Strategic and Operational Risk in an International Cooperation Agency:

A Knowledge Management Solution

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The International Cooperation Agency (identified in this article as IDEA) working in Colombia is one of the most important in Colombian society with programs that support gender rights, human rights, justice and peace, scholarships, aboriginal population, youth, afro descendants population, economic development in communities, and environmental development.

The identified problem is based on the diversified offer of services, collaboration and social intervention which requires diverse groups of people with multiple agendas, ways to support their mandates, disciplines, and professional competences. Knowledge creation and the growth and sustainability of the organization can be in danger because of a silo culture and the resulting reduced leverage of the separate group capabilities. Organizational memory is generally formed by the tacit knowledge of the organization members, given the value of accumulated experience that this kind of social work implies. Its loss is therefore a strategic and operational risk when most problem interventions rely on direct work in the socio-economic field and living real experiences with communities.

The knowledge management solution presented in this article starts first, with the identification of the people and groups concerned and the creation of a knowledge map as a means to strengthen the ties between organizational members; second, by introducing a content management system designed to support the documentation process and knowledge sharing process; and third, introducing a methodology for the adaptation of a Balanced Scorecard based on the knowledge management processes. These three main steps lead to a knowledge management "solution" that has been implemented in the organization, comprising three components: a knowledge management system, training support and promotion of cultural change.

Keywords: knowledge management, strategic risk, operational risk, risk management, balanced scorecard

1. Introduction

The application of Knowledge Management (KM) and Risk Management (RM) principles, the design of Knowledge Management Systems (KMS) and the application of the Balanced Scorecard (BSC) have mainly been developed in for-profit organizations. This article presents the case of an organization where the final goal is the satisfaction and development of the users-beneficiaries of the services that the organization provides, supporting communities in developing countries.

This article shows how the design of a simplified KMS supports different social programs, reduces the silo culture and reduces the strategic and operational risks

of the organization. This KMS is connected to the organizational processes, KM processes and performance evaluation in order to improve knowledge sharing, access to explicit knowledge, organizing the work flow, and measuring the organizational improvement.

The specific objectives of this article are to:

1. Present KM in a cooperation organization
2. Present the risks of the organization affecting strategy and operation
3. Identify aspects of particular interest in the analysis of this type of organization.
4. Introduce the KMS as a way of tracking value realization of the organization's programs
5. Describe the organization and design of the three subsystems of the KMS: a document management system as repository, a social network as a collaboration tool and a measurement subsystem.
6. Connect with the BSC, KM and business processes in order to support risk mitigation.

The article has been organized as follows: first we present some of the characteristics of the organization and the problems that they have, then a review of the main concepts of KM, RM, and BSC and finally the solution that was adopted.

2. The IDEA organization

IDEA is an organization of international cooperation with operations in Colombia. Two different groups of people work for the organization: administrators and professionals of different disciplines who carry out the development of programs of support to communities.

IDEA thus has multiple profiles in its human resources. The members of the organization meet and interact with diverse groups and communities to help tackle their problems. There is a work documentation structure that requires sequential steps of review and management of a high volume of internal and external documents. There are 16 different areas (12 programs and 4 administrative areas) and 53 people in the organization. This means some programs have as few as two people in charge.

The organization needs a support system to develop collaboration and knowledge transfer; there is a silo culture because of the work of different projects in different places in the country often with very specialized problems to solve. The organization is aware that it is important for the teams to share and develop good practice through inter-area support and the use of the accumulated experience.

There is a web page (portal) for communication externally but it is not fully developed; there is no intranet. The head office has a different design of extranet and its intranet design has not been passed over to the Colombian operation. The current information system has support elements to provide basic information but neither access to documents nor any capacity for shared work.

3. Theoretical Framework

In this section the principal KM and RM concepts used in this research are presented. The KM concepts refer to KM processes and KMS design. The RM concepts relate to the meaning of strategic and operational risks.

Knowledge Management concepts

Knowledge is a sustainable competitive advantage (Alavi and Leidner 2001), which is associated with increased productivity, is a critical success factor and can introduce innovation and competitiveness. Knowledge management is a necessary

process of the organization in order to compete (Von Krogh 1998). For Nonaka (1991), the data and systematic procedures comprise "explicit knowledge". But there is also "tacit knowledge" (expertise, mental models, beliefs, prospects or "Know how") with a process of creation, which is highly personal. These skills are difficult to communicate and systematize. Nonaka (1991) suggests the SECI model that as Alavi and Leidner (2001) pointed out contributes to the organization's productivity.

Alavi and Leidner (2001) adopt the definition of knowledge management as a process, with four sub-processes: Knowledge creation, knowledge storage and retrieval, knowledge transfer and knowledge application.

- Knowledge creation: Organisational knowledge creation involves developing new content and replacing the content already in place.
- Knowledge storage and retrieval: This process refers to the reality of the need to managing organisational memories; knowledge is created and at the same time forgotten.
- Knowledge transfer: This process takes place "... between individuals, from individuals to explicit sources, from individuals to groups, between groups, across groups and the group to the organisation."
- Knowledge application: This process is associated with competitive advantage development and for that there are three mechanisms to create capabilities: directives, organisational routines and self-contained task teams.

In order to support these processes a Knowledge Management System (KMS) is required. Alavi and Leidner (2001) identified the KMS as the "kind of information systems applied to managing organisational knowledge." However, Alavi and Leidner (2001) state that KM requires more than IT; it requires the creation of a means to share knowledge, information processed by individuals and adapted to be communicated.

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Thus, the transition of an information system into a knowledge management system (KMS) requires several components that take into consideration the system design stage. The KMS components (Lehaney et al., 2004; Davenport and Prusak, 1998; Malhotra, 1999; Edwards et al., 2005) can be summarized as follows:

- People interactions: KM and Knowledge acquisition are subject to perceptions and agreement. These human interactions require two subsystems:
- Technology acting as support and the way to enable the KM function
- Organisational structures

The KMS takes into consideration the type of work that people have in communities, environment and technological means to generate development in the society where IDEA should be the engine and support. The purpose of the KMS for the programs-projects is to achieve better coordination and collaboration for making decisions.

Risk Management Concepts

Risk can be defined as "the uncertainty about the world and uncertainty expressed by probabilities related to the observable quantities (Performance Measures)" (Aven 2003). However, for managers the meaning of risk is more related to the concept of loss and there is no clear identification with positive changes of performance (Tanriverdi and Ruefli 2004). In this research, and in the context of IDEA, risk is identified more with the study of the variance of expected results conditioned to previous knowledge. In this context adapting the previous definitions strategic and operational risks are understood as variance of expected results to deliver value to users and beneficiaries.

