian Lei (ROL) with the exception of the books and records in respect of the Special Account which will be maintained in the currency of the IBRD Loan.

The PMU has built upon the existing MCIT accounting procedures and internal controls to ensure that all project procedures and controls are adequately documented, contract monitoring and invoice payment procedures are put in place. Accordingly, a project accounting procedures manual has been developed.

2. Audit Arrangements

Internal Audit

MCIT has recently established its internal audit department. It is anticipated that the internal audit department will review the project's financial management arrangements. The internal audit department will include in the annual work program the Project, as part of MCIT's overall activities. However, the internal audit department has, thus far, relatively limited experience, having been recently established.

External Audit

As of the date of this report, the Borrower is in compliance with its audit covenants of the Bank-financed projects.

The Project will be audited annually both by an audit firm and on terms of reference acceptable to the Bank. The terms of reference for the audit have been agreed and will be attached to the minutes of negotiations. The audit scope will include the project's books and records as maintained by the implementing entity, all withdrawal applications, and the Special Account. The audited project financial statements together with the auditor's opinion thereon will be provided to the Bank within six months of the end of the reporting period, being the fiscal year.

In addition, the Romanian Court of Accounts (CoA), the country's supreme audit institution, will continue to perform ad hoc external audits of the implementing entity, including of this project.

The most recent audit report prepared by the CoA, dated July 2004, covering FY 2003 for MCIT has been reviewed. Most of the points raised by the CoA have been satisfactorily addressed by MCIT and there are some remaining points in course of being addressed by some of the MCIT's subordinated entities, before the CoA will confirm that MCIT discharged its obligations in respect of the execution and reporting of the budget.

3. Disbursement Arrangements

Bank funds will be disbursed either as direct payments, or to the Special Account which will be replenished under the transactional disbursement procedures. Withdrawal applications for the replenishments of the SA will be sent to the Bank monthly, or when about a third of the initial deposit in the SA has been utilized, whichever comes first. All replenishments for transactions above the prior-review threshold will be fully documented. Supporting documentation for all transactions, including completion reports, goods received noted and acceptance certificates, will be retained by the implementing entity and made available to the Bank during project supervision. There is no plan to move to forecast-based periodic disbursements.

4. Reporting and Monitoring

Project management-oriented Financial Monitoring Reports (FMRs) will be used for project monitoring and supervision. The project management team will produce the project's FMRs every calendar quarter and the reports will be submitted to the Bank within 45 days after the calendar quarter-end. The formats of the FMRs and financial reports have been agreed and will be attached to the minutes of negotiations.

5. Information Systems

The PMU has contracted an accounting software firm that has implemented a customized project accounting system. Project-specific accounting ledgers have been created to allow the PMU to

record distinctly the project operations, using the existing chart of accounts. The PMU currently keeps the PPF accounting records within the accounting software.

6. Action Plan (Agreed with Borrower)

None

7. Supervision Plan

During project implementation, the Bank will supervise the project's financial management arrangements in two main ways: (i) review the project's quarterly financial monitoring reports (FMRs) as well as the project's annual audited financial statements and auditor's management letter; and (ii) during the Bank's supervision missions, review the project's financial management and disbursement arrangements (including a review of a sample of withdrawal applications and movements on the Special Account) to ensure compliance with the Bank's financial management requirements.

Annex 8. Procurement Arrangements

A. General

Procurement for the proposed Project would be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004 (Procurement Guidelines); and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004 (Consultant Guidelines), and the provisions stipulated in the Legal Agreement. The various items under different expenditure categories are described in general below. For each contract to be financed by the Loan, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual Project implementation needs and improvements in institutional capacity.

Procurement of Goods: Goods procured under this Project would include: equipment and connectivity infrastructure for LCeNs, equipment and software for portals. The procurement will be done using the Bank's SBD for all ICB and National SBD agreed with or satisfactory to the Bank, including SBD for Supply and Installation of Information Systems (single and two stage).

Selection of Consultants: Consultants for educational policy changes, network design, support to communities in the preparation of applications, and for outreach/promotion activities, development of educational software, development of teaching-learning e-materials, evaluation of the pilot, training of teachers, administrative staff, students, and civil servants. Training on digital literacy and development of portals contents. Short lists of consultants for services estimated to cost less than $200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Operating Costs: Project Management Unit (PMU) operating costs such as (i) incremental operating costs incurred on account of the project implementation by the PMU with technical staff in other ministries and agencies, including for communication costs, transportation costs, fuel, vehicle maintenance, office equipment, and supplies, equipment maintenance and audit costs; (ii) travel costs and per diem allowances of staff of the ministries and agencies assigned to field and office work requiring travel for the project. Broadband connectivity costs for the first three years of existence of a particular LCeN on a declining basis. This is to be disbursed at 80% until end of the second year and 60% thereafter until the end of the loan.

Others: In Subcomponent 3.B the Grant Facility will be used and under supervision of the PMU the National SMEs Agency will be disbursing grants to the beneficiaries from their imprest account. The eligibility and operating sequence is described in Annex 4, subcomponent 3.B of the PAD.

The procurement procedures and SBDs to be used for each procurement method, as well as model contracts for works and goods procured, will be presented in the Project Operational Manual.

B. Assessment of the agency's capacity to implement procurement

Procurement activities will be carried out by the Project Management Unit (PMU) established in the Ministry of Communications and Information Technology (MCIT). The PMU will be staffed by a Project Manager, two Procurement Specialist, a Financial Manager, an Accountant, other support staff, and technical staff including staff located in the Ministry of Education and Research (MER), the Ministry of Administration and Internal Affairs (MAIA), and the National SMEs Agency (NASMEC), and the procurement function will be staffed by a Procurement Specialist which is experienced in World Bank procurement procedures.

An assessment of the capacity of the Implementing Agency to implement procurement actions for the Project was carried out by the World Bank on October 14, 2004. The assessment reviewed the organizational structure for implementing the Project and the interaction between the project's staff responsible for procurement officer and the Ministry's relevant central unit for administration and finance.

The key issues and risks concerning procurement for implementation of the Project have been identified and include lack of experience in World Bank procurement procedures, understaffing, and inadequate level of coordination with MER, MAIA, and NASMEC. The corrective measures which have been agreed are:

(i) The PMU will employ at least one procurement specialists or more if needed, with necessary educational background and experience in procurement and familiar with World Bank procurement guidelines and procedures, one of them having experience in Bank procurement, before loan signing;

(ii) The PMU would prepare the project launch workshop (with the Bank) for all government officials involved in project implementation. During such workshop adequate time should be spent on procurement training, the procurement procedures should be discussed and explained, and a half-day session should be held for those responsible for procurement decision making.

(iii) Putting into operation a computer information system for monitoring the project activities.

(iv) The PMU will prepare their Project Operational Manual (POM) defining all internal procedures including procurement procedures by the loan effectiveness. The POM will include the procedures for cooperation with other ministries and agency, as well as detailed procedure for MCIT internal processing starting from preparation of bidding documents and till contract signing and contract management.

The overall Project risk for procurement is HIGH.

C. Procurement Plan

The Borrower, at appraisal, developed a procurement plan for project implementation which provides the basis for the procurement methods. This plan has been agreed between the Borrower and the Project Team and is available in the MCIT. It will also be available in the project's database and in the Bank's external website. The Procurement Plan will be updated in

agreement with the Project Team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

D. Frequency of Procurement Supervision

In addition to the prior review supervision to be carried out from Bank offices, first supervision mission will take place after 6 months, and then every 12 months, to carry out post review of procurement actions.

