11-18-2008

E-Government and Inter-Organizational Collaboration in Mexico: Survey Results

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NCDG Working Paper No. 08-003

Submitted November 18, 2008

Executive Summary

This document summarizes the responses to questionnaires completed by participants from inter-organizational information technology (IT) projects in the Mexican federal government. The questionnaire was undertaken as part of a research project on e-government and inter-organizational collaboration funded by the National Council of Science and Technology (CONACYT) and conducted jointly by researchers from the Business School of the Universidad de las Américas in Puebla, México, the Centro de Investigación y Docencia Económicas in Mexico City, and the National Center for Digital Government at the University of Massachusetts in Amherst. The responses reflect the opinions of 282 government officials participating in 13 inter-organizational digital government projects within the Mexican federal government, collected during the spring of 2006.

The main purpose of the research is to understand the difficulties inherent in carrying out IT projects that involve multiple government agencies, as well as the impact of these projects on governmental processes, services, and results. Mexico has been part of the information revolution and has designed and implemented numerous projects that use information technology to improve public services, increase the efficiency of government procedures, or foster citizen participation.

In contrast with the promised improvements, e-government applications have encountered important challenges in both their design and implementation. Additionally, the impact of e-government applications is affected by organizational factors, characteristics of the institutional framework, and important contextual variables such as the political, economic, and social national contexts. Our understanding of such impacts is still limited. This working paper constitutes a descriptive report of the survey, and it is one of several project-related documents (Gil-Garcia & Luna-Reyes, forthcoming; Luna-Reyes, Gil-Garcia, & Cruz, 2007a, 2007b; Luna-Reyes, Gil-Garcia, & Estrada-Marroquín, 2008).

The main descriptive findings obtained from this study are:

- There is great variation in terms of the number of agencies or units involved within each one of the projects. The projects that have the greatest complexity in terms of the number of agencies involved are e-Health, the Coordination of e-Mexico, and the System for Information Requests managed by the Federal Institute for Access to Public Information (SISI).

- Given the number of hours per week they dedicate to the project, the majority of officials responding to the questionnaire have other work assignments in addition to the digital

government project. Those projects with a greater proportion of officials dedicated full-time to the project are the Coordination of e-Mexico, the Integrated Model for Technological Innovation of the PGR (Justice Department), the Mexican Social Security Institute, and the Internet System of the President's Office.

- Slightly more than half of the participants in the projects analyzed (55%) have experience in the area of IT and about one quarter claimed experience in policy or program development (31% and 25% respectively).

- 60% of the respondents had less than 10 years of experience working in government, although a substantial number of them (45%) had from 10 to 20 years of general work experience.

- 97% of the respondents had a university education and 40% of them had postgraduate degrees (masters or doctorates).

- A little more than half of the respondents (52%) felt that the goals of the projects they were involved in were clearly defined; a slightly smaller percentage (43%) felt that these goals were reachable. However, only 36% recognized the existence of clearly defined performance indicators for their projects.

- Almost all the project participants felt that their projects were important (51% graded their projects as 10 on a scale of 1 to 10 and the average score was 9.2).

- Five measures of success were used most often in the projects: improved quality of client services (65% included this as an important measure), creating a more transparent government (63%), increasing confidence in the government (60%), reducing costs (55%), and reducing response times (54%).

- Some measures of success that were not included in the quantitative part of the investigation, but that were mentioned by respondents in the qualitative section, are associated with the rate of adoption of the systems by the government agencies or citizens and measures of the intensity of system usage or user satisfaction. It was also mentioned that success could be measured by the achievement of goals associated with the projects.

- In general, the survey participants considered the projects successful. On a scale of 1 to 10, the projects had an average score of 8.31. The areas in which the projects demonstrated greatest success were improvement in the quality of service (average 8.75), the creation of a more

transparent government (average 8.65), and the creation of necessary infrastructure for the use of information technologies (average 8.57). The areas with room for improvement are fostering citizen participation, cost reduction, and increasing agency productivity. The success of the projects can also be seen in the fact that about three fourths of the respondents (77%) consider their participation in the project as beneficial to their own career.

- The evaluation scores for project quality were principally distributed across medium and high levels. The quality criteria for which the projects scored highest were utility (average 8.97 on a scale of 10 points), security (average 8.85), and privacy (average 8.78). Those criteria where room for improvement exists include personalization (average 8.30), ease of use (average 8.44) and the level of functionality of the system (average 8.53).

- In contrast with the quality scores, the perception of project success and optimism regarding the possibility of achieving project goals, only 55% of respondents considered that the project had sufficient human resources to reach a successful conclusion whereas 62% felt that there were adequate financial resources to complete them. Opinions were also divided with respect to the recognition received for working on the project. Sixty eight percent (68%) of the public servants that responded to the survey felt that the recognition they had received for their work on the project was positive.

- Seventy one percent (71%) of the respondents considered that the culture of government is changing and moving towards the realization of inter-organizational projects and 67% believe that these types of projects will have a positive effect on government performance. Nonetheless, differences in standards between agencies, political factors, resistance to change, the bureaucratic system, and efforts to serve individual interests on the part of some agencies are cited among the main barriers to capitalizing on the benefits.

- The area in which a clear division was shown in respondents' opinions is the area associated with legislation and congressional support for inter-organizational initiatives. Only 47% of respondents felt that current legislation supports IT initiatives involving more than one agency and only 31% believe that Congress supports this type of initiatives.

- Finally, the respondents identified the following as being some best practices in the development of inter-organizational IT projects:
    - o Carefully defining needs and formulating a detailed plan.

- o Dividing project development into clearly defined phases.

- o Clearly and precisely defining goals, especially those that are shared by different agencies.

- o Forming working groups and defining responsibilities.

- o Empowering group leaders to make decisions.

- o Assuring efficient communication between participants.

- o Continuously monitoring and reviewing progress benchmarks.

Tables and graphs that support the findings presented in this executive summary will be presented in the following pages.

Introduction

This document constitutes a descriptive summary of questionnaire responses from participants in inter-organizational IT projects in the Mexican federal government. The questionnaire was pursued as part of a research project on E-Government and Inter-organizational Collaboration funded by the Mexican National Council of Science and Technology and conducted jointly by the School of Business of the University of the Americas in Puebla, the Center for Technology in Government of the State University of New York in Albany, and the National Center for Digital Government of the University of Massachusetts in Amherst.

The main goal of this research was to better understand the difficulties and potential impacts of IT projects that integrate government processes across multiple agencies to offer information or transactional services. Many of these initiatives have been motivated by the availability of new information and communication technologies (ICTs), as well as international trends associated with the New Public Management. These types of initiatives have been called digital government, electronic government or e-government. Mexico has been part of this information revolution and its government has designed and implemented various e-government projects and policies, such as the Agenda for Good Government, which represents an effort to follow the international trends mentioned above.

The main motive for initiating inter-organizational e-government projects is their potential to transform government structures and their capacity to radically improve the provision of services to citizens, improve the efficiency of government procedures, or increase citizen participation. In fact, such

initiatives are considered one of the most complex examples of e-government because they require radical changes in both the operation of government agencies and in the institutional environments in which they are embedded.

Despite the promise of important improvements, e-government applications have encountered complex challenges in both design and implementation. Additionally, many e-government applications are affected by organizational factors, characteristics of the institutional framework, and contextual variables such as the political, economic, and social conditions of the country.

The main objectives of the study were:

- Analyze the observable similarities and differences between e-government projects in which multiple agencies participate.
- Understand the most important factors that influence the design and implementation of this type of projects.
- Identify and analyze relevant variables in the institutional environments within which these projects are developed.
- Identify and analyze the organizational variables that impact the design and implementation of these types of inter-organizational projects.
- Develop a theoretical framework consistent with prior research and based on the empirical analysis of these types of projects within the Mexican context.
- Provide practical recommendations to guide the reconfiguration of both institutional frameworks and improvements in organizational structures and processes.
- Suggest actionable strategies for managers of inter-organizational e-government projects based on rigorous analysis to help them identify and confront problems in the design, implementation, and evaluation of these types of initiatives.

The responses reflect the opinions of 282 federal government officials participating in intergovernmental e-government projects who responded to the invitation to participate in this study (1,216 invitations were sent out with a usable response rate of 23.2%). The individuals that responded to the survey included developers, programmers, project managers, program staff members, and final users. The questionnaire included 30 questions with structured responses and 5 open ended questions. The questionnaire was administered electronically and was open for reply from May 17 to June 12 in 2006. The following sections provide a descriptive and graphic summary of the responses.