Strategic Risk has been referred to as, "Strategic Risk for an individual firm can be defined in terms of the probability of losing rank position vis a vis the other firms in the reference set." (Collins and Ruefli 1992). In the IDEA context the view of

Slywotzky and Drzik (2005) guides the adaptation of RM theory to this type of organization. Slywotzky and Drzik consider strategic risk the biggest of all risks for an organization. These authors identify the factors that have incidence in strategic risk as: Industry margin squeeze, technology shift, brand erosion, competitors' strengths, customer priority shift, new project failure, and market stagnation.

The strategic risk is observed as a lack of capacity to achieve the goals, reducing possibilities of supporting community development. On the other hand, Young and Hasler (2010) pointed out reputational risk, which is part of strategic risk, the risk affecting the reputational capital, which includes concepts related to honesty, responsibility, objectivity and fairness in the outcomes and processes.

Operational Risk is "[t]he risk of loss resulting from inadequate or failed processes and systems, human error, or external events." (Ong 2006) A way to relate operational risk and stakeholders is presented by Sadgrove (2005), who indicates different types of hazards depending on the business value chain; this is related to suppliers, process and internal risks, distribution and customers. In the IDEA context the suppliers are represented by organizations that support the agency operation, the internal processes are represented by the activities performed for creation of solutions to the community's problems where the agency is working. Distribution is represented by the members of the organization that works directly with the communities and the organizations that help the service delivery, such as other NGOs or the governments themselves. The customers are represented by users and beneficiaries of the services, programs, and projects.

RM is considered important in the strategic management process (Meulbroek 2002), in particular an integral view of risk management (Brown 2001; Froot et al. 1994; Banham 2004) has the capacity to create value in order to develop a competitive advantage (Galloway and Funston 2000). The competitive advantage of the industrial organization can be limited because of risk of potential losses, caused by expansion, cultural pressures, reduced controls, communication of

business values, learning systems and concentration on information (Simmons 1999). From the social organization perspective development can be limited because of the lack of capabilities to support the required communities' development through the programs-projects.

Performance evaluation

The BSC is one of the methods that organizations use for identifying results and designing strategy. The methodology of BSC was introduced by Kaplan and Norton (1996) identifying four perspectives (Figure 1) to balance the performance evaluation: financial, processes, customer and learning and development. Wegmann (2008) pointed out that the balanced scorecard is a means to support knowledge management and Sears(2009) integrated concepts of Lean Six Sigma into the balanced scorecard supporting knowledge transfer. Additionally, the BSC has been applied to social organizations; for instance, Tardivo and Viassone (2010) summarize the application of the concepts of balanced scorecard to social assistance organizations. In the IDEA context there is an interesting review of the cause-effect structure since the final goal of the IDEA organization is to provide value to users and beneficiaries, not to generate profits.

The BSC has been used as a means to understand the intellectual capital value for organizations (Boda et al.,2008) Their review of intellectual capital measurement systems opens a way to analyze the risk measure based on the changes of the expected results in the BSC. Additionally, Matin et al. (2010) pointed out that the Balanced Scorecard adds value in the knowledge sharing process when organizational objectives and people are matched, identifying roles and responsibilities. Keyes's (2005) approach of applying BSC to the IT area of the organization guides the identification of components that are required in the design of the BSC for IDEA through the review of the purpose of service and realization of benefits for the users.

BALANCED SCORECARD

Adapted from Kaplan and Norton 1996

Financial perspective
- ROC.
- Cash Flow
- Project return
- Forecast reliability
- Quality of the benefits
- Sales quality

Perspective customer
- Price management-indeces
- Understanding of customers
- Customer satisfaction index
- Marketing Share

Perspective internal processes
- Time of services
- Success service rating
- Processes repetition
- Project evaluation

Perspective innovation and learning
- New services development
- Improvement management
- Employees mindsets-behavior
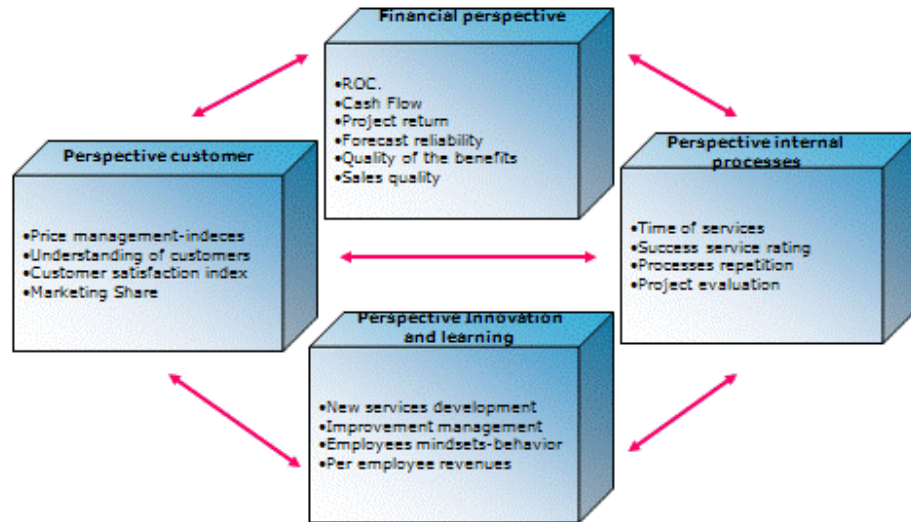- Per employee revenues

Figure 1 Components of the Balanced Scorecard Kaplan and Norton (1996)

Knowledge management systems and operational performance

Liu and Tsai (2007) performed a study in high tech firms to identify the effect of KMS introduction on operational performance, using a BSC approach. The results showed "..5% to 10% improvement in performance in the customer, financial, and internal business process areas and a 10% to 15% improvement in performance in learning and growth area." These results in a sample of 560 managers of Taiwanese high companies suggest that the KMS contributes to the results of better operational performance and the BSC supports the measurement of these results. IDEA is a knowledge organization, not technologically speaking but from the experience and tacit knowledge flow. The connection between creating a simplified KMS that supports tacit and explicit knowledge and the BSC could improve operational performance and mitigate strategic and operational risks.

4. Research project

The first step was to identify the problems that people perceived regarding knowledge management. The approach to problems followed the steps in Table 1, leading to the understanding of mitigating strategic and operational risks through better knowledge management.