E. Details of the Procurement Arrangements Involving International Competition

1. Goods, Works, and Non Consulting Services

(a) List of contract packages to be procured following ICB and direct contracting:

Ref. No	Contract Description	Procurement/ Selection Method	Prequalification (yes/no)	Domestic Preference (yes/no)	Review by the Bank (Prior/Post)	Expected Bid-Opening Date/Expected Proposals Submission Date	Comments
1.A.2	LCeN Infrastructure – Equipment, Connectivity and Communication	ICB	No	No	Prior	2006	1 package/20 lots/10 communities per lot
1.A.4	Up-grade/Renewal of LCeN equipment	ICB	No	No	Prior	2009	1 package/20 lots/10 communities per lot
1.A.5	NSP-Set-up (Equipments for Technical and Professional Support)	ICB	No	No	Prior	2007	1 package
1.C.4	Digital Content (Education Software)	ICB	No	No	Prior	2006	1 package/20 lots
2.A.1	Portal Application Development /IT&C Equipment/Training	ICB	No	No	Prior	2006	1 package
2.B.2	Development of Central Integrated Application/IT&C Equipment/Training	ICB	No	No	Prior	2007	SIIS 2 stages will be used, for national security reasons
3.A.1	Hardware and Communications Infrastructure	ICB	No	No	Prior	2006	1 package
4.A.5	Vehicles for PMU	ICB	No	No	Prior	2006	1 package/2 lots

(b) ICB contracts for Goods estimated to cost above $100,000 per contract, ICB contracts for Works estimated to cost above $3,000,000, and all direct contracting will be subject to prior review by the Bank.

2. Consulting Services

(a) List of consulting assignments with short-list of international firms.

Ref. No	Contract Description	Procurement/ Selection Method	Prequalification (yes/no)	Domestic Preference (yes/no)	Review by the Bank (Prior/Post)	Expected Bid-Opening Date/Expected Proposals Submission Date	Comments
1.A.1	LCeN Infrastructure – Design and Supervision of Installation	QCBS	No	No	Prior	2006/ 2009	2 packages
1.A.7	National and Local Dissemination for improving access by LCeN	QCBS	No	No	Prior	2006	1 package
1.A.8	Monitoring and Evaluation for improving access by LCeN	QCBS/IC	No	No	Prior	2006	1 package/4 packages
1.B.1	Training of Staff for LCeNs	QCBS	No	No	Prior	2007	2 packages
1.B.2	ICT basic literacy training and materials development for communities	QCBS	No	No	Prior	2007	3 packages
1.B.4	National and Local Dissemination for Human Resources Development	QCBS	No	No	Prior	2007	1 package
1.B.5	Monitoring and Evaluation for Human Resources Development	QCBS	No	No	Prior	2007	1 package
1.C.1	Teacher Training	QCBS	No	No	Prior	2007	1 package
1.C.5	Monitoring and Evaluation for ICT implementation in schools	QCBS	No	No	Prior	2007	1 package
2.B.1	System Analysis for Central Integrated Application	QCBS	No	No	Prior	2006	1 package
3.A.3	Business Development	QCBS	No	No	Prior	2008	1 package

(b) Consultancy services estimated to cost above $100,000 per contract and all single source selection of consultants (firms) will be subject to prior review by the Bank.

(c) Short lists composed entirely of national consultants: Short lists of consultants for services estimated to cost less than $200,000 equivalent per contract, may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Annex 9. Economic and financial analysis

The proposed project, by its design, is expected to produce a variety of benefits with diverse economic and social impact, time of realization, and measurability:

- Educational benefits for students, teachers, and population at large are expected to prepare people to participate in the information society. These results can be observed only in a longer perspective and are difficult to measure in direct monetary terms, although there is a broad agreement that economic gains to the society and economy are significant.

- Financial and fiscal benefits of the government e-services are confirmed by international experience, and there is no reason to assume that the returns in Romania would be below international benchmarks[8]. Additional benefit of increased transparency – although difficult to measure - will likely strengthen Romania's EU bid.

- There is also convincing international experience regarding direct and indirect economic benefits of improved networking and access to information by SMEs.

All these benefits hinge on financial and economic sustainability of the LCeNs. Therefore, below we discuss financial sustainability of the LCeNs at the level of the break-even, i.e. ability of the LCeNs to reduce over time the public financing to zero. In other words, we are asking about the level of revenues and expenditures which would: on the one hand, eliminate the need for public support, and - on the other hand - not yet generate a net income for the business owners. It is an equilibrium of the minimum state when the social and economic benefits to the society (mentioned above) will be able to materialize in financially sustainable LCeNs. It does not preclude generation of the net income to the operators "on the top" of the break-even point.

In the telecenter model selected for this Project - local networks with integrated delivery of variety of functionalities - it is useful to think about LCENs sustainability as an adoption process. Under the "adoption model," the LCENs will be initially supported by the KE SIL Project and other direct public financing (at the declining scale) and - over time – the budgets of LCeNs nodes will become integrated within the budgets of their hosting institutions (such as: schools, local governments, chambers of commerce, local artisan centers, trade cooperatives, etc.).

LCeN business (cost/revenue) model

From the operational, business perspective, a single LCeN can be perceived as a local network of basic community telecenters (BCT) and multi-purpose community telecenters (MCT). Basic telecenters typically offer a mix of elementary ICT services including telephony, fax, Internet access, computer, photocopying and related technologies. Multi-purpose community telecenters usually have more of high-end technologies, employ full-time staff, provide training and more

[8] For example see the results for Latin America presented during the WB Dialogue on Government-2-Business Services
http://lnweb18.worldbank.org/LAC/LAC.nsf/ECADocByLink/C99CA52AA3D11E3685256E1C0075EC6C?OpenDocument

sophisticated services for a broad array of users in business, education, e-government. Typically, BCTs are owned by individual entrepreneurs and/or franchised, and are oriented on commercial services, such as calling, web surfing and computing. LCeNs needs usually will require multi-purpose solutions, single BCTs may be an initial solution adopted for the LCENs located in the disadvantaged communities with low population density and little business activities.

In addition to nodes identified under the project, LCENs may include additional private initiative BCTs (for example, an internet café). The KE Project would support a privately-owned BCTs to the extend they deliver public goods by, for example, allowing free of charge use of the broadband.

A prevailing model would be a network of multi-purpose nodes (MCT) at schools, local administration offices and business community centers. These nodes would share - in addition to common broadband connectivity - management, some staff and technologies. At the inception, LCENs would be publicly owned but with a strategic objective of transferring them into private hands. This strategy could look as follows: 1/managemend contracts with private parties for managing parts (nods) or the whole LCENs; 2/ franchising LCENs (or nods) to private operators; 3/bringing private parties (investors) 4/ full privatization. At all stages of commercialization the public financing would be available as grants (at declining schedule) and fees for contracted services. The timetable of this process may differ from community to community but enough time has to be envisaged to make the LCENs realistically sustainable as commercial ventures. International experience shows that for a MCT, up to 3 years is the average time for the successful transition. Taking into account that LCENs will offer more diversified and – at the same time – more integrated solutions, and that they will be located in disadvantaged communities, up to 5 years should be realistically expected for their commercial sustainability (break-even).

Funding and Cost Recovery Strategy

LCENs financing strategies have to address the need to generate adequate start-up funding and to operate in a financially sustainable manner. Factors such as cost recovery and funding strategies, including commercial and donor based funding sources, are critical to design and operational considerations. A LCENs funding and cost recovery strategies depend on: 1) start-up costs; 2) operating costs; and 3) start-up and operating revenues.

Start-up costs include the following:

- Facilities and equipment (e.g. telephones, computers, building and furniture, software);
- Office equipment and training materials;
- Licenses;
- Telephone system installation and Internet connectivity;
- Back-up systems (e.g. generators);
- Labor costs, including legal and administrative fees; and
- Training

The start-up costs of an LCeN can range between $50,000 and $100,000, depending on equipment, types of services to be offered, number of staff, whether the premises will be rented or in kind contribution, and so on. The start-up costs would be accommodated during the first two years of establishment of an LCeN.