Characteristics of the Respondents and their Projects

Figure 1 shows the projects or agencies in which the individuals who responded to the survey are currently working. The projects or agencies from which the greatest number of responses was obtained were the SAT (Federal Tax Administration) with 66 respondents and the SISI (Access to Public Information Office) with 60 respondents. The distribution reflects the projects that have the largest number of participants, in accordance with the distribution in the database of the original 1177 persons that were invited to participate in the study. Some projects have a low response rate due to problems accessing the survey website through their agency's Internet connection. It is important to clarify that the respondents associated with the SISI are not only personnel ascribed to the IFAI (Federal Institute for Access to Public Information), but are also individuals working in liaison units at other agencies of the
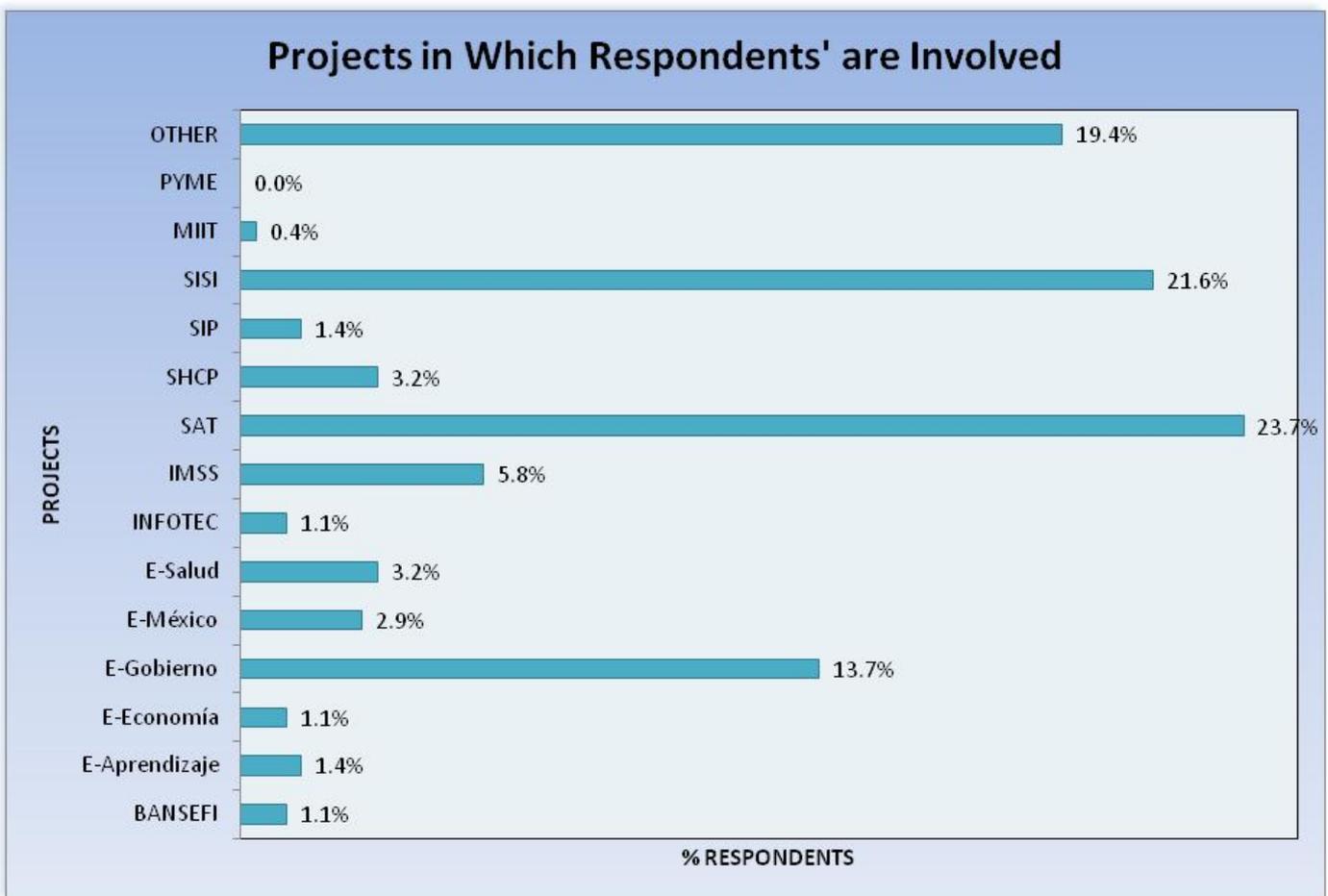
Mexican federal government.

Figure 1. Projects in which questionnaire respondents are employed (278 total responses).

As shown in Figure 2, the governmental entities that on average involve the most agencies (or organizations) are E-Health (230) followed by E-Mexico (116) and the SISI (83); while agencies that do

not involve more than 3 areas or institutions in their projects include the IMSS, INFOTEC, BANSEFI, E-Economy, and E-Learning. This number may be used as an indicator of the complexity of each of the projects considered in the study. The questionnaire also directly asked participants to rate the complexity of their projects and the average grade was 8.01 on a scale of 1 to 10. The most common grade was 8.0, with 30% of all respondents assigning this level of complexity to their projects. Forty six percent (46%) of the respondents assigned a grade of 9 or 10 and 14% assigned a grade of 6 or less.
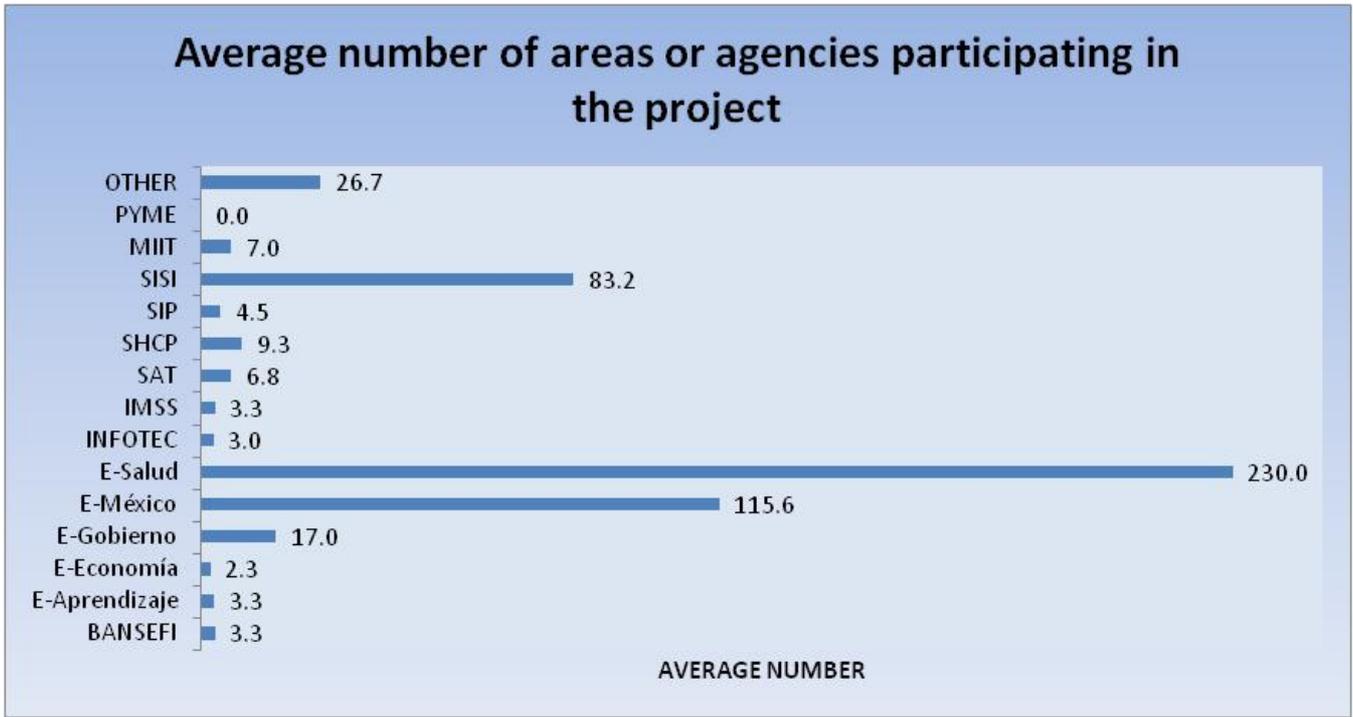
Figure 2. Average number of areas or agencies participating in the project (278 total responses).

Table 1. Average number of hours per week that each participant dedicates to the project, listed by project.

	AVERAGE	STANDARD DEVIATION	n
BANSEFI	24	20	3
E-LEARNING	29	17	4
E-ECONOMY	17	12	3
E-GOVERNMENT	17	15	35
E-MEXICO	47	21	7
E-HEALTH	29	25	7
INFOTEC	27	12	3
IMSS	37	15	16
SAT	30	17	62
SHCP	27	17	9
SIP	34	16	4
SISI	12	14	53
MIIT	40	-	1
PYME	-	-	0
OTHER	23	18	48

Regarding the number of hours per week dedicated to the project, E-Mexico had an average of 47 hours per person per week and MIIT had an average of 40 hours (Table 1). In contrast, some agencies and projects had a relatively low average number of hours per week such as the SISI, E-Economy, or E-Government. These averages may be considered as an indicator of the number of individuals that are working full-time on the project.
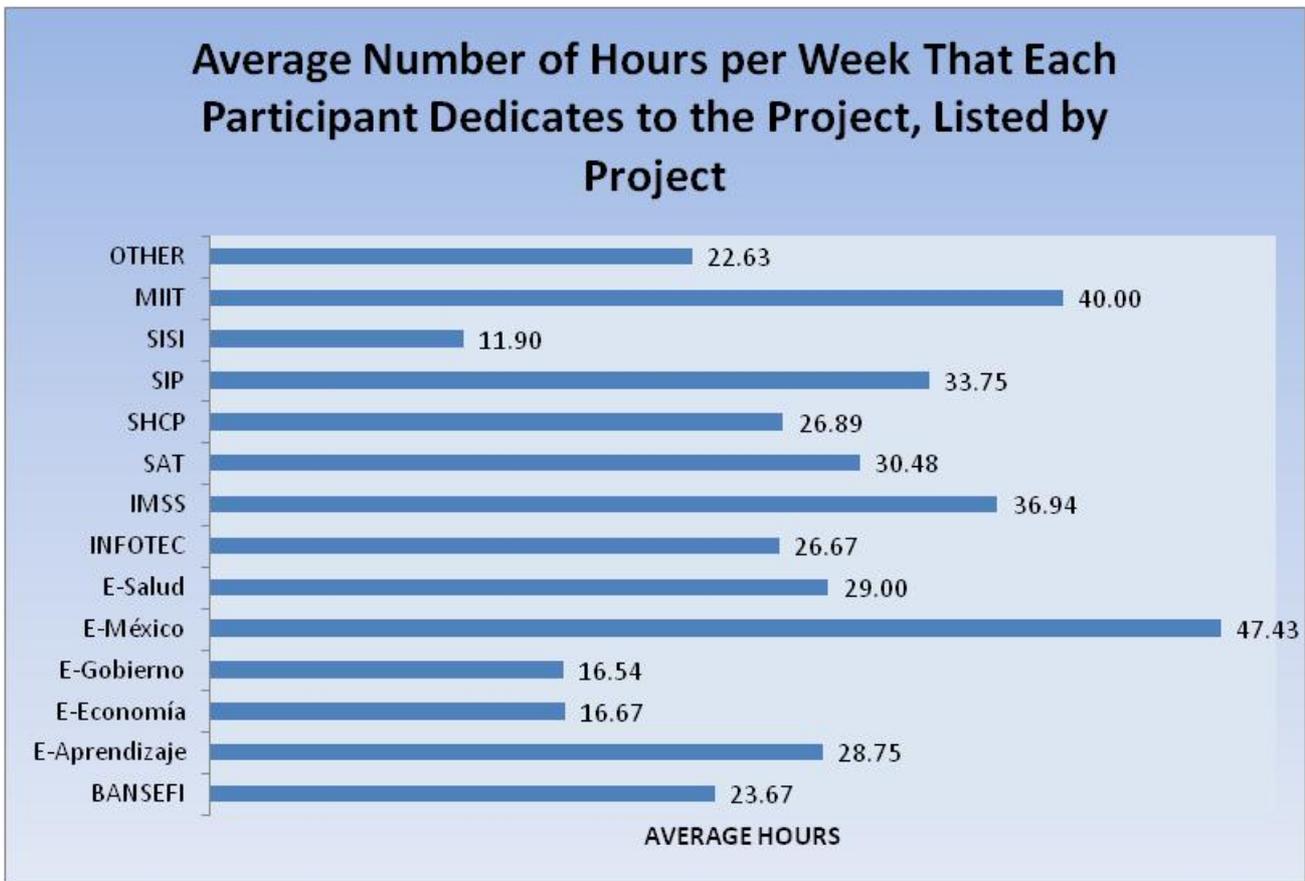

Figure 3. Average number of hours per week that each participant dedicates to the project, listed by project (278 total responses).