Identification of Who they are:	Documentation – review of explicit knowledge
- Identification of a knowledge Map for the organization - Identification of clients: internal and external - Identification of groups and processes, roles and profiles of employees based on knowledge and skills	- Review of the "knowledge map" in light of documents identification-taxonomy - Review of operating manuals - Analysis of process documentation - Revision of the official assessment models - Establish what metadata is needed and how it is working - Establish a classification of documents and types of knowledge associated with the charges and process activities
What kind of information support they have - Watching the operation through information systems. Identification of the content structure and processes - Evaluation data structure and permanence to an appropriate model	**Performance evaluation support** - Identify metrics for monitoring performance of the system (BSC) - Review of the portal to be implemented in parallel and identification technologies to use
Communication, knowledge and decisions - Identification of the structure of communication and the means - Connection between resources and knowledge - Connection problems and making decisions - Connection between knowledge and problems	**Prototypes and system: connecting the points** - Assembly of prototypes to the website (in parallel) - Testing and revision of the prototypes - Transfer of knowledge in the software testing process - Development of diagnosis (knowledge map) - Identification of the main components of the knowledge system - Design and implementation of a prototype system of knowledge based on the mix of content management and interaction from participants - Achieving the goal of improving productivity, including self-training in the culture of the organization - Define a methodology for the different responsibilities in the procurement, maintenance, collaboration and dissemination of content - Improving knowledge transfer capacity - Support and quality control of project development - Keeping the business assets of knowledge in current terms - Organize means of collaboration and support among members of the organization. - Training and support Material Development

Table 1 Steps in the organization analysis

Approach for gathering data: The approach was: first, to meet the members of the teams of the whole organization and share the objectives of the project and to open a dialogue around the issues that arose. Second, the members of the teams were interviewed to search with them for the answers to the questions shown in Table 2. The questions were organized in four sections: demographic, knowledge processes, ways to work, and relationships.

Variables and Questions	
Demographic • Group Name • Members (profile) • Objectives of the Group	Ways to work • Does your group have standardized methodologies? • Does your group use the website? • How to overcome limitations in website? • What are the areas to learn / innovate? • What are the documents to know about?
Knowledge Processes • Knowledge that your group owns • Experiences and skills that your group has • Problem-solving skills that your group has • Relevant knowledge that your group possesses • How to create knowledge in your group? • How to transfer your group knowledge to others? • How store and retrieve your group knowledge? • How apply your group knowledge? • In which areas should your group be better? • How can your group improve?	Relationships • Who are your primary internal users? • Who are your external users? • What are the needs to be addressed? • What is the way(s) used to share results? • What other processes are used by your group? • What is the other group's knowledge that your group uses? • What are the similar groups in the organization?

Table 2 Variables and questions used to gather the data

The data gathered was reorganized and classified according to the objectives of the area, knowledge offer (by IDEA) and knowledge demand, with suggestions for improvement (See Table 3).

Voice of Customer - Suggested Improvements
Standardize all procedures, manuals and reports; develop knowledge management
Collaboration among groups in content development.
Integration between administrative and technical areas in terms of information and knowledge
Create culture of production of explicit knowledge (records, documents, articles or summaries). Give access to information from the outside (web). Training for use of website and intranet.
Integration of knowledge that is overlapped in programs. Example: victims, youth, heritage, and even governance problems.
Develop a system to share, access, store experiences of the teams
Provide information of the status of projects and programs
Be connected with experts, other countries' people that have been involved in similar projects
Introduce virtual training supporting remote work
Improvement of communication between head office and people working remotly
Possibility to upload information, documents, communication with other external applications
Overcome the oral culture better documentation process
Foster integration of systems
Convert web site static and central management into distributed and interactive administration Portal and Intranet, to ensure internal and external communication flow.
Incorporate in Portal programs multimedia (radio, video) and RSS to encourage flow of news, information and usability of web.

Table 3 Summary of findings of suggested improvements

Process review and Knowledge map

A knowledge map (Figure 2 and Table 5) was developed for understanding the organization based on three elements:

1. Identification of the knowledge that the organization possesses and what the organization does..
2. Identification of the organizational processes that are in place, the knowledge available and the knowledge gaps.
3. Identification of the knowledge offer and demand, suppliers and consumers of knowledge.

Analysis of the data shows that the organization processes that are common to the programs/projects can be summarized as:

- Identification of needs and project feasibility – includes research and knowledge networks development
- Formulation of the project – definition of the potential program – includes analysis of best practices and review of experience and knowledge in the field
- Execution of the project – program development – project management and interaction among organization members and intra-organizations
- Internal program evaluation – associated cost and impact
- Follow up of the program – auditing development
- User program evaluation – user/beneficiaries satisfaction
- IDEA performance evaluation – organization results for users/beneficiaries
- Experience administration – learning and maintaining the experience
- Communication – presentation of work done and future steps to the stakeholders

These above processes were identified with KM processes in order to guide the KMS design, and its accessibility. (Table 4)

Knowledge Creation	Knowledge Storage	Knowledge Retrieval	Knowledge Transfer	Knowledge Application
Research	Best Practices	Interactive web	Inter-areas communication	Networks of practice
Experience Automation	Admin.Forms and specimens	Interactive Applications	Knowledge Networks	Project development
Knowledge Networks	Portal and subportals	Networks	User service-contact	Community support

Table 4 Classification of the organization understanding according to the KM processes

The connection between the KM processes and the organizational processes is represented by the knowledge map (Figure 2 and Table 5)

Know How?

- Motivate processes
- Apply project management procedures-cooperation IDEA
- Identify needs
- Develop participation
- Develop communities

Know What and Know Where?

- Political problems
- Strategic Policy IDEA
- Norms
- Services to be provided
- Information partners
- Administrative Procedures

Know Why?