Operating costs include the following:

- Staffing;
- Office rentals;
- Insurance and security;
- Access fees to national telecom provider and ISP;
- Depreciation, upgrades and maintenance;
- Office supplies;
- Outreach and promotion; and
- Utilities

Operating costs for an LCeN can reach annually $15,000. It is assumed that communities will cover some of these costs (mostly in kind), such as office space, security, utilities.

Start-up and operating revenues may include the following:

- Government grants and contracts for services
- Private donors grants;
- Training courses fees;
- Business support services; e.g. photocopying and fax services
- Telephone and Internet access fees for users
- Community contribution

As international experience shows, revenues of particular LCENs depend on many factors, including the education and income level of the community served, number of MSMEs in the area, prior exposure to ICT, need to contact outside the community (e.g. people working abroad). LCENs need to be demand-driven, and demand should be reflected in the community's willingness to pay increasing share of the costs for services. Acknowledging this need, and designing LCENs operations accordingly, will help them to succeed in the long term.

Operating revenues will also depend on the stage in the LCENs life cycle. Naturally, resource demand is particularly high in the start-up phase. As services expand over time, especially in terms of providing business support, public grant funding will decline and be replaced by revenues from fees.

Decline over time and elimination of the public funding specifically targeted at LCeNs at the end of the transition period should not be confused with availability of the financing received for providing publicly financed services. For example, ICT education for pupils or retraining for unemployed should be an important service provided by LCENs paid from the central or local budgets.

In the adopted sustainability model, we assume that public funding will be available for the first replacement of equipment after 3 years of activity of a LCeN (in a year 4). Experience shows that it is not realistic to expect that during the first few years LCeNs could accumulate enough free cash-flow to replace the equipment. A financial schedule steep enough to accumulate resources for the replacement of the equipment would divert attention of LCeN managers from broader social functionalities of LCENs and would excessively focus business model on fee-generating commercial services (e-mailing, web-surfing, etc).

Based on the international experience[9] and estimations prepared by MCIT and consultants[10], the *pro forma* revenue/expenditure chart necessary to reduce public grants to zero (break-even point) would look as follows.

Table. A *pro forma* sustainability chart for a single LCeN, for the break-even in 5 years period

($000)	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues					
Public Grants	86	12	8	36[11]	**0**
Fees			4	6	12
Community contribution	3	3	3	3	3
Total revenues	89	15	15	45	15
Expenditures					
Equipment	75	0	0	30	0
Staff	4	5	5	5	5
Maintenance	4	4	4	4	4
Internet fee	6	6	6	6	6
Total Expenditures	89	15	15	45	15

The funding of a single standard LCeN, necessary to reach sustainability over 5 years would therefore look as follows:

- Public (government) from the Project proceeds and the government contribution– $142.0
- Community contribution (in kind and cash) – 15.0
- Fees for services – 22.0

[9] Connected for Development, UN, 2002
[10] Feasibility study on possible broadband solutions for Romania, MCIT, Bucharest 2004
[11] Upgrade and renewal of LCeN equipment

Annex 10. Safeguard policy issues

Not Applicable

Annex 11. Project processing

	Planned	Actual
PCN review	02/10/2004	03/09/2004
Initial PID to PIC		04/07/2004
Initial ISDS to PIC		04/07/2004
Appraisal	10/22/2004	03/01/2005
Negotiations	02/01/2005	09/26/2005
Board/RVP approval	03/28/2005	
Planned date of effectiveness	06/01/2005	
Planned date of mid-term review	06/01/2007	
Planned closing date	06/01/2009	

Key institutions responsible for preparation of the project:

The World Bank, the Ministry of Communications and Information Technology, the Ministry of Education and Research, the Ministry of Public Administration and Internal Affairs, and the Agency for Small and Medium Enterprises and Cooperatives, the Ministry of Finance. Project preparation on the Government side was partially financed through the Romania Private and Public Sector Institution Building Loan (Ln. 46760-RO).

Bank staff and consultants who worked on the Project included:

Name	Title	Unit
Gregory T. Jedrzejczak	Lead Specialist	ECSPF
Toby Linden	Senior Education Specialist	ECSHD
Arabela Sena Aprahamian	Senior Operations Officer	ECSPF
Ana Maria Sandi	Lead Operations Officer	ECSHD
Gizem Eren-Baig	Resource Management Officer	ECSPF
Mariana Doina Moarcas	Operations Oficer	ECSHD
Ionel Lumezianu	Information Analyst	ECCRO
Ireneusz M. Smolewski	Senior Procurement Specialist	ECSPS
Bogdan Constantinescu	Senior Financial Management Specialist	ECSPS
Mohamed Ramzi Roshdi Ismail	Consultant	ECSPF
Jean-Charles de Daruvar	Senior Counsel	LEGEC
Edward Daoud	Senior Finance Officer	LOAG1
Gareth Locksley	Senior Telecom Specialist	CITPO
Jean-Eric Aubert	QER Chair	WBI
Gwang-Jo Kim	QER Panelist	HDNED
Severin Kodderitzsch	QER Panelist	ARD

Bank funds expended to date on Project preparation:

1. Bank resources: US$320,000
2. Trust funds: US$0
3. Total: US$320,000

Estimated Approval and Supervision costs:

1. Remaining costs to approval: 10,000
2. Estimated annual supervision cost: 100,000

Annex 12. Documents in the Project file

A. Bank Staff Assessments

1. Quality Enhancement Review, April 2004
2. Aide Memoire, Pre-Appraisal Mission, April 2004
3. Aide Memoire, Pre-Appraisal Mission, June 2004
4. Aide Memoire Appraisal Mission, November 2004
5. Project Appraisal Document, March 2005

B. Other

1. Romania: Information Society Action Plan. Ministry of Communications and Information Technology, Romania. Bucharest: December, 2002.
2. Romania e-Readiness Assessment. Ministry of Communications and Information Technology, Romania. Bucharest: 2003.
3. Feasibility Study on Possible Broadband Solutions for Romania, Romania: Bucharest 2004
4. Social Assessment Identifying Knowledge Disadvantaged communities: Bucharest 2004

Annex 13. Statement of loans and credits

			Original Amount in US$ Millions						Difference between expected and actual disbursements	
Project ID	FY	Purpose	IBRD	IDA	SF	GEF	Cancel.	Undisb.	Orig.	Frm. Rev'd
P043881	2004	IRRIG REHAB	80.00	0.00	0.00	0.00	0.00	80.00	0.20	0.00
P068062	2003	ENERGY EFF (GEF)	0.00	0.00	0.00	10.00	0.00	8.65	5.50	0.00
P069679	2003	PPIBL	18.60	0.00	0.00	0.00	0.00	17.82	-0.78	0.00
P067575	2003	PSAL 2	300.00	0.00	0.00	0.00	0.00	194.02	0.00	0.00
P081406	2003	ELEC MARKET	82.00	0.00	0.00	0.00	0.00	94.68	0.00	0.00
P073967	2003	RURAL EDUC	60.00	0.00	0.00	0.00	0.00	59.10	2.10	0.00
P067367	2003	FOREST DEVT	25.00	0.00	0.00	0.00	0.00	25.00	1.40	0.00
P068808	2002	SDF 2 (APL #2)	20.00	0.00	0.00	0.00	0.00	14.61	-5.39	0.86
P057960	2002	RURAL DEV (APL #1)	40.00	0.00	0.00	0.00	0.00	37.55	5.05	0.00
P066065	2002	AG POLLUTION CONTROL (GEF)	0.00	0.00	0.00	5.15	0.00	3.39	0.86	0.00
P056891	2001	RURAL FIN (APL #1)	80.00	0.00	0.00	0.00	0.00	76.08	27.68	0.00
P008783	2001	SOC SECT DEV (SSD)	50.00	0.00	0.00	0.00	0.00	48.94	33.09	0.00
P008797	2000	HEALTH SECTOR REFORM	40.00	0.00	0.00	0.00	0.00	6.98	6.98	0.00
P043882	2000	AGR SUPPORT SERVS	11.00	0.00	0.00	0.00	0.00	5.94	5.94	0.00
P065041	2000	TRADE & TRANS FACIL IN SE EUR	17.10	0.00	0.00	0.00	4.47	2.12	-10.52	0.00
P056337	2000	MINE CLOSURE	44.50	0.00	0.00	0.00	0.00	27.13	26.93	2.63
P039251	1999	PIBL	25.00	0.00	0.00	0.00	1.10	6.13	7.23	0.00
P058284	1999	CULTURAL HERITAGE	5.00	0.00	0.00	0.00	0.00	2.55	2.55	0.88
P044176	1999	BIODIV CONSV MGMT (GEF)	0.00	0.00	0.00	5.50	0.00	2.24	2.19	0.32
P034213	1998	GEN'L CADASTRE	25.50	0.00	0.00	0.00	0.00	15.51	15.51	0.24
P039250	1997	SECOND ROADS	150.00	0.00	0.00	0.00	0.00	14.99	14.99	0.00
P008794	1996	POWER SECTOR REHAB	110.00	0.00	0.00	0.00	33.50	7.72	41.22	-0.71
		Total:	1,183.70	0.00	0.00	20.65	39.07	751.15	182.73	4.22