Participants in the projects included in this study have considerable experience in the field of IT. In fact, 55% of the respondents reported having education or experience in this area. Participants also had training in the areas of policy and program development. Thirty one percent (31%) of the participants reported having education or experience in the area of policy development and 24% in the area of program development. These percentages show that not only do individuals involved in the projects have experience and expertise in IT, but they also understand the procedures and problems of the public sector (see Figure 4). About one fourth of the project participants have also experience in other fields or

areas of government. Some of the areas most frequently mentioned are accounting, audits and control, public administration, law, and project management.
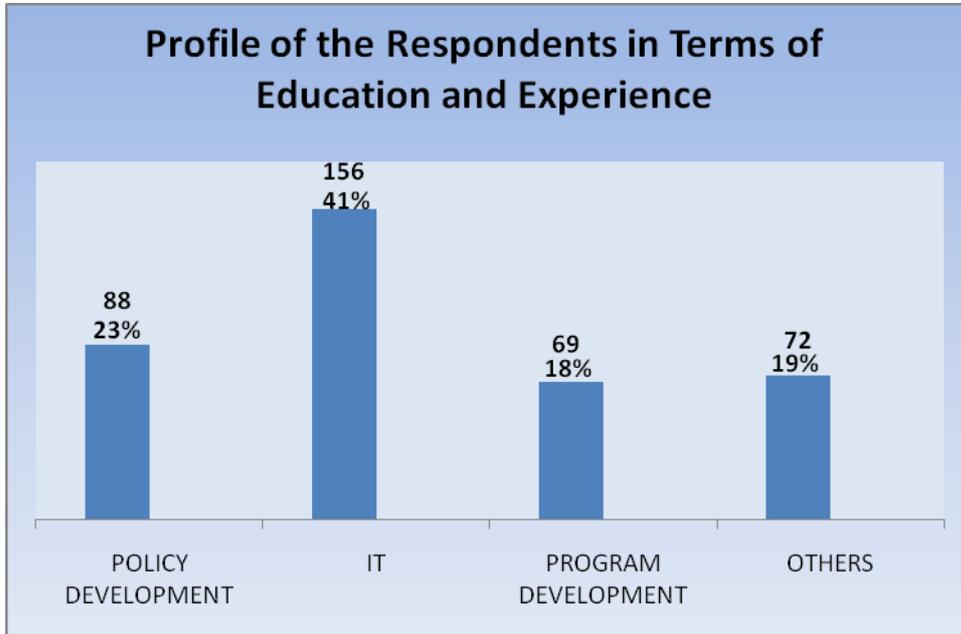

Figure 4. Profile of the respondents in terms of education and experience (385 total responses)

In terms of working experience at the federal government that participants have, the distribution is skewed, with the majority reporting ten years or less of government work experience (Figure 5).

Figure 6 shows that although the distribution of the general work experience of the participants is also skewed, in this case the majority have between 10 and 20 years of work experience. Twenty four percent (24%) of respondents have between 10 and 15 years of general work experience and 21% have between 15 and 20 years. About 12% have more than 30 years of general work experience. The average general work experience is 19 years and the average government work experience is 11 years.
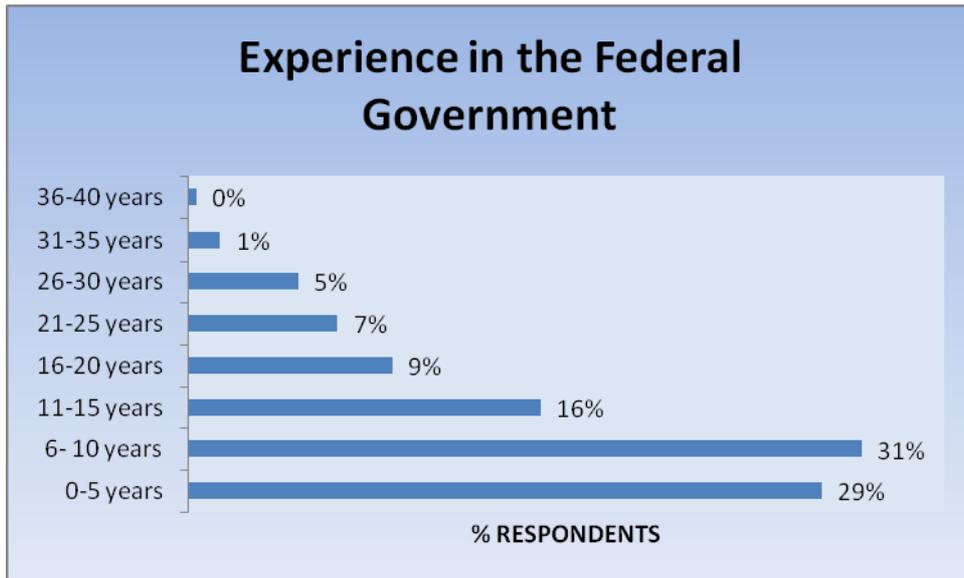
Figure 5. Experience in the Federal Government (276 total responses)
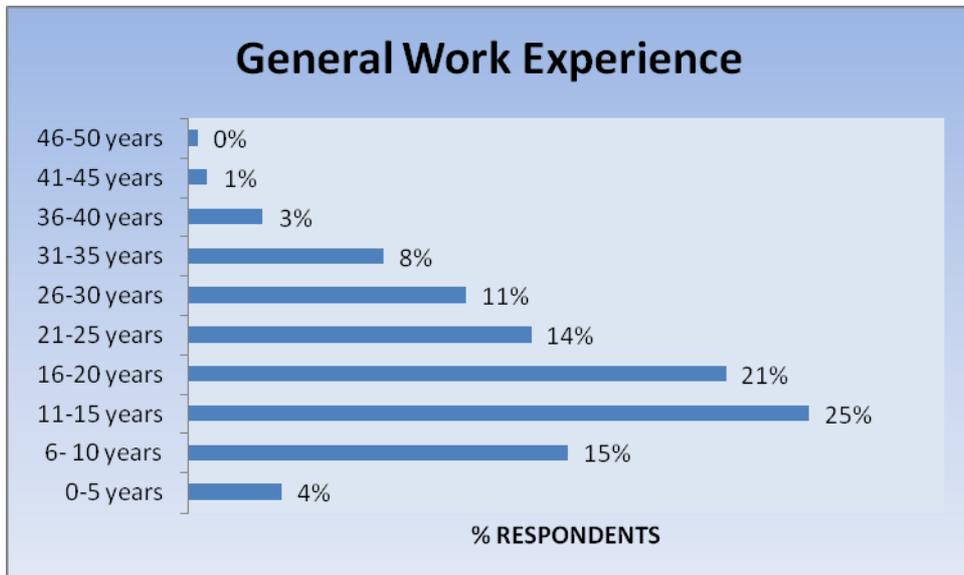

Figure 6. General work experience (274 total responses)
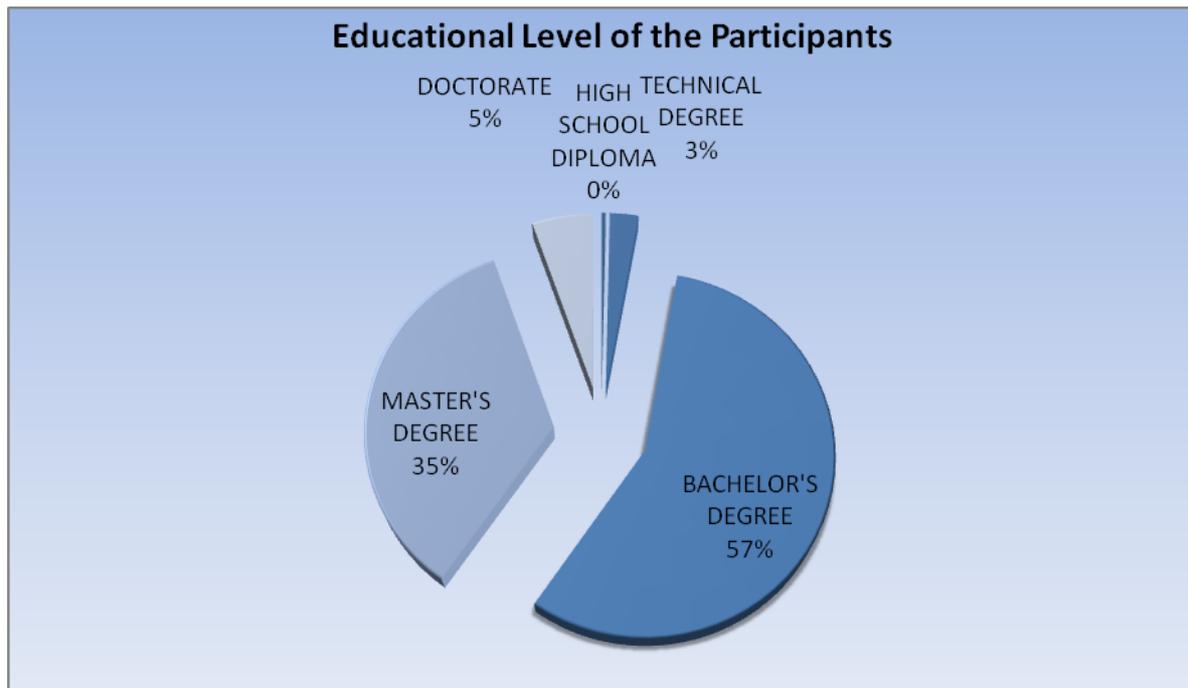
Figure 7. Educational level of the participants (278 total responses)

Figure 7 describes the educational level of participants in the projects considered in this research. More than half of the respondents have at least a bachelor's degree (57%), while 35% have a master's degree and 5% hold a doctoral degree.