- Motivation for cooperation
- Terms / country circumstances
- Action premises

Knowledge Map IDEA

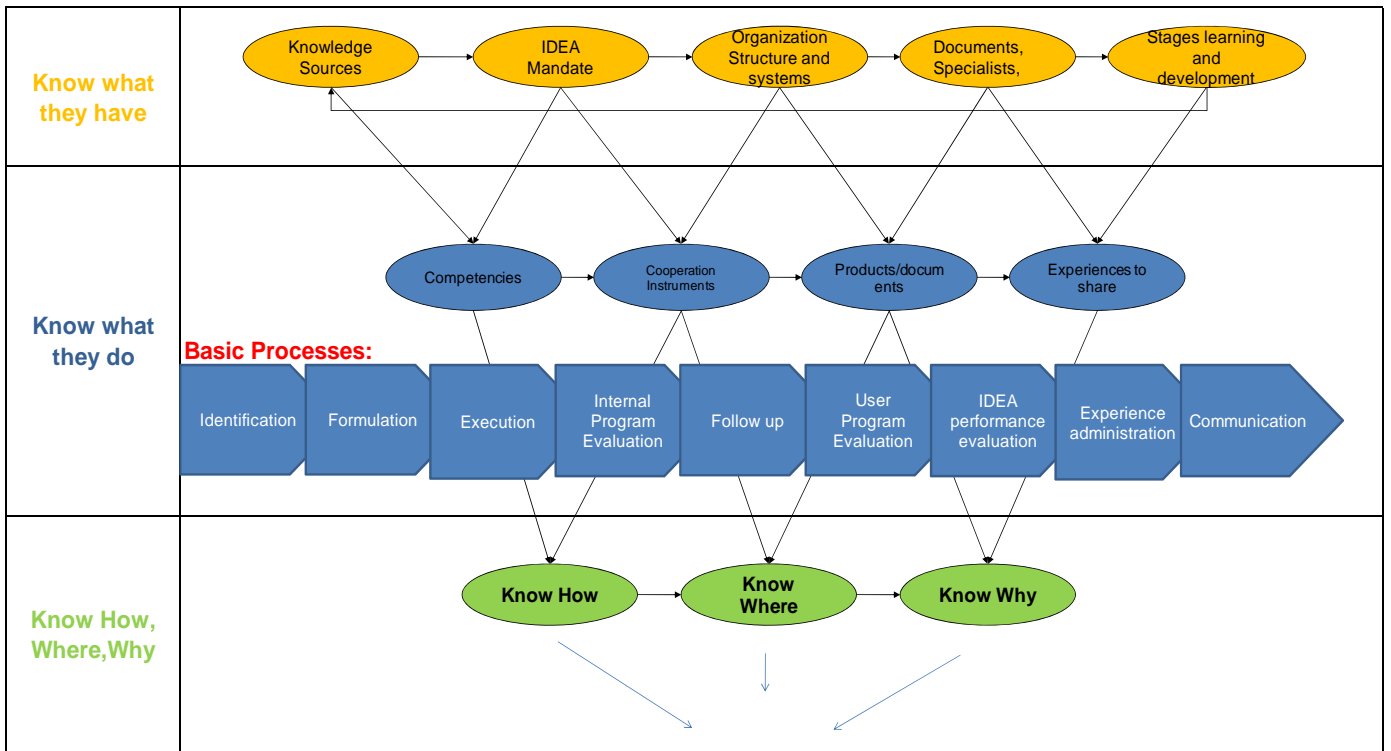|	
Know what they have	Knowledge Sources → IDEA Mandate → Organization Structure and systems → Documents, Specialists, → Stages learning and development
Know what they do	**Basic Processes:** Competencies → Cooperation Instruments → Products/documents → Experiences to share Identification / Formulation / Execution / Internal Program Evaluation / Follow up / User Program Evaluation / IDEA performance evaluation / Experience administration / Communication
Know How, Where,Why	Know How → Know Where → Know Why

Figure 2 Knowledge map: relationship between organizational process and knowledge sources and users

Beneficiaries/users
Know what to offer and what is demanded

OFFER	DEMAND
Strategies: gender equality (with documents of formulation of the programme, memorandum, publications, website, newsletter); of human rights; of governance; of human rights; respect for cultural diversity; Insert actions into sustainable development strategies	Development of activities and benefit identification
Dialog Capacity among people	In communications: monitoring of newspapers, bulletins, participatory strategic planning, working directly with community accompanying projects in culture, gender, social issues. Direct contact with people. Editions of academic character. Administration and logistics in communications.
IDEA project management procedures. Knowledge of partners and agents. Financial elements and resource management; collaboration of groups of experts. Interinstitutional dialogue. Joint technical work with political relations more than specific actions or projects. Geographic information systems. Country's associations foundations. Analysis of context for strategies.	Clear procedures and specific times. Strategies for information management, to systematize her and disclose her ground teams demand agile mechanisms of communication, participation, knowledge of its problems in work processes, higher incidence in decisions, convene them for specific things and not for all. Clear guidelines for communications and reports. To provide good context information that is in field. Increased understanding of cooperation procedures and policies of the head office.
Management of programmes and projects of cooperation; administrative processes for the management of Spanish cooperation projects; existing legislation on subsidies of States; documentation of the programs; frameworks for action; institutional relations (with public, private and international institutions) and huma	Greater interaction between groups and between central organization and field. Population groups (índigenas, Afro-descendants, women, youth) as priority recipients of the programmes and projects, not as thematic areas. Strong and distributed project management (manage 80 projects is difficult). Use management information and accounting of projects (how have been carried out) to decide on future authorizations.
Expertise in various areas: international cooperation for development, strategic planning, management of companies and projects, gender, public management, law, Criminology, legal technique, protection of rights, people and facilities, geographical engineering, communications, on legislation and indigenous communities, problems of youth, economic development and entrepreneurship, accounting, financial management, taxes, economy, environmental	Make visible the experts in the various items. Standardize processes and procedures. Integrate different systems and databases (if possible to unify technologies). You have information available always and everywhere.
In the strategic budget and technical report documents, each project generates a series of documents. standardized. Accounting knowledge and financial knowledge and is at the service of all technical cooperation, for that search a graduate the Organization and structure the work you gave me the experience of the private sector.	Standardize all the processes and procedures, and be able to interact from anywhere
Expertise in systems engineering. Programming client - server environments. I.e. programs that work on network.	More value to information automation and use of the web
In communications: monitoring of newspapers, bulletins, participatory strategic planning, working directly with community accompanying projects in culture, gender, social issues. Direct contact with people. Editions of academic character. Administration and logistics in communications.	Permanent availability of the information and documentation (information and knowledge management interactive). Improvement of the web. include multimedia programmes (radio and video) on projects and events that bring forward is to train for greater use of ICT and especially the interactive web.