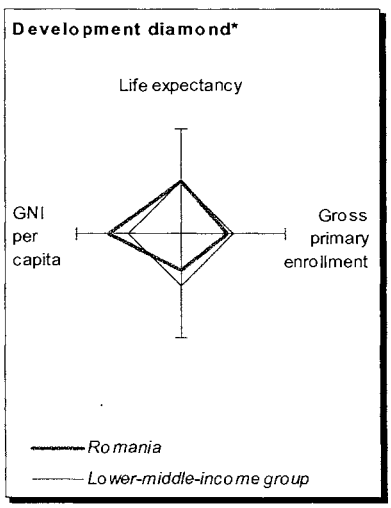
ROMANIA
STATEMENT OF IFC's
Held and Disbursed Portfolio
In Millions of US Dollars

		Committed				Disbursed			
		IFC				IFC			
FY Approval	Company	Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
1999	Ambro	3.64	0.00	0.00	0.00	3.64	0.00	0.00	0.00
2003	Arctic	12.13	0.00	0.00	0.00	12.13	0.00	0.00	0.00
2002	Banc Post	0.00	0.00	10.00	0.00	0.00	0.00	10.00	0.00
2003/04	Banca Comerciala	0.00	111.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	Banca Romaneasca	4.61	0.00	0.00	0.00	4.61	0.00	0.00	0.00
1998	Bilstein Compa	0.31	0.00	0.00	0.31	0.31	0.00	0.00	0.31
1996	Danube Fund	0.00	1.20	0.00	0.00	0.00	1.20	0.00	0.00
2001	ICME	12.23	0.00	0.00	0.00	12.23	0.00	0.00	0.00
1998	Krupp Compa	2.15	0.00	0.00	0.92	2.15	0.00	0.00	0.92
2002/03	MFI MFB Romania	0.00	0.53	0.00	0.00	0.00	0.53	0.00	0.00
1997	Rambox	0.64	0.00	2.00	0.00	0.64	0.00	2.00	0.00
2003	Ro-Fin	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1994/01	Romlease	2.67	0.00	0.00	0.00	2.67	0.00	0.00	0.00
	Total portfilio:	43.38	112.73	12.00	1.23	38.38	1.73	12.00	1.23

		Approvals Pending Commitment			
FY Approval	Company	Loan	Equity	Quasi	Partic.
2003	Ro-Fin Mortgage	0.00	0.00	0.00	0.00
	Total pending commitment:	0.00	0.00	0.00	0.00

Annex 14. Country at a glance

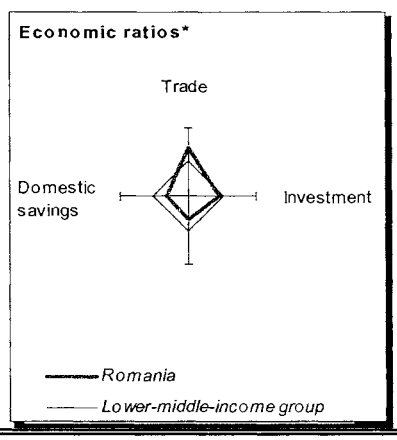
POVERTY and SOCIAL	Romania	Europe & Central Asia	Lower-middle-income
2002			
Population, mid-year *(millions)*	218	476	2,411
GNI per capita *(Atlas method, US$)*	1,920	2,160	1,390
GNI *(Atlas method, US$ billions)*	419	1,030	3,352
Average annual growth, 1996-02			
Population *(%)*	-0.6	0.1	1.0
Labor force *(%)*	0.2	0.4	1.2
Most recent estimate (latest year available, 1996-02)			
Poverty *(% of population below national poverty line)*	30	..	..
Urban population *(% of total population)*	55	63	49
Life expectancy at birth *(years)*	70	69	69
Infant mortality *(per 1,000 live births)*	18	25	30
Child malnutrition *(% of children under 5)*	..	..	11
Access to an improved water source *(% of population)*	58	91	81
Illiteracy *(% of population age 15+)*	2	3	13
Gross primary enrollment *(% of school-age population)*	99	102	111
Male	100	103	111
Female	98	101	110



KEY ECONOMIC RATIOS and LONG-TERM TRENDS

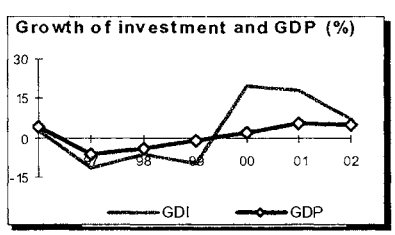
	1982	1992	2001	2002
GDP *(US$ billions)*	..	28.4	39.1	42.4
Gross domestic investment/GDP	33.7	31.4	22.6	23.1
Exports of goods and services/GDP	..	27.8	33.3	35.4
Gross domestic savings/GDP	..	23.0	14.8	17.3
Gross national savings/GDP	..	22.9	17.0	19.8
Current account balance/GDP	..	-5.3	-5.7	-3.6
Interest payments/GDP	..	0.2	1.5	1.3
Total debt/GDP	..	11.5	29.5	31.4
Total debt service/exports	23.3	9.1	18.5	17.9
Present value of debt/GDP	..	11.1	28.3	30.1
Present value of debt/exports	..	61.9	79.8	76.8

	1982-92	1992-02	2001	2002	2002-06
(average annual growth)					
GDP	-1.9	1.0	5.7	4.9	5.0
GDP per capita	-2.1	1.3	5.9	7.8	4.6

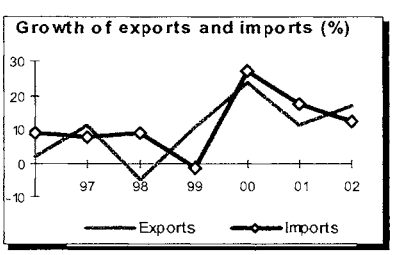


STRUCTURE of the ECONOMY

	1982	1992	2001	2002
(% of GDP)				
Agriculture	19.9	19.4	14.8	13.1
Industry	55.2	44.0	37.0	38.1
Manufacturing	..	..	..	..
Services	24.9	36.6	48.1	48.8
Private consumption	53.9	62.7	78.5	76.0
General government consumption	10.5	14.3	6.7	6.6
Imports of goods and services	..	36.2	41.1	41.2



	1982-92	1992-02	2001	2002
(average annual growth)				
Agriculture	1.4	-1.0	25.2	-3.9
Industry	-2.9	0.7	7.5	7.2
Manufacturing	..	..	..	..
Services	..	1.2	0.4	5.6
Private consumption	0.3	4.2	6.5	3.0
General government consumption	2.6	-9.3	-0.3	2.1
Gross domestic investment	..	-1.2	18.0	7.4
Imports of goods and services	..	10.0	17.2	12.1



Annex 15. Social Assessment

In support of the Project, a comprehensive social assessment has been conducted with the objective of identifying knowledge disadvantaged communities eligible for the Local Community e-Networks (LCeNs) subcomponent during implementation.