Definition of Goals, Measurements, and Project Success

Figure 8 presents respondents' perceptions about three aspects considered important to project success: clarity in defining goals, clarity in defining performance measurements, and the feasibility of achieving the project goals. The majority of participants reported that both the project goals and its performance measurements were clearly defined and reachable. In fact, 88% of the respondents agreed or totally agreed that the goals were clearly defined and about 76% felt that performance measurements were clearly defined. In addition, more than 80% of the respondents thought that achieving the project goals was very feasible. In contrast, about 10% of the respondents felt there was no clarity in the definition of the project goals and performance measurements and a similar percentage felt that achieving the project goals was not feasible.
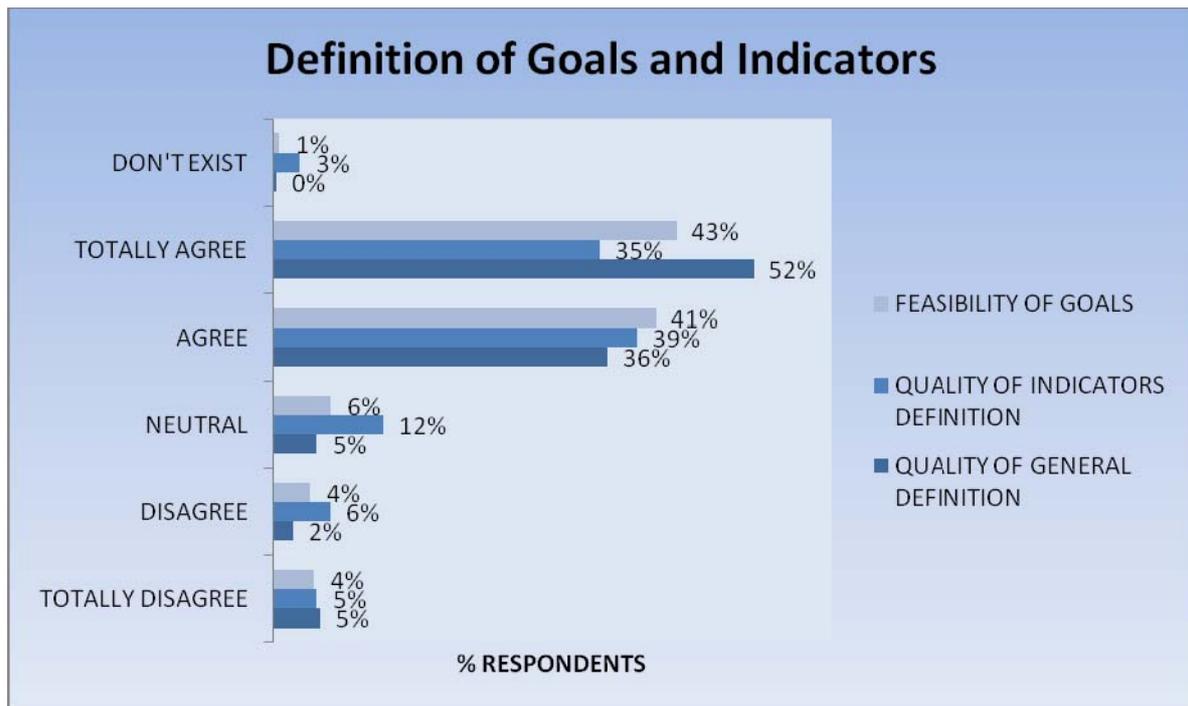
Figure 8. Goals and indicators in projects (the total number of responses is shown on the graphic between parentheses).

The projects included in the study considered a diversity of success indicators or measurements. The graphic in Figure 9 shows the principal indicators of success reported by respondents. The most important measures of success, among the projects and agencies that responded to the questionnaire, are the creation of a more transparent government, improving the quality of services to clients, and increasing confidence in government. The next three important indicators are reductions in cost, improved response time, and increased agency productivity. It is interesting to note that the measure of success used least frequently is the adoption of systems by potential users. Achieving target dates as a measure of success fell in the midlevel of importance.

Additionally, this question provided the opportunity for respondents to comment freely concerning the measurements or criteria for success used to evaluate the progress of their projects. Listed below are some of the procedures mentioned most often in this section of the questionnaire.

- Some projects used as a criterion the increase in the number of agencies that adopted the system (diffusion of the technology).

- One variation of the above indicator concentrates on the transfer of knowledge and technology, that is to say, making it easier for other agencies or organizations to incorporate the technological platform used by the project into their own operations.

- Other respondents considered indicators that reflect the level of usage. That is, how many users connect to, or how many requests are handled by, the system or website. Indicators like this complement other measures of effectiveness such as waiting time for system response.

- Some agencies included both the level of client satisfaction and the increase in demand for use of IT in e-government services as indicators of success.

- The success of some projects was measured as a function of the support they received from the states, measuring the number of state administrations that adopted the systems.

- In some cases, indicators that measure the progress Mexico has made towards providing society with access to information and services were also used. Some examples are: the number of Internet users, the number of fixed and mobile telephone lines, etc.

- Some comments pointed to the use of flow charts that helped in tracking the agency's progress towards meeting goals in terms of time and content.
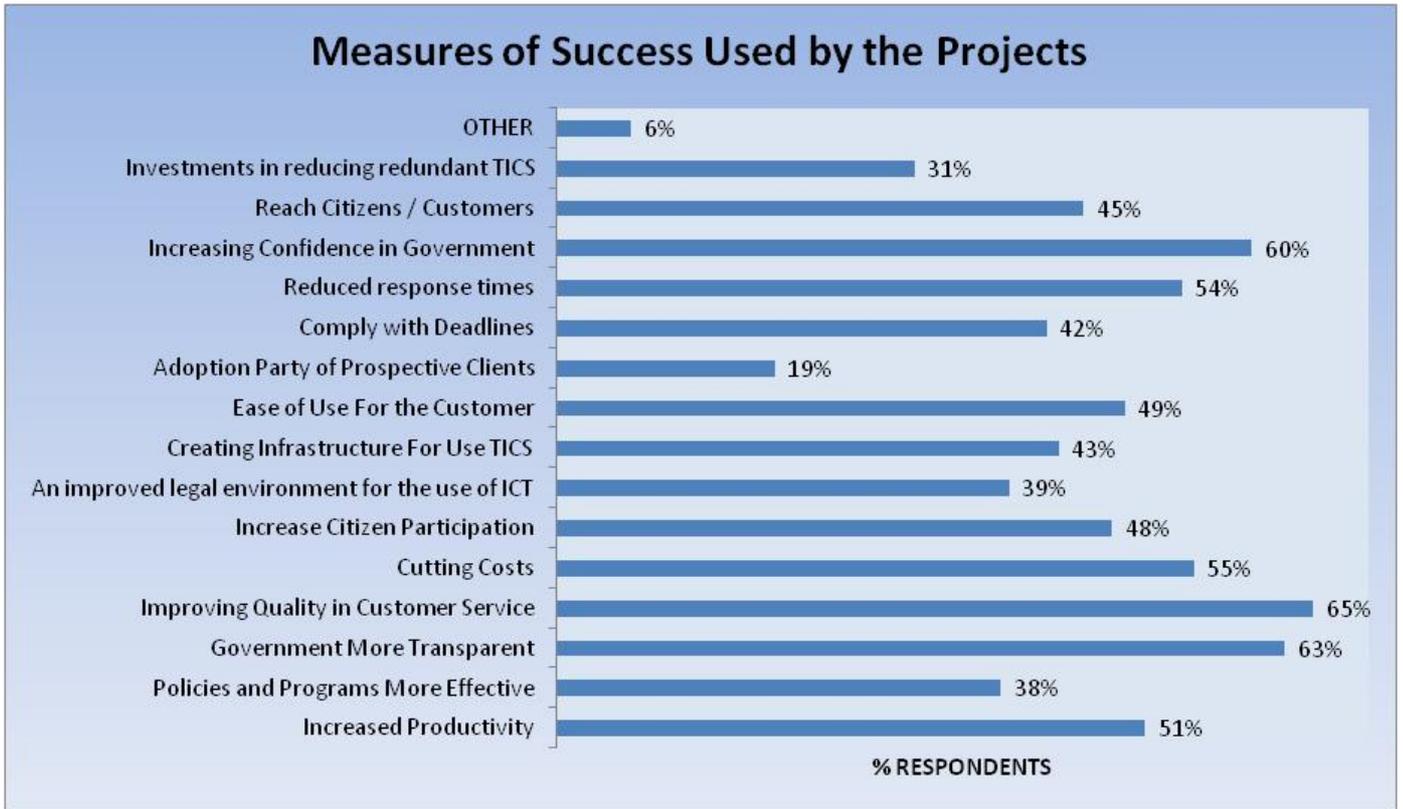
Figure 9. Measures of success used by the projects (282 total responses)