Table 5 Knowledge map: summary of offer and demand of knowledge

5. Knowledge Management System as mitigator of Strategic and Operational Risks

We have identified various aspects that can affect the performance of IDEA: the diversity of programs-projects that the organization has, the reduced number of staff to control processes and the implications of a potential reduced capacity to deliver a good service to the users and beneficiaries, which increment risk position. The improvement of the intranet, used as a knowledge management portal, and training related to sharing knowledge were the proposed pillars for mitigating strategic and operational risks. The use of an internal network and participation of people in the evaluation of the process of IDEA continuous improvement was identified as a means to proceed with IDEA performance evaluation.

Identification of Strategic and Operational risks for IDEA

The interviews that were performed identified the problems of the organization as follows:

Strategic Risk

To understand strategic risk the concepts that were presented by Slywotzky and Drzik (2005) were adapted to social organizations: Industry margin squeeze was identified as difficulty of access to government funds, technology shift as process and technology support to the changes in the community needs, brand erosion as reduced reputation, competitor's strengths as the strengths of other cooperation organizations working with similar or equal groups and purposes, customer priority shift as the user/beneficiaries value shifts, new project failure as reduced adequacy of project development for the specific group, and market stagnation as user/beneficiaries stagnation. Based on these points and the work of Young and

Hasler (2010) for the analyzed organization the strategic risk would be represented by the following:

Reputation: The organization has goals to achieve that involve responsibilities with three main stakeholders: the international organization that is supported by the government of the originating country, the country where the organization is working (in this case Colombia), and the users and beneficiaries of the programs and projects.

Trust: Comprises two main aspects: reliability and credibility (Maister et al. 2000). Reliability is identified in the sense that the local country can be confident that the programs are supporting areas where the local country is not able to act to solve community problems. Credibility is identified in the sense that the organization has the expertise to accomplish the responsibilities that the local government and users expect to be performed.

Funding: There are limited funds around the world for development organizations. The reduction of budget and access to resources can be a barrier to developing and finishing projects.

Organizational adaptation to changes: Changes that appear from new country's regulation, organizational morale and internal adoption of new government's requests. The strategy to be adopted by the organization for the coming years is under construction. As such, it must be assumed as a constraint. It is required to initiate an awareness-raising of the corporate culture that is expected and desired. It is important to create and maintain over time an environment for developing staff competencies (knowledge, attitudes and skills) to ensure the success of projects, even with new members of IDEA. The work on the organizational culture must be maintained over time to take effect.

Operational Risk

Effectiveness: Self-confidence of the different teams is great. However, officials report that the daily work does not leave much time for fundamental processes of knowledge management: neither knowledge creation nor the actions or process tips are recorded or documented nor is systematization of experiences done. It seems that there are only progress reports and final project presentations, no supported storage in intranet or on the Web (which can be public), to share knowledge with other teams, and ensure implementation at different levels (not only in the area where it was created). The silo culture has increased.

User/beneficiary satisfaction: There are different kinds of users: communities and external organizations that are involved in the programs. They can be public or private. The volume of document exchange is high and the subjects very diverse. The contacts with organizations are also diverse. The interviews show in the knowledge demand section the need for improvement regarding the users-beneficiaries.

Efficiency of resource use
- Process: There are no clearly defined or standardized processes. Some are repeated, but everyone makes their own way. There are opportunities for improvement in activities related to Knowledge Management as the survey results showed.
- Procedures: Lack standardization and, if possible (if not established by the head office), need to review the "format" existing.
- Systems: Currently there are various applications (software). However, there is only evidence of a systematic use of some of them. Although there are differences in personnel, this appears to be due to deficiencies in digital culture or that system improvement is not perceived as useful for job performance

improvement. It is important to create an environment for developing information skills among members to ensure the management of project applications.

- Intranet: Currently there is none, but there seems to have been work on the design of one. A permanent unified site is needed and easy access to information that requires the organization to facilitate interaction between the teams, and even to provide management information on progress in knowledge management. Both the intranet and information management applications have to be designed and assembled and staff trained in their use.

- Web pages: There are several. The site does not have a formal oversight mechanism for processes such as content updating. It suggests the design of a true interactive portal to incorporate the different pages (and those under construction) and the various services that the organization currently offers or may offer.

- Library and Documentation Centre: either traditional or virtual, is looking for the satisfaction of the internal user population (and the external one if possible) because they are waiting for offers of information and services. This requires use of clear standards and protocols.

Lack of knowledge

Information and documents are produced in a high volume mainly associated with the government related organizations. However, their production and distribution are not standardized, their storage is very time consuming and retrieval is difficult.

Collaboration: Inter-area work and networking with users is small and informal. It should be facilitated and systematized. This is without doubt the area where people are looking for solutions. Although there is interaction the experience is not recorded, stored, shared and communicated in a formal and systematic way.

Training: Given the time constraints for training, it has been through basic virtual training and learning by doing in practice.

Knowledge Portal design as a KMS

The problem identification and the knowledge map led to the design of a KMS for connecting explicit and tacit knowledge with performance evaluation. Four main elements contribute to the design:

- Using the knowledge map through meetings of concept validation and training to identify who knows what and how they can support other processes. For example a person who is an environmentalist but working in a project with a community can be part of the support for other programs that require solutions to environmental issues. Because of the expertise of different people working only for some programs the internal social network and data for registration provide the connection.

- Based on the organization processes, documentation taxonomy and defined metadata, the organization can share experiences and reports of projects in order to improve other practices within the organization

- The measurement is part of the system based on the data that is coming from the perception survey of the members of the organization (See Tables 6-11). This survey is expected to be repeated at least once per year. Risk will be measured as the variation of the results of the survey taken at different times. The survey contains KM Processes, BSC components and Organizational Processes variables.

- Supporting the change of the organization´s processes using the portal technology in order to support the programs and projects.

Principles for creating and using the new portal reduce the fear and look for answers to the operational and strategic risks detected. The portal is user content

creation and interaction driven. The approach was to simplify the taxonomy of documents, provide access to resources and to empower the users for direct interaction in updating and sharing content. This means that the user will be the owner of the work area in the KMS and is identified as responsible for keeping the documents updated using the metadata that were predefined.

The main menu of the solution was based on 7 components (See Figure 3):

- Section to upload documents where people interact with the system and acting as a general repository that can be filtered using the metadata structure.
- Basic Documents section: contains institutional material: international headquarters documents, documents about Colombia and the publications of IDEA as well as general interest, statistics and other organizational documents.
- Resources section: contains folders for archiving documents, manuals and procedures, directories, formats and folder tree (the latter is an option that shows, in successive levels, all subfolders of the repository or files. In total: 357 folders).
- Services section: administrative content regarding personal management, vacation or internal resources use. Work documents: documents of the daily work classified by programs of IDEA.
- Evaluation tools: Focus on BSC, web and network use
- Social networking: oriented to knowledge sharing across the programs and search for experts

Figure 3 Main Menu of the intranet

This basic structure rather than a centralized process of documentation and interaction supports the strategic and operational risk mitigation. People need to keep the documents updated and follow standards in order to show a single organized face to stakeholders. The most important step is the motivation to break the silo culture. The reason is that the reputation, trust and potentially funding could be jeopardized if there is not a change in the mind-sets and behaviours.