The assessment examines comprehensive datasets and indices in relation to the economic and social dimensions of Romanian localities, based on which a detailed set of typologies was developed. These *k-typologies (knowledge typologies)* were established at the level of small urban areas within Romania, as well as at the village-level (which were used as the basis for commune-level models developed under the assessment).

Villages

Rural Romania is comprised of a total of 12,713 villages, which were examined across a number of physical and demographic dimensions during the social assessment. This assessment yielded three key characteristics which were identified as the criteria for categorizing villages into k-typologies:

- *Population size:* small (1-500 inhabitants); medium (501-2,000 inhabitants) and large (2,001-30,000 inhabitants);
- *Village remoteness:* remote (less than 32km from the nearest city) and non-remote (32+ km from the nearest city; and
- *Administrative type:* central (comprising a commune's major administrative units) and peripheral (villages which are not commune administrative centers)

Based on this criteria, twelve k-typologies were established. However, following statistical analysis it was determined that, due to the high correlation of factors, only four typologies account for 92 percent of villages. This are therefore considered the major types:

(i) *Medium or large, central village, non-remote-* Comprising approximately 17% of all villages, these villages represent the highest average level of development amongst Romanian villages, boasting the highest average number of firms, the highest levels of education and ICT connectivity.

(ii) *Medium or large, peripheral village, non-remote-* these villages accounted for over one quarter of all villages and exhibited relatively high levels of development, with above average performance in education, ICT connectivity, as well as the highest levels of employment.

(iii) *Small, peripheral village, non-remote-* Comprising the largest share amongst the identified typologies (38%), these villages very modest levels of education, as well as poor connectivity and overall levels of development.

(iv) *Small, peripheral village, remote-* Representing over 10% of all villages, these villages exhibited the lowest level of overall development in spite of boasting the highest employment rate. Small, peripheral, remote villages exhibited the lowest levels of connectivity, below average educational levels, as well as the largest proportion of disadvantaged local populace relative to the group.

(v) *Minor typologies-* these typologies represent a high heterogeneous group which, on average, exhibited relatively low levels of overall development. Comprising

about 7%[12] of villages, the identified members of this group exhibited below average performance in terms of connectivity, education and overall development.

The following table provides a summary of the village K-typologies:

K-Typology	Number	Percentage of Total
Villages		
Medium or large, central village, non-remote	2,196	17.3
Medium or large, peripheral village, non-remote	3,401	26.8
Small, peripheral village, non-remote	4,788	37.7
Small, peripheral village, remote	1,303	10.2
Minor types of villages	918	7.2
Zero inhabitants or data on distance missing	107	0.8
Total	12,713	100

Communes

Based on the village k-typologies, nine models were developed as a means to categorize the communes which make up these villages. LCeN nodes generally need to be located in central villages, which are the focal point the local institutions targeted by the Project. Amongst peripheral villages, however, medium-large, peripheral, non-remote villages are also potential LCeN candidates based on their physical and demographic characteristics.

[12] Almost 1% of Romanian villages were not classified under the typologies as a result of the insufficiency of data available or a lack of inhabitancy.

The following table provides an overview of the nine models developed and their relative characteristics[13]:

Model	% of Total	Type of LCeN	Characteristics
Central village close to a city and peripheral villages with good access either to city or to the central village.	9.7	Small City[14]	These communes represent the highest level of knowledge, economic, education and overall k-development.
Central village close to a city and small peripheral villages with poor access both to city and to the central village.	5.4	Small City Spider	These villages exhibited high levels knowledge and economic development, and marginally below average levels of education development. Communes within this model are considered k-developed.
One central village located to more than 10 km from a city	6.0	Single node, Central	These communes are considered relatively well-development economically, yet exhibit the lowest levels of development in terms of education, and second lowest levels of development in terms of knowledge. Communes within this model are considered k-deprived.
Central village + 10 km from a city and peripheral villages with good access either to city or to the central village.	13.4	Single node, Central	
Central village + 10 km from a city and small peripheral villages with poor access both to city and to the central village	25.9	Single node, Central	Communes within this model exhibit overall low levels of development, including the lowest levels of knowledge development. These communes are considered k-deprived.
Central village + 10 km from a city and one large peripheral village with poor access both to city and to the central village.	19.8	Dual/Multiple node, Central	These communes exhibit relatively low levels of economic development, as well a comparative degree of knowledge deprivation and very low levels of education development. Relative to other communes, these communes represent the median group in terms of overall development.
Central village + 10 km from a city and two or more large peripheral with poor access both to city and to central village	9.4	Dual/Multiple node, Central	
Central village close to a city and one large peripheral village with poor access both to city and to the central village.	6.6	Small City Spider	These communes exhibited high levels knowledge and economic development, and marginally below average levels of education development. Communes within this model are considered k-developed.
Central village close to a city and two or more large peripheral villages with poor access both to city and to the central village	3.2	Small City Spider + Large Peripheral single node	These communes are considered well-developed across all dimensions, yet require multiple LCeNs to ensure that both the central village and any large peripheral villages are supported.

Small Urban Communities

There are a total of 194 small urban areas15 with Romania. These localities were included within the social assessment as a result of their relative lag in terms of overall development relative to other urban areas.

Although the village k-typologies could be developed because of the high correlation between factors such as location and the level of economic and knowledge development, empirical analysis and previous studies suggest that this is not an appropriate approach for the development of k-typologies for small cities. Instead, the small city k-typologies were developed based in the

[13] 20 out of the 2,700 Romanian communes (representing 0.7%) were excluded due to insufficient data

[14] Types of LCeNs are proposed based on the level of k-development. Small city LCeNs correspond to villages located within the proximity of a city; Spider LCeNs are proposed in the instances were there is a need to equipment in small peripheral villages.

[15] Small urban areas are defined based on the number of inhabitants, and comprise 1,760-30,000 inhabitants

dominant profile of the local economy of these cities. In total, five primary typologies were identified[16]:

(i) *Monoindustrial cities*[17]- monoindustrial cities represent an average level of development in terms of knowledge and education, and are marginally above Romanian poverty line. They represent approximately 21% of small urban areas.

(ii) *Monoindustrial cities in decline*- the declining nature of these economies stems from the post-1990 era SOE restructurings. These cities are in a regressing stage of development in terms of knowledge and education development, and are below the economic poverty line. They represent almost one quarter of all small cities.

(iii) *Industrial Cities (multi-industrial)*- Although these cities are only marginally above the economic poverty line, they exhibit above average levels of development in terms of knowledge and education development. They represent over 28% of small urban areas in Romania.

(iv) *Agricultural cities*- Almost 12% of small cities are characterized as agricultural cities. They represent the lowest levels of education and knowledge development amongst urban areas, and are significantly below the economic poverty line.

(v) *Tourist cities*- Although they lie marginally below the poverty line, Tourist cities are characterized by the highest level of knowledge development, and by a relatively high level of education development. They comprise over 10% of small urban areas.