Regarding the perceived success of the inter-organizational projects included in the study, the general impression of the participants was very positive as shown in Figure 10. Practically all of the participating projects fall in the middle of the distribution having been assigned middle to high ratings of success. Projects were most frequently given a score of 9 and the average was 8.3.
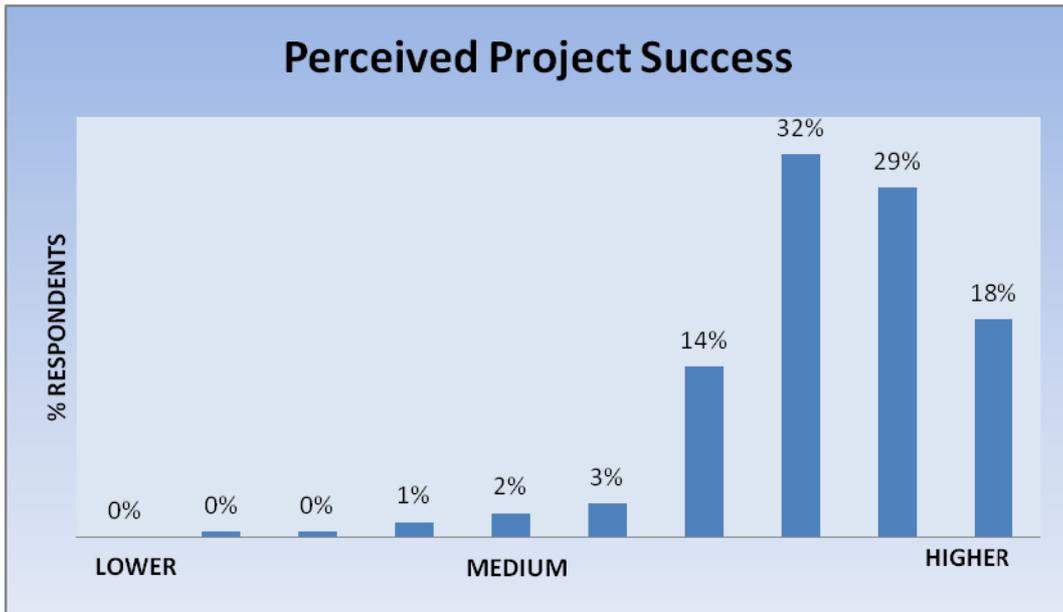
Figure 10. Perceived project success (247 total responses)

Complementing the responses shown in Figure 10, the questionnaire contained questions that evaluated distinct measures of success (see Table 2). All the participants' responses presented the same distribution as the question that explored the general perception of success. The averages and the standard deviations for each of the evaluated measures of project success are presented in Table 2. As mentioned previously, all of the projects surveyed are seen as successful in terms of these measures. The measures that yielded the highest scores were offering higher quality service, creating a more transparent government, and creating the necessary infrastructure to use ICTs. The aspects that require more work include promoting citizen participation, reducing costs, and increasing the productivity of government agencies.

It is interesting that success in creating the necessary infrastructure is ranked higher than success in cost reduction or increasing productivity, despite being a moderately important measure of success in relationship to its level of utilization by the projects or agencies that responded to the questionnaire. Cost reduction and increased productivity, while not the most important measures of success, are certainly located in the second tier of importance.

Table 2. Measures of success for e-government projects

Measure of success	n	Media	Standard deviation
General perception	254	8.31	1.34
Offer higher quality service	248	8.75	1.40
Create a more transparent government	248	8.65	1.64
Create the necessary infrastructure to utilize communication and information technologies	246	8.57	1.72
Create a legal and regulatory environment that promotes the use of communication and information technologies in government	245	8.22	1.91
Promote more effective government policies and programs	247	8.19	1.72
Increase agency productivity	245	8.17	1.82
Reduce agency costs	246	7.85	2.13
Promote citizen participation	246	7.83	2.15

With the national Good Government Agenda, one of the public sector priorities is providing high quality services to citizens. Also related to this agenda is the theme of transparency, mainly in relation to services and access to public information to which citizens did not have access in previous years. The third most successful category, creation of infrastructure, reflects the focus of efforts in recent years to update the existing infrastructure in government agencies and departments.
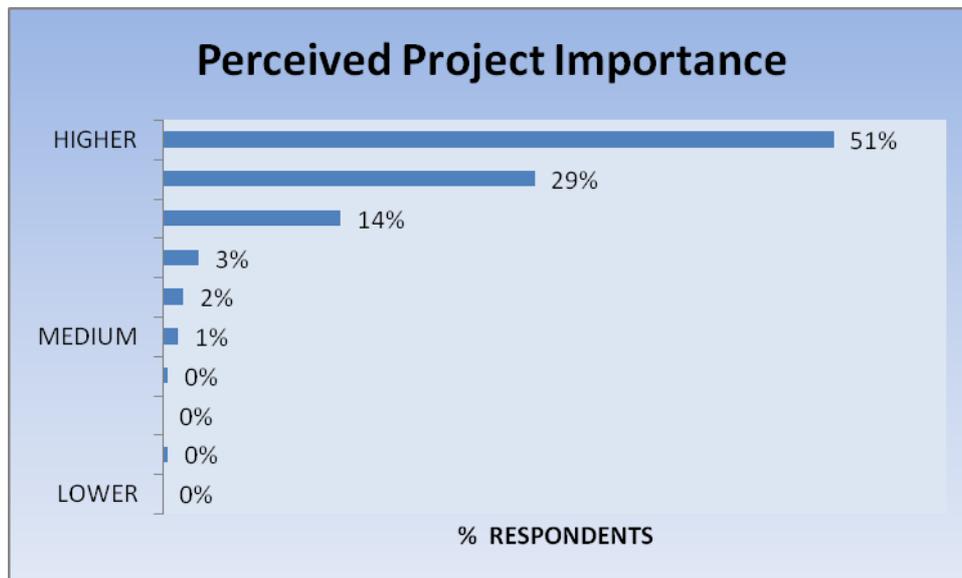

Figure 11. Project importance (249 total responses)

As shown in Figure 11, the majority of project participants consider the work they are doing in their project to be important. The majority of participants feel that the current administration has had a major impact on raising the importance of the projects. Many of the study participants are aware that the most important project results will not be seen in the short term but will, over time, yield more and better communication between society and government.
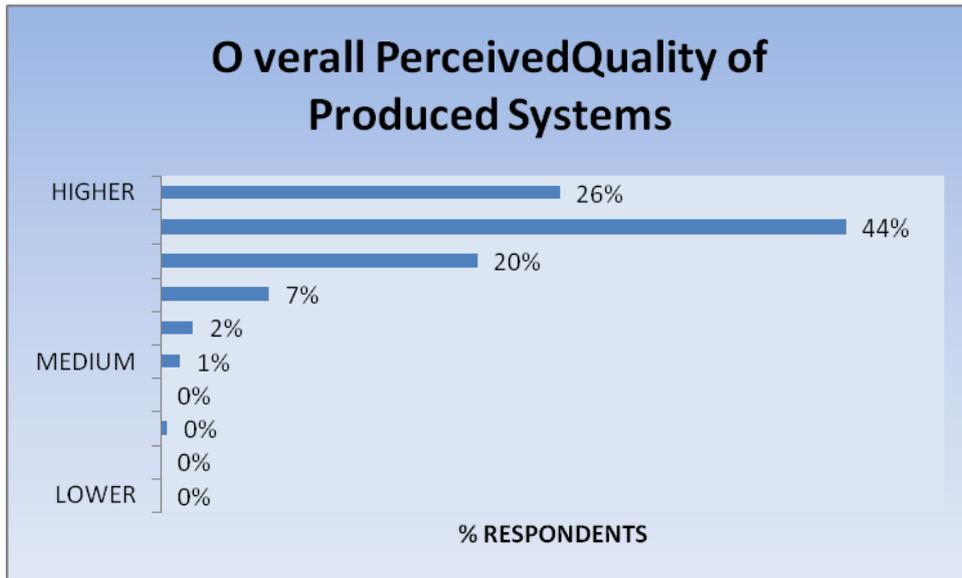
Figure 12. Overall Perceived Quality of produced systems (247 total responses)

Quality of the systems

As shown in Figure 12, the participants perceived the information systems developed or used in the projects to be of high quality. Seventy percent (70%) of respondents gave a grade of 9 or 10 to the general quality of the systems and the average was 8.78 in a scale from 1 to 10. The majority of the respondents are also satisfied with the results of their projects.

In addition to the evaluation of the general quality of their projects, respondents were asked their perception of the quality of the information systems in terms of specific dimensions such as ease to use, usefulness, privacy, and security. The average grades for each of these dimensions fell in the range of 8.3 to 8.97 on a scale of 1 to 10 (see Table 3). The three highest scoring quality dimensions were the utility, security and privacy of the system. The lower scoring dimensions were personalization, ease of use, and the quantity of functions or operations offered by the system. Practically all the quality dimensions had a response distribution very similar to that shown in Figure 12. The quality of information provided by the system fell in the middle of the different dimensions due to its average score. However, the quality of information provided by each agency's system plays a very important role in the development of these projects or technological programs since it facilitates the implementation of improvements in efficiencies, producing greater benefits with reliable information.

Table 3. Quality dimensions for e-government projects

Quality dimension	n	Average	Standard deviation
General impression	247	8.78	1.10
Utility	249	8.97	1.23
Security	244	8.85	1.27
Privacy	243	8.78	1.41
Information provided by the system	248	8.66	1.33
System operations or functions	246	8.53	1.24
Ease of use	249	8.44	1.31
Personalization	247	8.30	1.59

The responses to the question represented in Figure 13 reflect the perceived importance to the respondent's professional career attributable to developing and executing one of the projects included in this study. As can be seen in the figure, the majority of the respondents are in agreement that their involvement has been very beneficial to their professional careers.