The mitigation of operational risk can be improved through: better documentation and access to explicit knowledge, contact with experts in various areas and the use of the internal social network to exchange personal and professional interests. Operations are supported by the organization of the documentation based on organizational processes and programs-projects that is natural for the members of IDEA.

The search for improvement and risk mitigation led to the identification of the factors that should be measured in the BSC (see Figure 4). A basic strategic map (Figure 5) shows how the interaction of areas will be and which the input should be

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to achieve the final desired result of better value delivery to the communities and other stakeholders.

Customer-Beneficiary
- Deliver service in a consistent way regarding value and quality
- Increase public awareness and visibility
- Strenght the commintment of community and government
- Increase the community support
- Improve quality delivery of services for special groups

Learning and Growth
- Improve organizational trust and team work
- Built competences to support strategy
- Hire and keep the best human talent
- Asure learning based on data, results and experiences
- Innovate in the solution and support process

IDEA Objectives
Promote, manage and execute the intenational cooperative policies to fight against poverty and a sustainable human develoment for developing countries

Internal Process
- Implement continuos improvement process
- Improve practices of the organization - efficiency
- Develop an integrated information system
- Develop Risk Management program

Resources - Finance
- Improve supplier contract process
- Increase efficiency of direct costs
- Increase efficency of administrative costs management
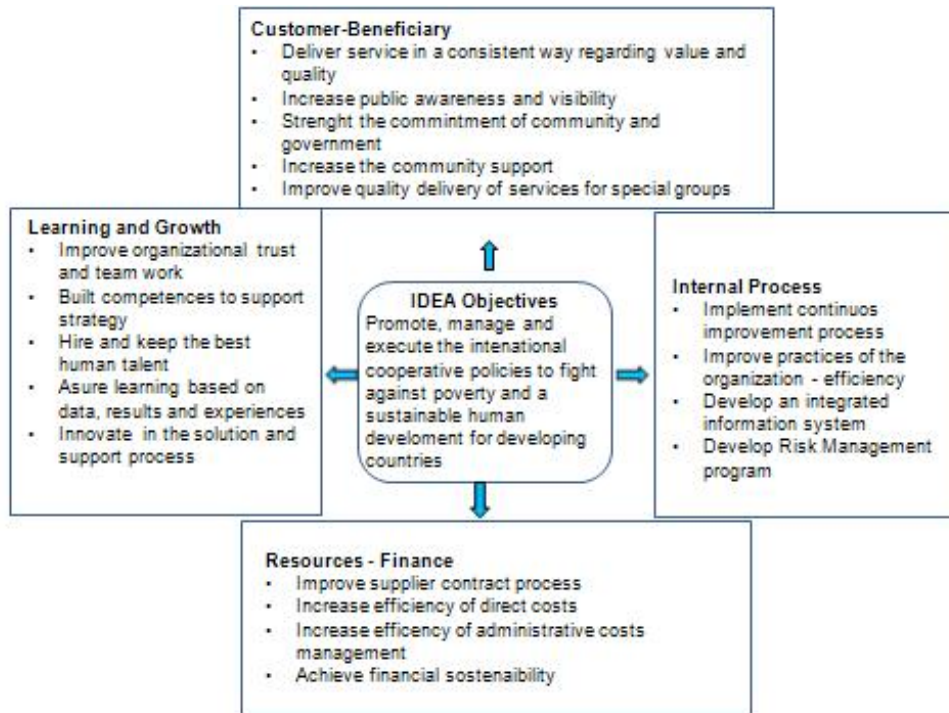- Achieve financial sostenaibility

Figure 4 BSC Components adaptation of the Kaplan and Norton Model

The BSC and strategic map (Figure 5) put the user-beneficiaries as the top level, the level where the organization's efforts have to converge. Resources and internal processes are the filters and bottle neck for the organization development due to the implementation of new head office policies.
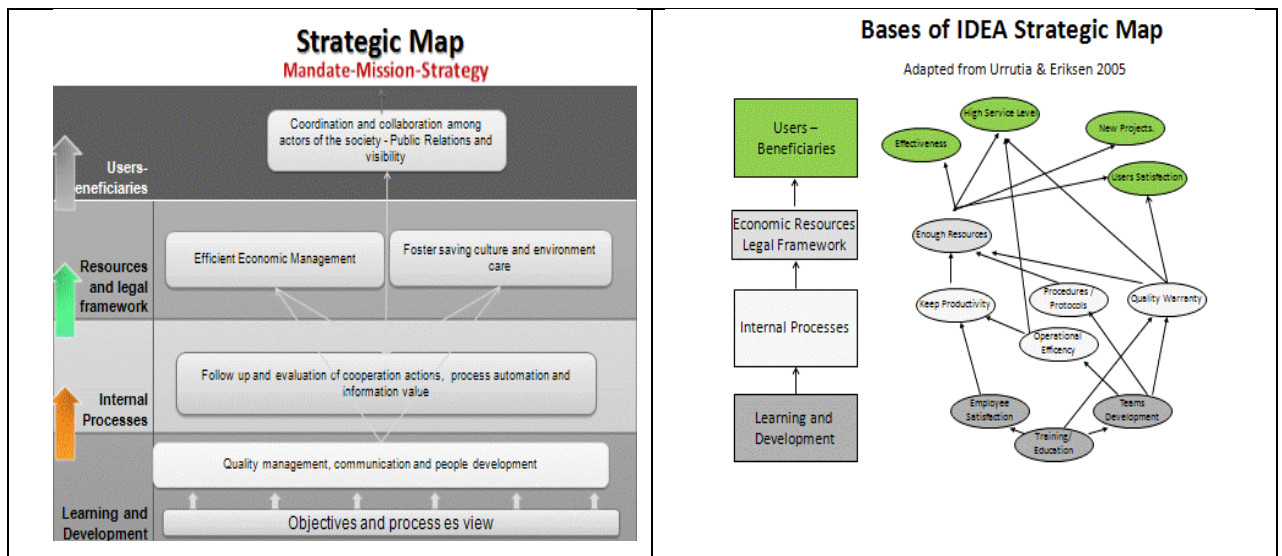
Figure 5 Bases of the strategic map that guides the RM process

The selected measurement system for the BSC blended with KM processes and business processes is based on a BSC survey (See Tables 6-11). The structure of the survey is: Objectives of the KM program by KM process and each one related to the BSC components. Each BSC component is divided into specific items as presented in Figure 4.