Summary of k-Typologies and Models

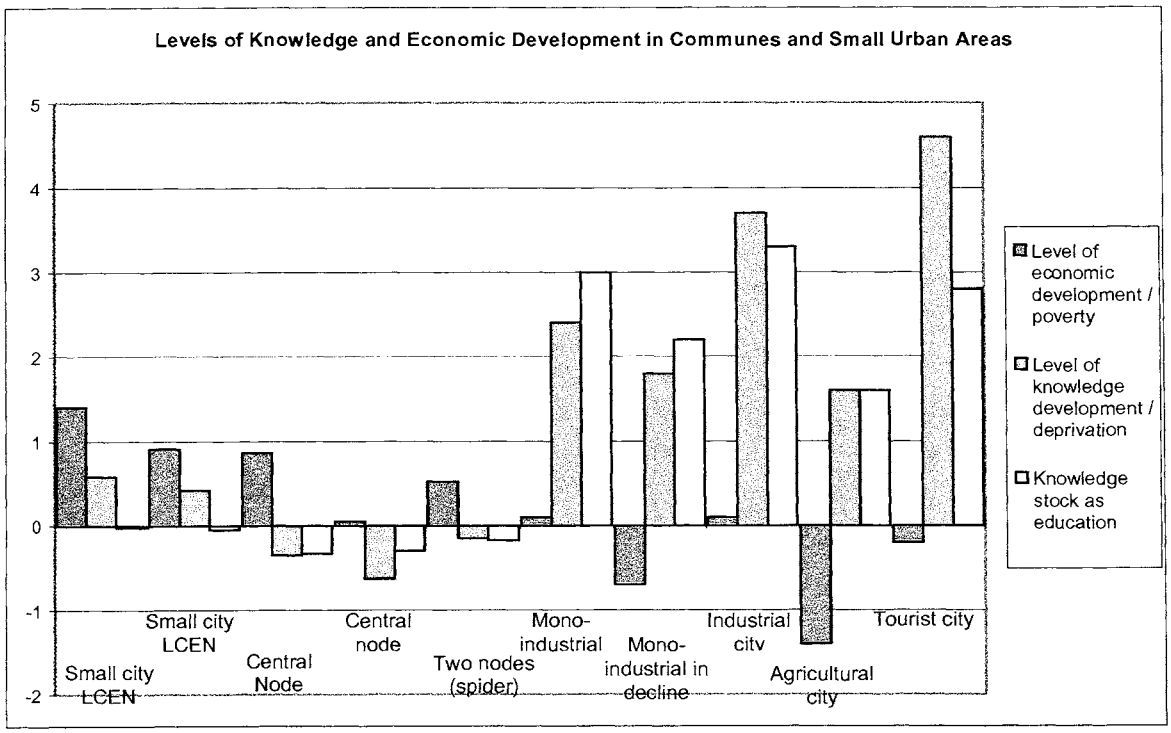
K-Typology/Model	Number	Percentage of Total
Communes		
Central village close to a city and peripheral villages with good access either to city or to the central village.	261	9.0%
Central village close to a city and small peripheral villages with poor access both to city and to the central village.	146	5.0%
One central village located to more than 10 km from a city	162	5.6%
Central village + 10 km from a city and peripheral villages with good access either to city or to the central village.	362	12.5%
Central village + 10 km from a city and small peripheral villages with poor access both to city and to the central village	698	24.1%
Central village + 10 km from a city and one large peripheral village with poor access both to city and to the central village.	534	18.5%
Central village + 10 km from a city and two or more large peripheral with poor access both to city and to central village	253	8.7%
Central village close to a city and one large peripheral village with poor access both to city and to the central village.	177	6.1%
Central village close to a city and two or more large peripheral villages with poor access both to city and to the central village	87	3.0%
Missing Data	20	0.7%
Small Urban Areas		
Mixed local economy	9	0.3%
Mono-industrial city	41	1.4%
Mono-industrial declining	47	1.6%
Industrial city	54	1.9%
Agricultural, low formal employment	23	0.8%
Tourist city	20	0.7%
Total	**2,894**	**100%**

[16] Cities which were representative of multiple categories (mixed local economies) were excluded from the analysis due to the small size of the representative sample (only nine cities)

[17] Monoindustrial cities are cities where the largest employer accounts for over 30% of all employment in the focal city

Next steps

It has been agreed that approximately 45% of communities exhibiting the greatest k-disadvantage will be eligible for inclusion in the Project (with the exclusion of those communities which would face very great technical hurdles for the successful use of a LCeN, either because of remoteness or small population). The relative levels of knowledge and economic development for communities in Romania is highlighted in the table below:



A pilot is being conducted in approximately 10 communities, based on the six typologies of communities which exhibit the greatest disadvantage. In these communities, the pilot questionnaires and application process will be used to verify the reliability of these instruments and to determine specific hurdles communities will face when LCeNs are actually implemented. In addition, a nationally representative sample of 100 communities will be surveyed to provide a comprehensive picture of k-development in Romania and benchmarks for the Project. These activities, which will be completed by December, will then be used to confirm the k-typology, to identify a further approximately 25 communities which will receive LCeNs, to provide the platform for the main Project activities.

Annex 16. Sustainability of LCeNs: Lessons from International Experience

Since the early 1990s, the concept of building telecenters[18] has emerged as a focal area interest for international policy makers as a result of its widespread popularity amongst state governments. Primarily used as a vehicle for extending access to computers, the Internet, and other information and communication services to rural and low-income urban areas, telecenters have produced a host of mixed results over this period[19]. The overarching rationale behind developing telecenters have been that of working towards the development of a more wired society, better integrated and offering greater opportunities for advancement for individuals. These telecenters have often been vehicles designed to promote universal access to ICT services, and as such, have often received substantial support from the public sector.

The Telecenter Concept

The term "telecenter"[20] refers to a variety of different operating units, which are designed to provide physical access to ICT, with a focus on bridging the digital divide. There is strong evidence linking the absence of access to ICT and the incidence of poverty, and as a result, many national governments have intervened through public sector involvement due to the public good nature of the problem. These telecenters have evolved in many forms, ranging from small basic units which attach on to post offices or fast food restaurants to large standalone centers with lavish facilities (see Figure 1).

Figure 1: Models of Telecenters

Telecenters come in a range of different sizes and structures. The most basic of telecenters can be comprised of a single computer with Internet access, as well as a phone connection and printing and copying facilities. In such cases, the unit may often be run as an individually-operated microbusiness or as a publicly operated venture. Examples of such telecenters include privately operated telephone shops in Senegal, a telephone company's public calling offices in Argentina and add-ons to fast food restaurants (McDonald's in Brazil and Israel).

Standard size telecenters are often larger in size. They generally occupy their own physical locations, and boast a larger number of workstations, dedicated internet connections, and possibly facilities to support distance learning, access to government e-services and e-commerce activities. The largest of these units can be expanded to provide large-scale commercial support services, and possibly even extend access to the Internet to homes and nearby commercial enterprises.

(Source: Sustainable Telecenters. The World Bank Group)

[18] Local Community e-Networks (LCeNs), as defined in the context of this Project, refer to a network of up to three nodes at the community-level, each of which comprises a telecenter.

[19] Wellenius, Bjorn. *Sustainable Telecenters*, Public Policy for the Private Sector. The World Bank Group. Washington, DC: January, 2003.

[20] Concepts similar to telecenters have been identified by a host of different names, including Infocenters, e-Centers, Information Kiosks, Village Knowledge Centers, etc.

Standalone vs. Networked Telecenters

Standalone telecenters are individual operations which tend to be located in rural or disadvantaged communities and are often the sole source of internet access to the communities. Often, in instances where limited Internet access is available in these communities, the telecenters are either funded by the state Government, international agencies or non-government organizations. In such cases, a small number of workstations tend to be established, with dial-up internet connectivity as the norm. New innovative solutions are also now being explored with regards to improving the quality of access, with radio and wireless connectivity as potential solutions.