Organizational and Institutional Factors

Eighty two percent (82%) of all the respondents are responsible for a specific assignment or area of their project (Figure 14), but only 64% of these people reported that their supervisor recognized and very much appreciated their work efforts. An additional 26% considered that their work was recognized but to a lesser extent and 10% felt that their work in the project was not recognized or appreciated to the extent they desired by their superiors.
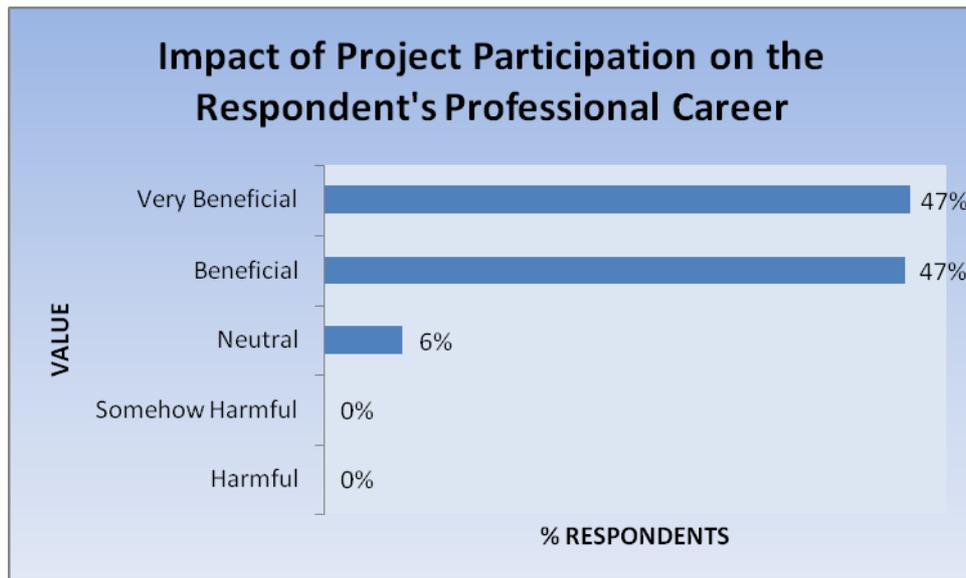
Figure 13. Impact of project participation on the respondent's professional career (146 total responses)
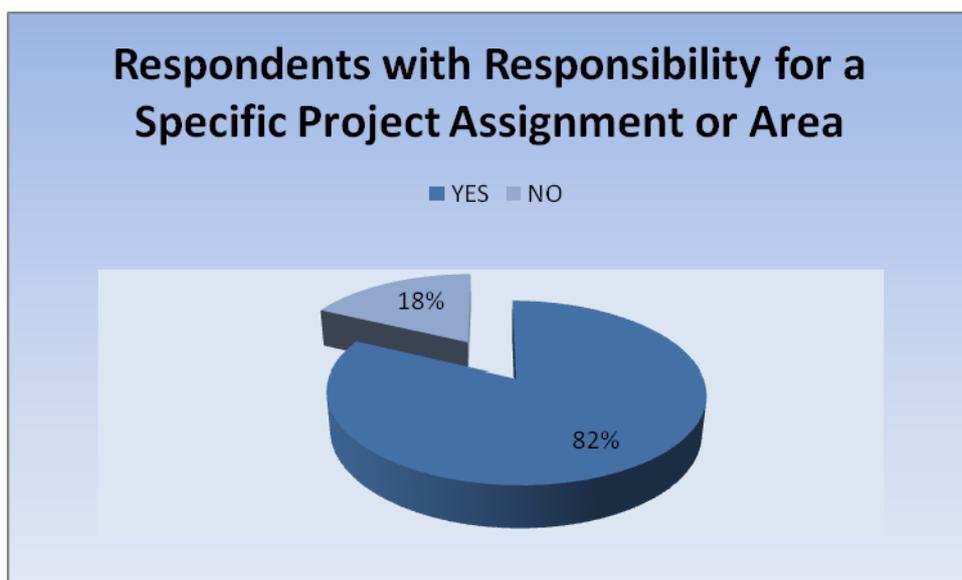

Figure 14. Respondents with responsibility for a specific project assignment or area (241 total responses)

Figures 15 and 16 present the respondents' perceptions of the adequacy of financial and human resources dedicated to their projects. Both graphics represent the perception of the respondents concerning the adequacy of available resources to bring the project to a successful conclusion. Although slightly more than half of the respondents still believe that their project has the necessary human resources, only 12% of them are totally convinced of this affirmation and 43% are in agreement but to a lesser degree. 26% disagree with the affirmation and 18% maintained a neutral position (Figure 15). Perceptions related to the adequacy of financial resources maintained a similar distribution with slightly fewer respondents in disagreement (Figure 16).
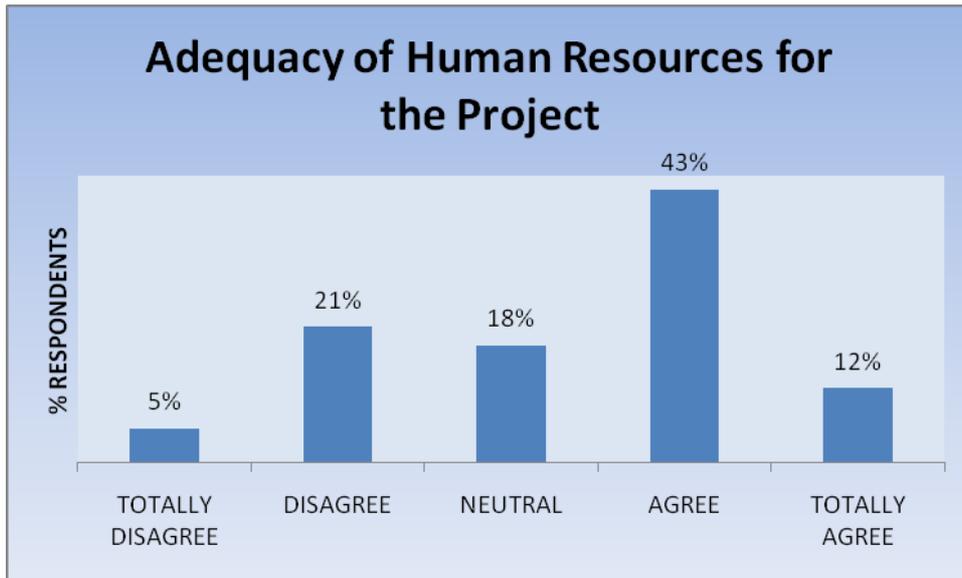
Figure 15. Adequacy of human resources for the project (238 total responses)
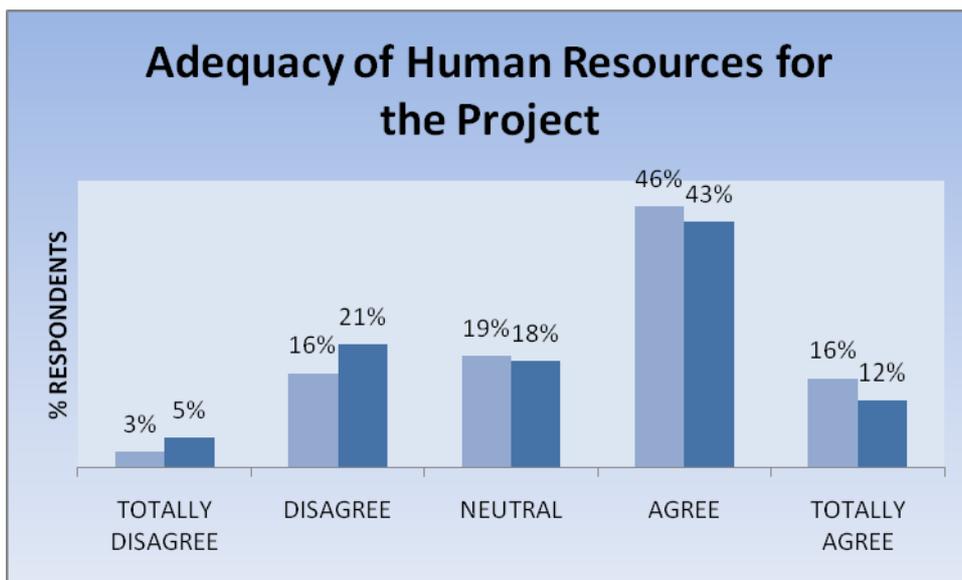

Figure 16. Adequacy of financial resources for the project (237 total responses)

Figures 17, 18 and 19 present the respondents' perceptions concerning three related aspects. The first of aspect is the perceived difficulty of working in a project that requires coordination and collaboration with different agencies. The second seeks to describe respondents' evaluation of the potential benefits that might be attained through these types of initiatives. Finally, the third seeks to describe the respondents' perceptions concerning the diffusion of such inter-departmental or inter-governmental projects in the coming years.

In regard to the difficulty of projects that involve different agencies, the opinions of the respondents were distributed in triangular form (Figure 17). Slightly less than half the respondents (44%) took a neutral position, which suggests that these types of projects present a level of difficulty similar to other projects in which the respondents have participated. The view of the remaining half of the respondents was divided. About one quarter of the respondents felt these projects were more difficult while the other quarter saw them as less difficult.
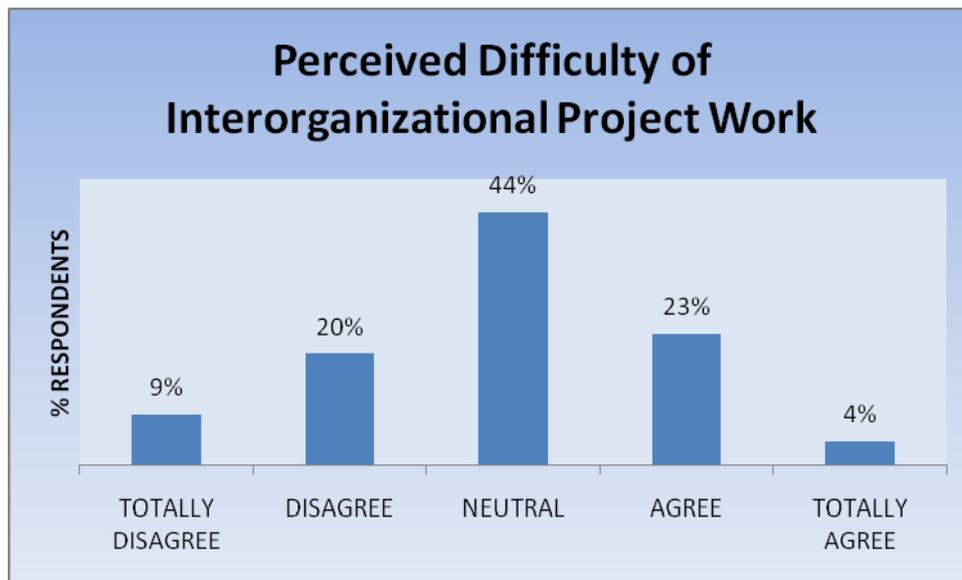
Figure 17. Perceives Difficulty of Interorganizational Project Work (235 total responses)

In the qualitative part of this question, the respondents were in agreement that the implementation of the technology in the separate agencies has improved both the internal and external communication. In fact, the external communication is considered a key factor in enabling improvements in the execution of those projects that involve two or more agencies. The respondents are in agreement that the impact of technological projects involving multiple agencies is greater than those projects that involve only a single agency.