Indicate 1=Deficient, 2=Insuficient,3=Acceptable
4=Satisfactory, 5=Outstanding

General Objectives for the KM program	IDEA Processes Knowledge Management Processes and BSC	Identification	Formulation	IDEA performance	Execution	Follow up	Program evaluation	Comunications	Experience Management	Total
	Knowledge Creation									
	People Development and Learning									
	Promote the search of new solutions to benefiaciaries' problems	5	1	1	1	1	1	1	1	12
	Foster the staff participation in problem solutions	5	5	5	5	5	5	5	5	40
	Foster the execution of new solutions	5	5	5	5	5	5	5	5	40
The IDEA team in Colombia develops the documentation of experiences, promotes the innovation culture, and search for process-program solutions in line with the guidelines of the Head Office Master Plan.	**SUBTOTAL**								92	
	Internal Processes									
	Promote the use of Intranet for new knowledge creation	5	5	5	5	5	5	5	5	40
	Promote a continuous innovation process	5	5	5	5	5	5	5	5	40
	Foster new solutions	5	5	5	5	5	5	5	5	40
	SUBTOTAL								120	
	Resources and Legal Framework									
	Foster the improvement of resource allocation and operation IDEA	5	5	5	5	5	5	5	5	40
	Promote the understanding of legal framework	5	5	5	5	5	5	5	5	40
	Support for time execution in project	5	5	5	5	5	5	5	5	40
	SUBTOTAL								120	
	Users - Beneficiaries									
	Promote the improvement of effectiveness of actions to support users	5	5	5	5	5	5	5	5	40
	Promote methodology improvement for projects and program dev.	5	5	5	5	5	5	5	5	40
	Promote users participation to find answers and solutions to problems	5	5	5	5	5	5	5	5	40
	SUBTOTAL								120	

Table 6 Objective 1 Knowledge Creation and the BSC components

	Knowledge Storage and Retrieval									
	People Development and Learning									
The IDEA team in Colombia uses predesigned formats, uses of Intranet for filing and consultation of documents. Management of the documentation process.	The use of documents and information stored is suitable	5	5	5	5	5	5	5	5	40
	The volume of documents uploaded to the Intranet is appropriate	5	5	5	5	5	5	5	5	40
	The volume of documents consulted in the Intranet is appropriate	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Internal Processes									
	The existing technology supports the creation new solutions to problems	5	5	5	5	5	5	5	5	40
	Access to documents is easy	5	5	5	5	5	5	5	5	40
	The process to access information is adequate	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Resources and Legal Framework									
	The budget data are comparable in different time periods	5	5	5	5	5	5	5	5	40
	The control structure of budgetary data is adequate	5	5	5	5	5	5	5	5	40
	The budget structure encourages the creation of new solutions for users	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Users - Beneficiaries									
	The shared analysis of beneficiaries´ needs encourages new solutions approach	5	5	5	5	5	5	5	5	40
	User information is easily accessible in filed documents	5	5	5	5	5	5	5	5	40
	Users participate actively in identifying and implementing solutions	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				

Table 7 Objective 2 Knowledge Storage and Retrieval and the BSC components

	Knowledge Transfer									
	People Development and Learning									
The IDEA team in Colombia uses the interactive tools available on the Intranet improving collaborative and coordinated work among the various functional areas.	Our partners are willing to share knowledge	5	5	5	5	5	5	5	5	40
	Meetings to discuss collaboration solutions are appropriate	5	5	5	5	5	5	5	5	40
	Activities which promote knowledge are appropriate to share	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Internal Processes									
	The use of systems for working with other people is appropriate	5	5	5	5	5	5	5	5	40
	The technology for inter-communication and collaboration is adequate	5	5	5	5	5	5	5	5	40
	Today's technology helps us achieve better results	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Resources and Legal Framework									
	Training for use of resources is adequate	5	5	5	5	5	5	5	5	40
	The financial resources to support knowledge transfer are adequate	5	5	5	5	5	5	5	5	40
	The execution of the budgets to support joint work is appropriate	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Users - Beneficiaries									
	Collaboration among groups adequately supports users	5	5	5	5	5	5	5	5	40
	Better resource use for undertanding more the organization	5	5	5	5	5	5	5	5	40
	Knowledge sharing with other staff and users is appropriate	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				

Table 8 Objective 3 Knowledge Transfer and the BSC components

	Knowledge Application									
	People Development and Learning									
The IDEA team in Colombia designs operational plans for the early implementation of the results of cooperation service, identification of opportunities for solutions and improvement. Develop the learning process across the organization.	The interest of employees in applying knowledge is adequate	5	5	5	5	5	5	5	5	40
	The application of knowledge is timely	5	5	5	5	5	5	5	5	40
	Institutional conditions are suitable to apply knowledge	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Internal Processes									
	Existing technology promotes the application of knowledge	5	5	5	5	5	5	5	5	40
	Business processes encourage the application of knowledge	5	5	5	5	5	5	5	5	40
	The ability to change and process improvement is adequate	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Resources and Legal Framework									
	Incentives for application of knowledge are appropiate	5	5	5	5	5	5	5	5	40
	The project implementation capacity improved through the application of knowledge	5	5	5	5	5	5	5	5	40
	The resources devoted to apply the knowledge to do a better job are adequate	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Users - Beneficiaries									
	The accumulated knowledge in the institution supports the users very well	5	5	5	5	5	5	5	5	40
	The ability to develop new projects and solutions is getting better	5	5	5	5	5	5	5	5	40
	The implementation of institutional knowledge to solve problems is adequate	5	5	5	5	5	5	5	5	40
	SUBTOTAL					120				
	Total	240	236	236	236	236	236	236	236	1892

Table 9 Objective 4 Knowledge Application and the BSC components

The accumulated scores of answers to the BSC survey were the guide to identifying areas of improvement and to measuring the variance against the goals. The structure offers three levels of objectives definition: KM, BSC components and organization processes. The accumulation of scores is taken for example by items of knowledge creation, or for the people development and learning component of the BSC. The IDEA process index is the accumulation of the values by columns.