In communities where internet connectivity is readily available, standalone telecenters have often been privately financed by local entrepreneurs, or have come in the form of public-private partnerships. The key variables for success, however, have often hinged on training opportunities for local individuals to support the operations of these telecenters, as well as for potential users of the equipment. Many of these telecenters have often been 'spun-off' as Internet cafes by local entrepreneurs.

Networked telecenters have also evolved in a variety of forms. These units are geographically dispersed (over varying distances) and are generally centrally coordinated. In many cases, such telecenters have been initially funded by the Government, and are typically small in size. Local private sector involvement in these endeavors has often yielded very promising results, with a central service provider already having been established to support technical needs. In other cases, multipurpose community telecenters have been developed on a larger scale than those operated as microbusinesses. These telecenters have supported a host of community-driven services in addition to those of the basic telecenters (see Figure 2), including e-health services, distance learning, SME support services, banking services and postal functions. Typically, high speed connectivity is established to support their operations, via leased lines or ISDN.

Figure 2: Services Provided by Telecenters

The following services are have been typically delivered by telecenters developed over the past decade:

- Telephone, fax and voicemail
- Internet access: e-mail and web browsing
- Common computer applications: word processing, spreadsheets, database management software, financial tools for SMEs
- Technical support services: printing, photocopying
- Learning and training services

(Source: Sustainable Telecenters. The World Bank Group)

In the context of the European Union, the telecenters concept can be a valuable vehicle in advancing the Lisbon Agenda objective of making the EU the most competitive and dynamic knowledge-driven economy by the year 2010. Based on the Lisbon Agenda, the e-Europe 2002 Action Plan was developed, which focused on three primary objectives[21]:

[21] eEurope 2002: An Information Society for All. Council of the European Union, Commission of the European Communities. Brussels: June 14, 2000.

1. Achieving a cheaper, faster and more secure Internet
2. Investing in people and skills
3. Stimulating the use of the Internet

The establishment of telecenters addresses directly two of these objectives (Objectives 1 and 3) in that they not only make Internet services more directly and affordable available to individuals and SMEs in disadvantaged communities, but also provide incentives for the use of the Internet through making a wide range of new services more easily and readily available for use (e.g. see Nallavadu fishing village case under *The Indian Experience).* In addition, international experience has also shown that these entities can also play a significant role in relation to the second of these objectives, by not only stimulating access amongst youth, but also in bringing communities closer together.

The eEurope 2005 Action Plan was subsequently launched (endorsed by the Council of Ministers in 2003), and provides further scope for the development of telecenters. The Action Plan emphasizes the need to provide widespread access to broadband networks throughout the EU by 2005, with a focus on supporting:

1. Online public services (e-government, e-learning and e-health)
2. e-Business services

The report clearly highlights the major challenge for candidate countries in meeting the targets set forth in the Action Plan, and emphasizes the need for "going beyond current policies to make a real difference[22]". For these countries, there is need to bridge between the uncompleted agenda under eEurope 2002, while completing the outstanding benchmarks under eEurope 2005. This includes a number of focus on connecting almost all companies and schools (under eEurope 2002); an objective which can be strongly addressed under the telecenters model.

International Experiences in the Telecenter Sphere

Telecenters have emerged as a major development tool in many different parts of the world, having gained the greatest popularity in Latin American and parts of Europe and Asia. The following section highlights some of the most relevant experiences from these regions, as well as other parts of the world.

The UK Experience

In the UK, the Government has embarked on an ambitious universal access program which has focused on providing shared access to technology at little or no cost to the population. In doing so, a network of over 7,000 UK 'Online Centers' has been established in a variety of different venues, including libraries, universities, internet cafes, community centers and village halls. The target audience for these sites has been those which are most 'knowledge deprived'– in terms of a lack of alternative means to gain access to technology. This includes individuals with low

[22] eEurope 2005 Action Plan. Council of the European Union, Commission of the European Communities. Brussels: January, 2003.

levels of income, education and minorities, and should also provide for more balanced access across different genders.

One of the major challenges of the UK experience has been that there has been very little evidence of these Online Centers having contributed greatly to widening the usage rates beyond individuals who already had access to ICT services. In large part, this may be due to where these Online Centers have been placed, given that the focus has been on establishing them in areas where existing network facilities where Internet access had previously been readily available. There also remains a major impediment in that there appears to be little perceived value-added amongst the 'knowledge-disadvantaged' portion of the population in terms of the need for access to ICT services. As a result, the issue of better promoting the value of these services, as well as their availability, has emerged as a major issue of discussion in the UK. This would include the consideration of certain strategies which would call for the recruitment of individuals amongst the population to get other individuals in their communities more involved through a bottom-up approach, or possibly even extending access to services through loan schemes which would provide individuals with accessibility in their homes[23].

The UK experience has shown, however, that the placement of Online Centers in libraries can have significant value to promoting lifelong learning programs. Initial findings support that users of ICT platforms within the public library network have tended to exhibit a high demand for such services, and that patrons are maximizing on their opportunities for access[24]. The UK experience is one of many (including those undertaken in Italy and Germany) which have been carried out across the EU in support of the objectives that were laid forth under the Lisbon Agenda, and emphasizes the importance of extending access to disadvantaged areas in support of the eEurope 2002 Action Plan.

The Indian Experience

In India, telecenters have taken off as a major initiative targeted at bridging the digital divide, specifically between rural and urban areas across the country. The efforts in developing these telecenters have been undertaken by a number of different parties, including the State Government, NGOs, and the private sector (individually, and through PPPs).

The majority of initiatives in India have taken a variety of different forms; most catering to a specific need or target audience. For example, kiosks have been developed in certain parts of the country to support the needs of agricultural clients, equipped with easier navigation and roll-over functions for users with limited or no experience with technology. In other parts of the country, where the private sector has been most active, franchise telecenters have been set up in which a large operator has licenses out facilities to private owners who are then responsible for operating these units. In some cases, the private owner has also been responsible for funding the initial capital investment for the telecenter itself.

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[23] Selwyn, Neil. *Widening access to ICT via public sites*, BECTA Digital Divide discussion paper. 2003.
[24] Eve, Juliet and Peter Brophy. *VITAL issues: the perception, and use, of ICT services in UK public libraries*, Library and Information Science Research. September, 2000.

Overall, the most profitable endeavors in India have tended to focus on the younger generation. Telecenters have supported educational and training courses (fee-based) to individuals across a variety of different disciplines. These have been especially popular amongst students, who have often gone on to work in the industry (and sometimes in the telecenters themselves). In addition, some telecenters have offer a services related to the provision of government certificates and records, general information such as employment news, as well as innovations like matrimonial services[25].

A very interesting usage of the telecenters has also emerged in the Nallavadu fishing village in India. The combination involved volunteers working closely with local government officials through the local telecenter. The telecenter was actively used by villagers to digitize many frequently documents and forms and digitized them. Today, they are able to access these forms from the telecenters for a very small fee, thus saving them a great deal of time and providing them with more accurate knowledge regarding subsidy programs for which they are eligible[26].

The Brazilian Experience

In Brazil, the ongoing program of digital inclusion is facilitating the deployment of one thousand telecenters, expected to provide access to ICT services and basic training tools for up to three million people who live in areas which are rated low on the Human Development Index (HDI). The strategy is part of a broader effort to install a total of six thousand telecenters across Brazil by the year 2007, which would target a total of 18 million Brazilians and provide them with permanent Internet access. The model currently used by the Brazilian Government involves a very high degree of community involvement in the overall effort, with communities selecting their own activities and services to be supported by the telecenters.

The telecenters experience has yielded quite promising results to date in Brazil. Several examples of community initiatives have produced significant impact on the community, leading to fewer people on the streets and new entrepreneurial initiatives[27]. In addition, the use of free software by the Brazilian Government has been a very effective tool in keeping the costs of the telecenters at a more manageable level.