Nonetheless, the respondents also commented on the existence of certain factors, such as inequality in the standards of each agency, policies, resistance to change, the transparency of information access for citizens, bureaucracy, and private interests, among others, that make collaboration difficult between agencies. Under these circumstances, teamwork is much more difficult and it takes longer to complete the projects than was planned. Similarly, the project's objectives are not fully accomplished.

Although the respondents' opinions concerning project difficulty did not line up well, they showed greater accord in agreeing that standardization and integration between agencies will be beneficial for

governmental performance as shown in Figure 18. About one third (32%) have reservations about the hoped for benefits of the projects but the remainder feel that government performance will be improved through the use of the systems they are working on. Finally, almost three-fourths of the respondents (71%) feel that the culture of the government is changing and moving towards the promotion of these types of projects. Only 20% are completely in agreement with this change in governmental culture, while 21% take no position and 7% believe that the cultural change is still to come (see Figure 19).
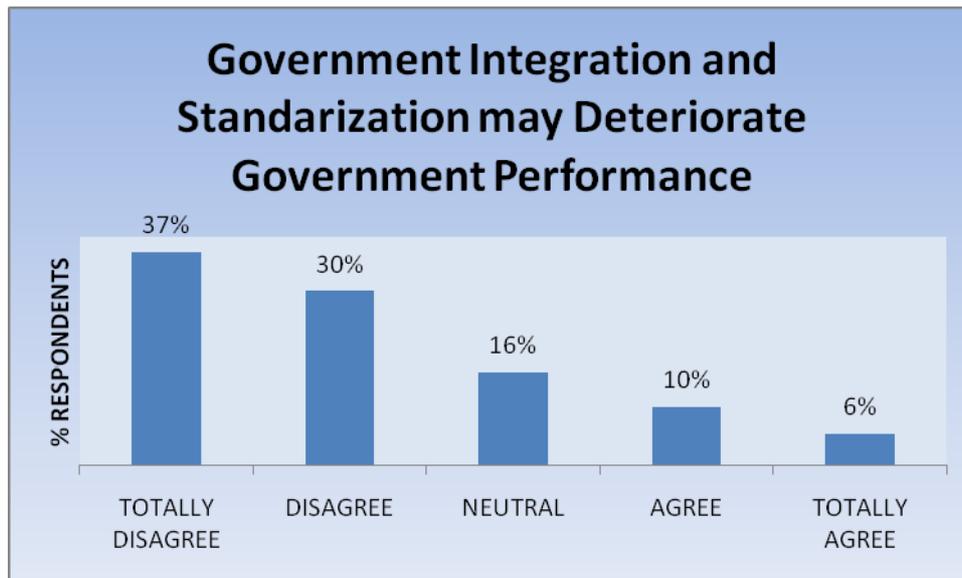
Figure 18. Government Integration and Standarization may Deteriorate Government Performance(233 total responses)

Figures 20 and 21 show the perceptions of respondents concerning the adequacy of current legislation to support IT initiatives that involve sharing information between multiple agencies. Approximately half of the respondents show a certain level of agreement concerning the adequacy of current legislation to support the development of conjoint projects (Figure 20). One third of the respondents took a neutral position while 20% felt that the legal framework does not support the development of these types of initiatives.
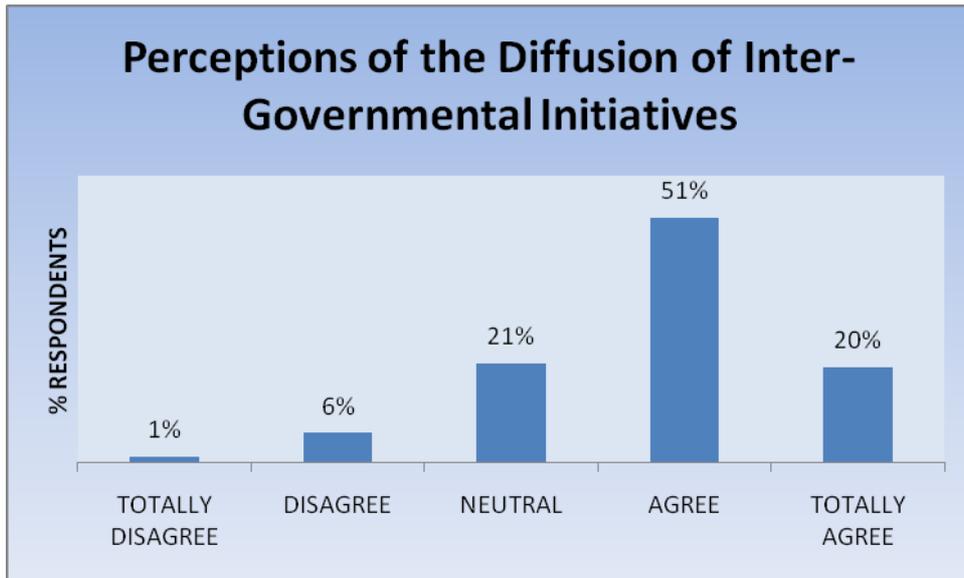
Figure 19. Perceptions of the diffusion of inter-governmental initiatives (238 total responses)
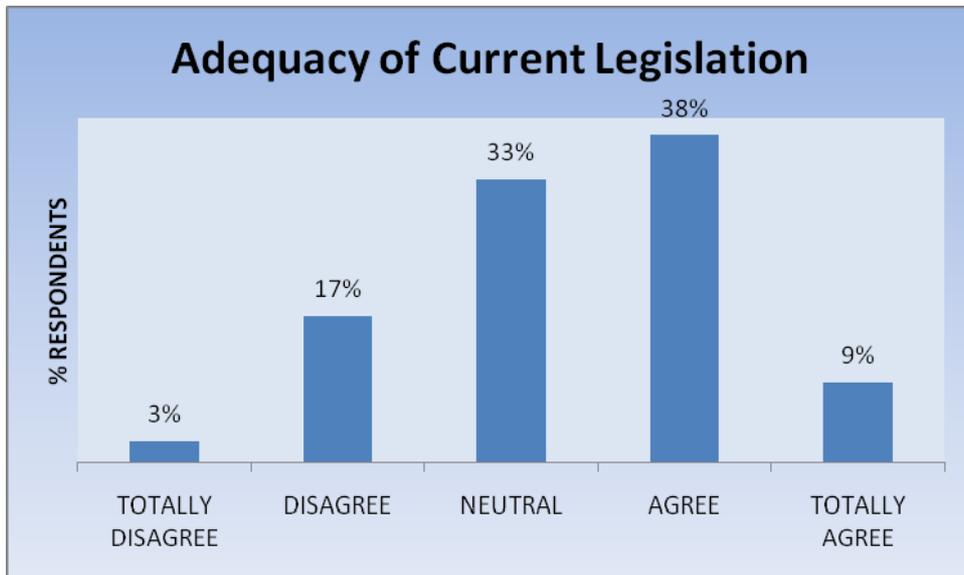

Figure 20. Adequacy of current legislation (234 total responses)

In considering the level of Congressional support given to initiatives that involve more than one governmental department or agency, the respondents were more divided in their opinions (see Figure 21). Slightly less than half of the respondents (42%) took a neutral position. The remainder of the respondents were divided between those that felt Congress supports such initiatives and those that believe Congressional support is lacking. The distribution is skewed towards the belief that Congress supports ICT initiatives involving various agencies. Slightly more than one third of respondents (35%) believe that Congress supports these initiatives, whereas slightly less than one quarter (23%) believe that additional Congressional support is needed.
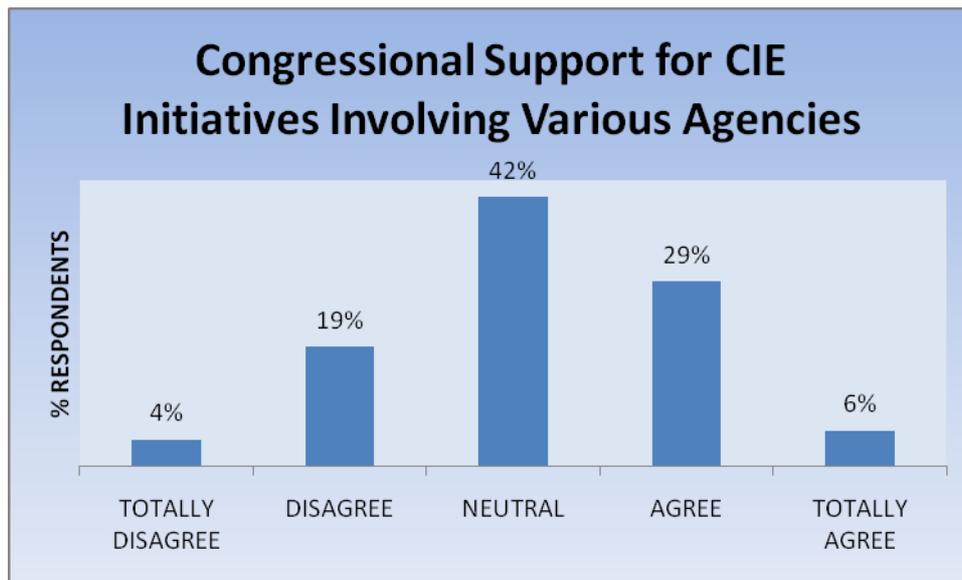
Figure 21. Congressional support for CIE initiatives involving various agencies (234 total responses)

Inter-departmental or inter-governmental projects, like those included in this investigation, should have a high degree of interaction between the participants, not only because they require communication between agencies or departments, but also because of the complexity of the projects. Figure 22 shows a summary of the levels of interaction between working groups of the different areas that participate in the development and execution of the projects. As can be seen in the graphic, there are different levels of interaction among the members. Face to face meetings are principally held each month, although there is frequent interaction between the project participants daily or several times a week via electronic means. The availability of electronic communication has had a major impact on the projects, since it is one of the most commonly used means of interaction among project members. The majority of these weekly or daily interactions occur between only some members of the team, rather than with all the members.