Bases for objectives generation		BSC index bases		Variance KM	Variance BSC
KM processes		**Bases BSC**			
Knowledge Creation	452	**People learning and development**	452		
Knowledge Storage and Retrieval	480	**Internal Processes**	480		
Knowledge Transfer	480	**Resources and legal framework**	480		
Knowledge Application	480	**Users-Beneficiaries**	480		

IDEA Processes Index		Variance IDEA Proc.
Identification	**240**	
Formulation	**236**	
Valuation	**236**	
Execution	**236**	
Follow up	**236**	
Program Evaluation	**236**	
Communications	**236**	
Experience Automation	**236**	

Table 10 Points composition and variance evaluation with respect to time measures as a measure of risk

The implementation of the measurement system is through pages that are presented using chained menus for the BSC components, the KM processes and the access to and retrieval of documents (document management) (See Figure 6)
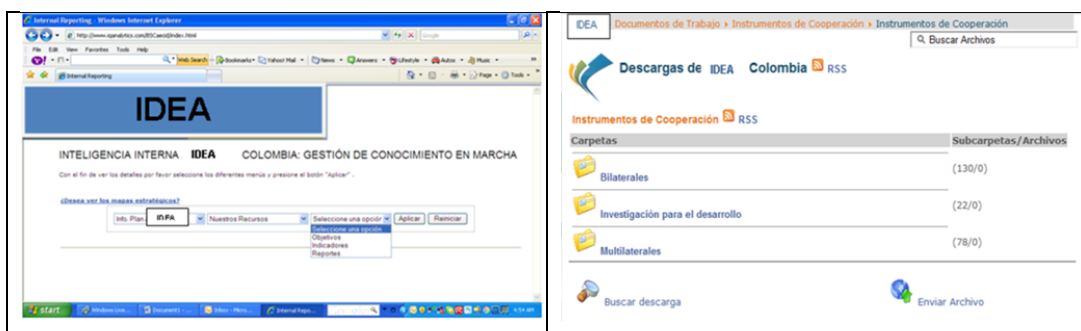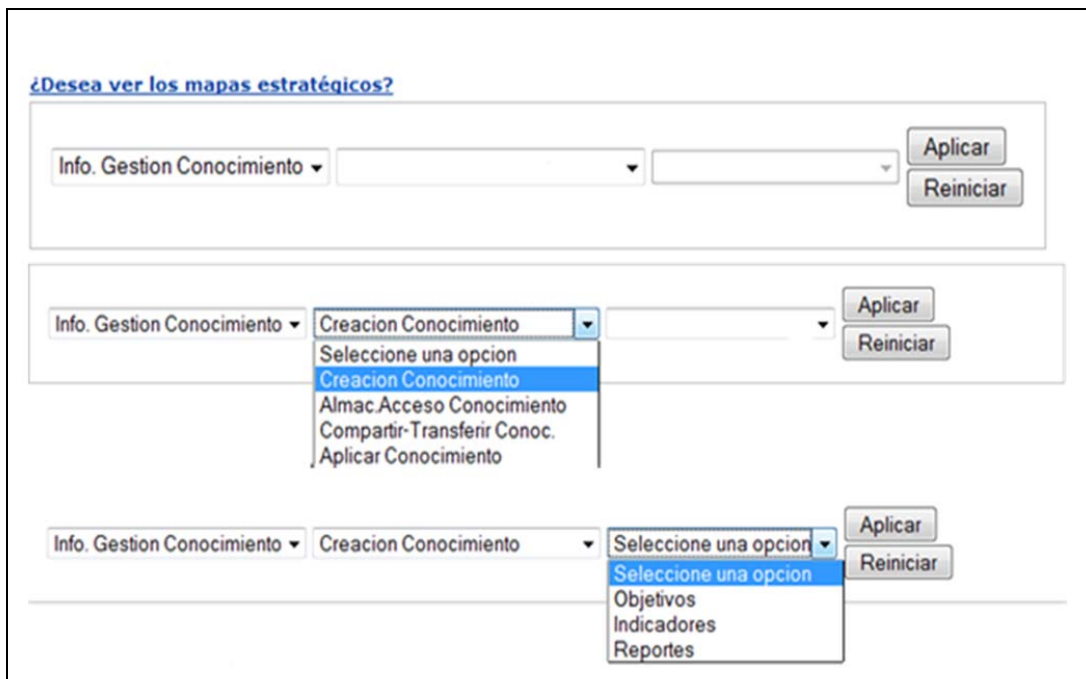
Figure 6 Two views of the KMS: BSC components, document management and KM implementation based on chained menus

The KMS introduction, based on KM and RM principles, was through training sessions, discussions and promotion of ideas exchange for improvement. The general evaluation of the final training sessions (See Table 11) shows that the groups found that the new way to work and use the intranet will support their work and feel that the application in their daily activities will be possible. The reinforcement in practice is part of the learning process and the observation of getting a new set of mind-sets and behaviours opens the expectation of consolidating the process of KM and RM analysis and support for better value delivery.

	Group 1		Group 2		Group 3		Group 4	
	Yes	NO	Yes	NO	Yes	NO	Yes	NO
Training evaluation	%	%	%	%	%	%	%	%
The course makes my work easier	100	0	100	0	88.9	11.1	85.7	14.3
I can apply this new knowledge to my work	100	0	100	0	100	0	100	0
The training provided me the tools for performing my work	100	0	100	0	62.5	37.5	100	0
I will apply what I learnt to my work	100	0	94.4	5.6	100	0	100	0
What I learnt produced new mindsets and behaviors	100	0	52.9	47.1	66.7	33.3	75.0	25.0
I need to reinforce what I learnt	75	25	89.5	10.5	100	0	100	0

Table 11Evaluation of the training that guides the perception of the new system

6. Conclusion

This article has presented the steps to develop a KM program and to design a KMS in a cooperation organization. The analysis has identified two risks to concentrate on: strategic risk and operational risk. In this kind of organization the knowledge asset is the most important and the source of producing the mandated solutions. The issues related to organization, management of people, documents etc. are converted into risks. These risks affect the work flow and the service delivery. IDEA required a simplification of the processes to use what they know in order to mitigate risks – changing the way of tracking value realization of the programs. Three subsystems based on portals were introduced: document management systems as a repository, access to and storage of explicit knowledge; social network as a collaboration tool; and a measurement subsystem as a means to continuous development through objectives definition and a guide to measure risk as variance of expected results through time.

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