The Syrian Experience

In 2004, Syria launched an initiative with support from the United Nations Development Program (UNDP) which finances the establishment of a series of telecenters in rural areas across the country. The telecenters initiative is part of a broad initiative designed to assist Syria in using ICT as a tool for human development, and involve a financial rollout plan which would support the operability of these telecenters under the networked-franchise model.

The Syrian case is a prime example of a phased telecenter deployment approach being undertaken by government. On a national level, only 0.4 percent of all Syrian are Internet subscribers, suggesting a highly underdeveloped market for ICT services. A strategy is in place,

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[25] *Taking Stock of Telecenters.* Cyber India Online Ltd. India: April, 2003.
[26] *Village Knowledge Centers: The MSSRF Telecenter Experiment in Pondicherry*
[27] *Telecenters Promote Digital Inclusion.* Brazil Agora. August, 2004.

however, to assist the growth of the telecenters concept through increased training for potential employees, and just as importantly, in basic ICT services for the population at large. In addition, the Government will be piloting a mobile telecenter Internet unit in the near future[28].

Key Lessons for Sustainability

Given the highly diverse range of telecenter strategies implemented across the world, there is no single formula for gaining success in the practical implementation of telecenter initiatives. One of the major concerns with regards to telecenters is that they become unsustainable once the initial funding provided by governments and/or international organizations ceases. A focus on strategic planning which emphasizes a sustainable business model is key to the implementation of a successful telecenters program.

There are three primary factors which contribute greatly to the sustainability of telecenters: community ownership, public/private cooperation and commercial viability.

Community Ownership

Community ownership is a key variable to the success of telecenters, as exhibited in the case of Brazil. By involving communities in the process from the outset, especially in the case of government-funded telecenters, a much higher rate of demand is generated for the use of these telecenters. In many cases where telecenters have failed, a comprehensive top-down approach was implemented by government, which spurred little interest from the local community. This is similar to the challenge recently faced in the UK, where non-ICT users failed to see the value-added in the services offered through the Government-funded Online Centers.

Public/Private Cooperation

In many of the case studies examined, one of the major formulas for success has been a high degree of cooperation between the local private sector and the local authorities. In the instances where telecenters where privately operated, often by a local entrepreneur, these entities have tended to cater more closely to the needs of the communities, and do more in terms of marketing to the overall population. Often focusing on the younger generation, the experience of telecenters has repeatedly shown that through the provision of more value-added services, attaching fees which are needed to support the profitability of the telecenter has not corresponded with a major decline in demand.

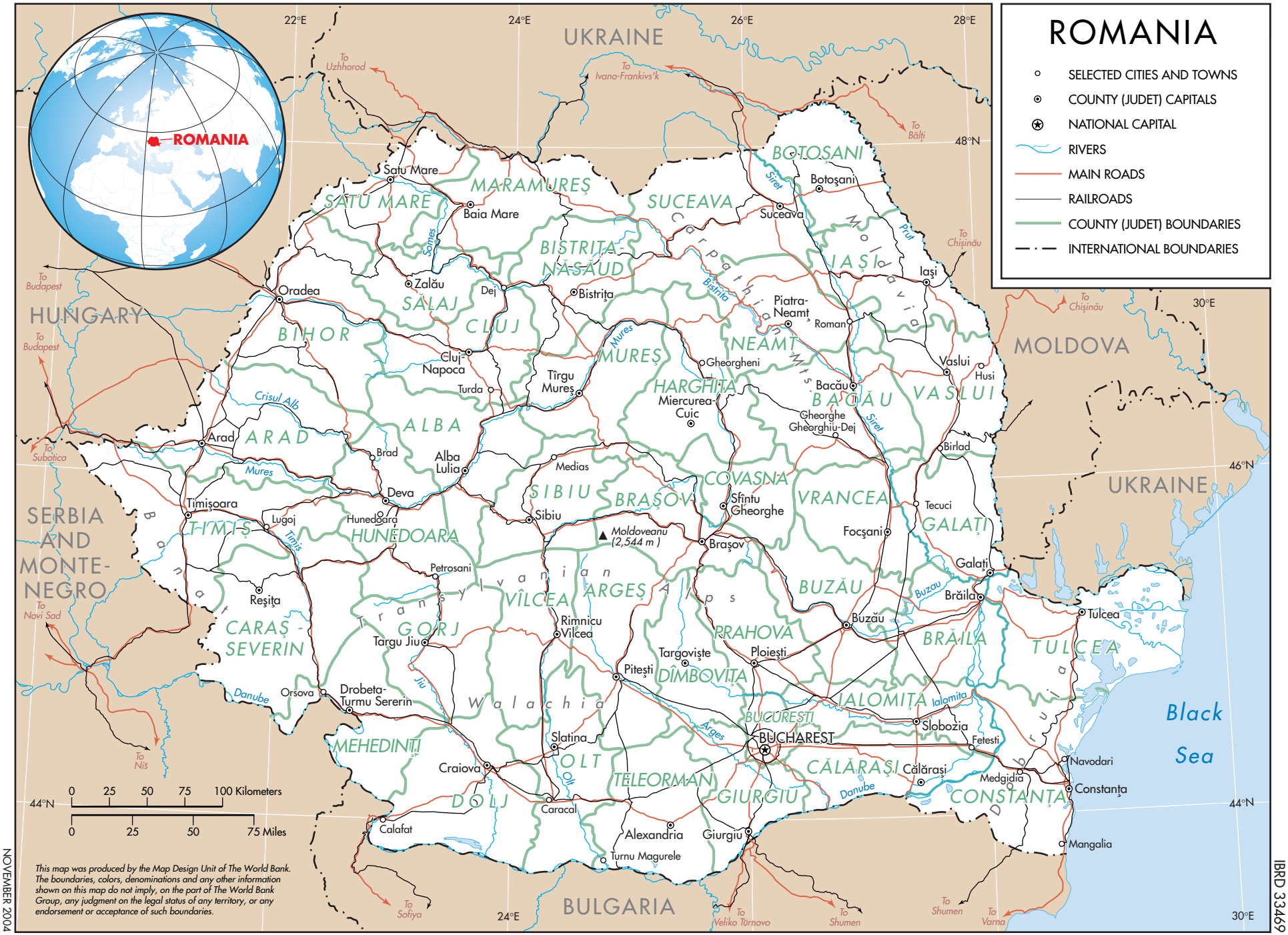
One of the other highly successful models has been that of the franchise-network variety (see *The Indian Experience*). In many cases, large private operators have been able to maximize their economies of scale by making use of their own infrastructure networks, and as such, have been able to transfer these cost savings to the final users. In addition, the establishment of such a network results in savings on the technical support side, and promotes improved performance through greater cooperation and coordination between nodes.

[28] *Syria opens telecenters in rural areas to narrow digital divide.* menaREPORT - IT & Telecom News. April, 2004.

This is not to say, however, that governments should not be actively involved in the establishment of telecenters. Since the rationale underlying the establishment of telecenters involves major improvements to a country's overall development prospects and the bridging of the digital divide, governments should be a key player in the overall process to secure provision of services which are meeting broader objectives and may be not of commercial interest to private providers. Public participation can range from establishing the appropriate legal and regulatory environment for the establishment of telecenters, to financing the initial start-up costs or pilots, or the development of public private partnerships.

Commercial Viability

The issue of commercial viability is inherently tied to the content developed for usage through telecenters. While governments have found that using free software (such as the Linux platform) can result in significant cost-saving realizations, one of the most critical components to establishing sustainable business models involved the commercialization of services to individuals and businesses. Telecenters which provide relevant training services (e.g. computer training and education), support services to SMEs and high value-added internet-based services have tended to be the most sustainable over the long-term.



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