Another interesting characteristic of the graphic is that the majority of projects are developed with a high degree of independence from supervisory organs. Slightly less than half the projects (44%) perform their work with complete independence from supervisory organs and an additional 36% have regular meetings with supervisory organs only once a month. Only the remaining 20% of projects have more frequent periodic meetings with oversight organizations such as the Ministry of Finance.
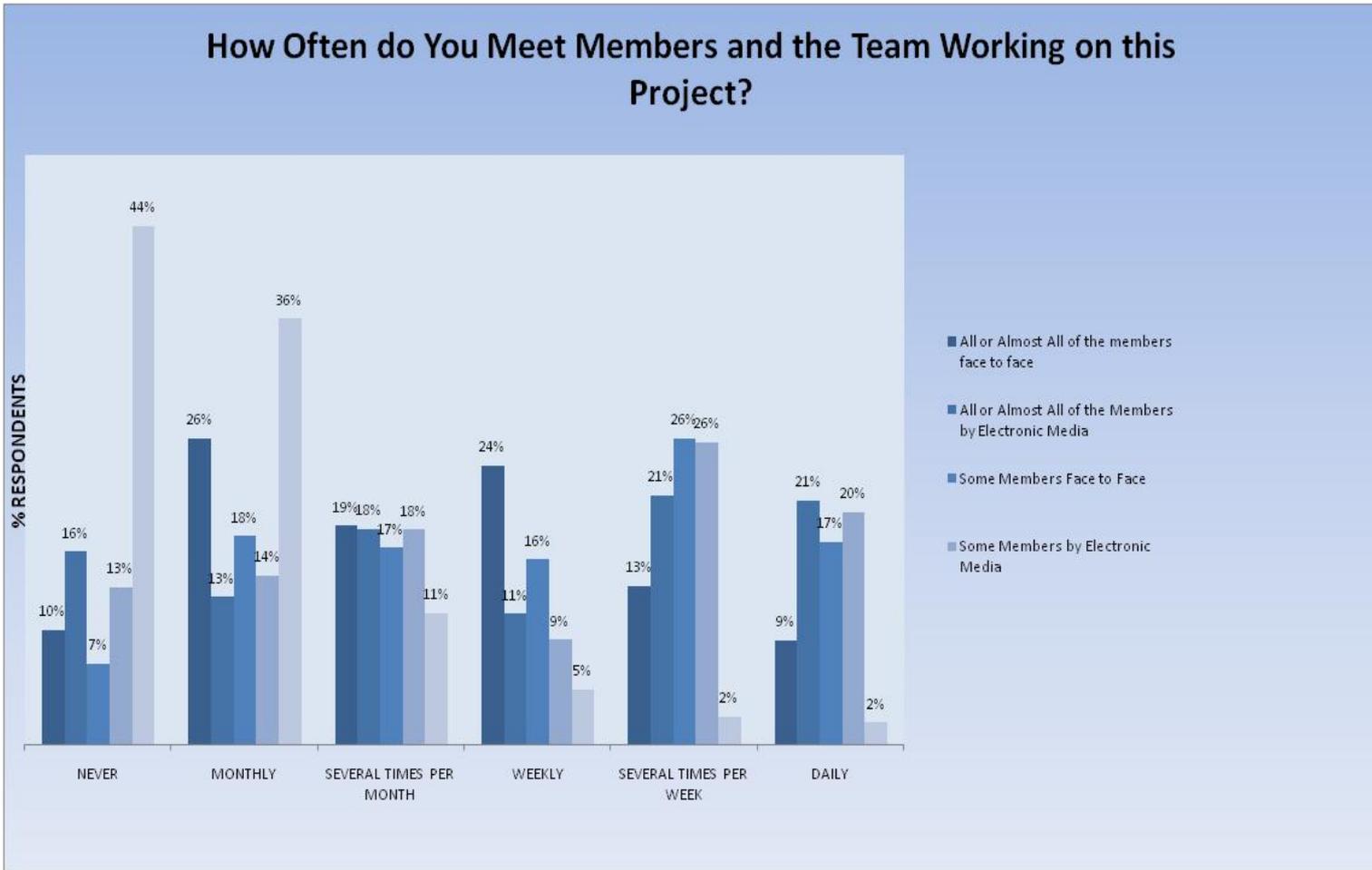
Figure 22. Interactions between project team members

Finally, the respondents acknowledged that their own institutions recognized the importance of applying information technologies in general and, in particular, were supportive of their specific project (Figure 23). The average score for perceived approval of the use ICTs was 9.01 and the average score for perceived support of the respondent's specific project was 8.83, both on a scale of 1 to 10 with 10 representing the highest level of support.
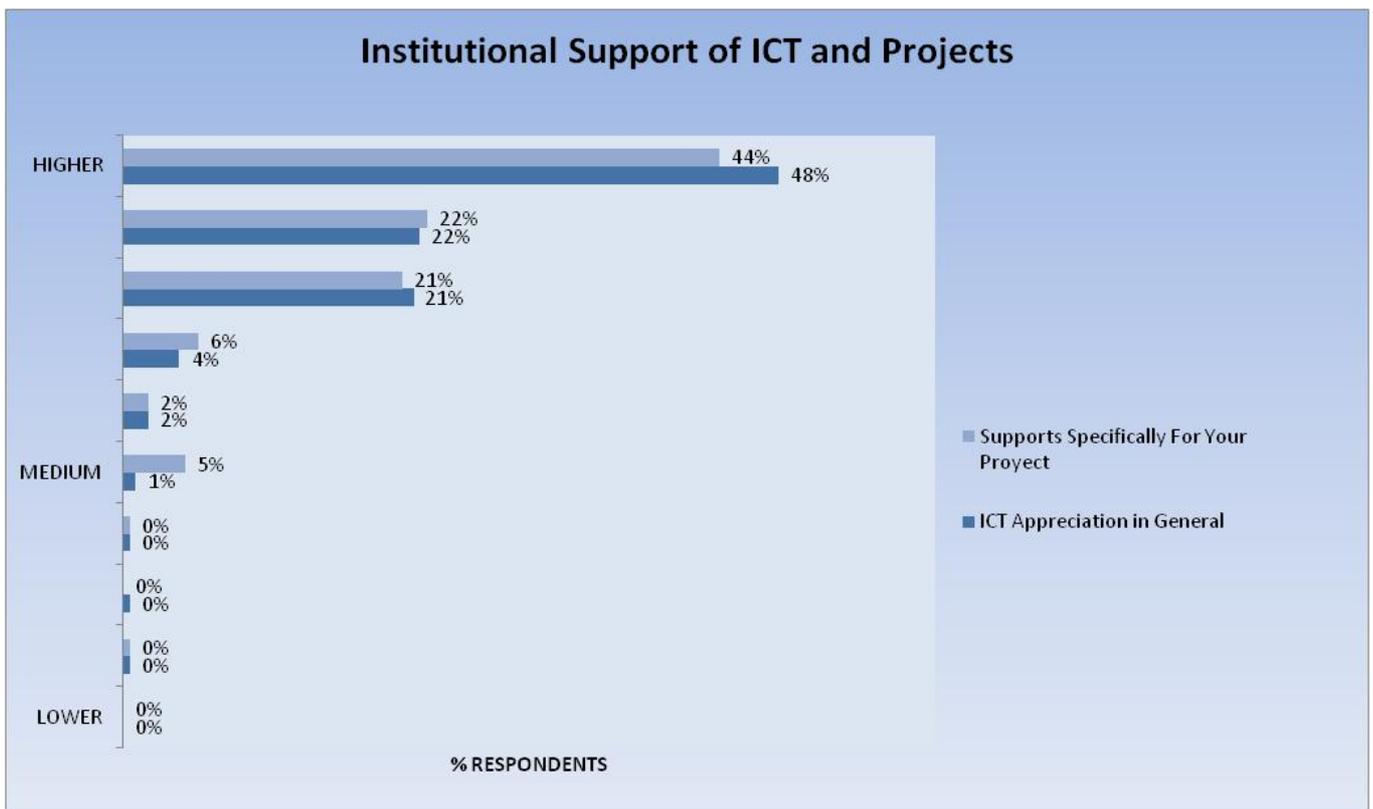
Figure 23. Institutional support of ICT and specific projects

Final Comments

The majority of the respondents felt that the administration of President Fox has had an important positive impact on the development of ICT projects due to his government's favorable posture of betting on technology as a facilitator of governmental reform. Although many respondents felt that the most important results from digital government will not be visible in the short term, they believe that the advances made in recent years are very important – increasing the transparency, the efficiency and improving the quality of the information requested by citizens. Furthermore, during recent years, both a quantitative and a qualitative increase have been noted in the use of governmental information, thus promoting better communication between the government and society.

The respondents suggested the following "secrets to success" for the development of inter-governmental projects:

- From the very beginning, project goals, objectives and benchmarks should be clearly and precisely defined. Within the objectives, both a common objective shared by all the different areas and agencies involved in the project, as well as particular objectives reflecting the anticipated benefits for each individual area or agency should be specified.

- Progress towards meeting the project's goals should be evaluated periodically using the benchmarks proposed above. Continuous monitoring of the project's development will contribute to early identification of problems and to diminishing risks.

- Project development should be divided into phases for the purpose of monitoring and evaluating progress and at the same time to allow supervision of the work being done by the different areas.

- Working groups should be formed for the different tasks required by the project.

- Efficient communication between each one of the team members and all areas involved in the project should be encouraged.

- Leaders should be appointed for each one of the areas involved in the project and these leaders should be given not only the responsibility, but also the authority to make decisions regarding their project.

- Resources to enable the satisfactory execution of the project throughout its life cycle (costs of operation, maintenance, etc.) should be taken into account from the very beginning.

Finally, it is important to mention that the interests of each agency, as well as the way in which mutual benefits are negotiated, are important factors affecting the success of digital government projects that involve more than one agency. Also, it is important to point out that the development of ICT in digital government projects responds to specific problems. Therefore, benchmarks to measure the success of such projects should include observations concerning progress towards solving the initial problem.

Acknowledgments

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