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FINAL REPORT

PROJECT MODERNIZATION OF SYSTEM OF TAXATION (MOST) El Salvador

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PREFACE

This document presents the final report on the activities carried out by El Salvador's Modernization of the Tax System (MoST) Project. This project was conducted by the Policy Economics Group of KPMG Peat Marwick under a contract with the U.S. Agency for International Development (Contract No.519-0349-C-00-1217-00).

The carried out under this project, have resulted in a significant modernization of the Ministry of Finance. The work began in 1991 with the objective of assisting the government begin the process of reforming conceptually, methodologically, and organizationally the way tax administration is understood, managed and executed in El Salvador.

In order to undertake this process, a group of talented resident advisors was put together by KPMG, Dr. Daniel Wisecarver functioning as Project Director. The project benefited as well of Dr. Wisecarver's outstanding reputation and high credibility with the Salvadoran government. Dr. Fernando Ramos, of KPMG Peat Marwick, served as Project Manager and coordinated the work of the KPMG home office staff and the independent consultants.

Dr. Wisecarver was assisted by the following resident advisors: Mr. Luis López (Customs Administration), Mr.Jorge Zurita (Customs Computerization), Mr. Alonso Rodríguez (VAT Computerization); Mr. Kevin Kyriss (Information Technology), Mr. Manuel Villareal (tax administration), and Dr. Sergio Madrigal (microsimulation models). In addition to the work of the Resident Advisors, a number of other professionals contributed to the technical assistance in tax administration, customs administration and information technology. The work of the establishment of the Departamento de Informatica was led by Dr. Sergio Madrigal, assisted by KPMG Peat Marwick's home office staff.

Any technical assistance project of the scope and magnitude of the MoST Project is of course subject to changes in government personnel and project counterparts. In the case of the MoST Project, three major changes genuinely impacted the shape and development of the Project.

First, on February 28, 1992, Minister of Finance Rafael Alvarado and Vice Minister José Angel Quirós resigned their posts. They were replaced by Lic. Edwin Sagrera and Lic. Eduardo Montenegro, respectively, who remained in their posts until the end of the Cristiani government. This change brought with it a double impact on the Project. On the one hand, the Project's potential policy component practically disappeared, as no major economic or fiscal policy initiatives were undertaken from that date forward. On the other hand, the MoST Project's computerization component received a significant boost through the fact that Vice Minister Montenegro was an avid believer--and user--of the computerization platform, both hardware and software, that the Project recommended.

Second, on October 31, 1993, Lic. Miguel Angel Espinoza, then Director General of the Treasury (DGT) was named to the post of Director General of Internal Revenue (DGII). Among other implications, Mr. Espinoza's arrival brought a shift in emphasis and, at least during the extension of the Project, both tax administration and computerized applications already prepared began to assume the central role that had originally been envisioned for the MoST Project.

Finally, with the election of President Armando Calderón Sol in the first semester of 1994, new Ministry of Finance authorities assumed their functions on June 1, 1994. Lic. Ricardo Montenegro was named Minister, Lic. Juan Pablo Córdova Vice Minister. Although Minister Montenegro in fact appreciated the presence of the Project and relied heavily on the Project Director for advice during his six-month tenure, he did not acquaint himself with the details of the Project components, with the one exception being the vehicles system because of the apparent problems that emerged in the administration of the Ministry's vehicles registration and control section.

The report is organized into five chapters. Chapter I presents the actvitities in fiscal policy; Chapter II describes the analytical models and fiscal analysis activities; Chapter II presents the activities in tax administration; Chapter IV describes computerization activities; and Chapter V details the activities in customs.

In addition, we include three appendices with detailed information from the three major computer applications developed under the Project. Appendix A describes the Bank Control System; Appendix B presents the Income and Wealth Tax System; and Appendix C describes the Vehicles Control System. The information contained in these appendices is taken from the systems' manuals delivered to the Government of El Salvador and is presented in its original form (in Spanish).

CHAPTER I
FISCAL POLICY

The initial terms of reference and workplan for the MoST Project called for a good deal of policy analysis in the fiscal area. However, the project did not have the opportunity to participate in key policy decisions for several reasons. First, by the time the project started, on November 1991, significant tax policy initiatives had already been implemented, including the elimination of most tax exemptions, successive reforms of the income tax, mostly in the direction of broadening the tax base and unifying and lowering tax rates, successive reductions in import tariffs, the elimination of most export taxes and minor but significant reforms to the stamp tax, in preparation for the planned introduction of a Value-Added Tax (VAT) to replace the stamp tax.

Work on the VAT itself, however, was deliberately delayed, as Minister Alvarado felt the need for full-time technical assistance to establish that tax. Finally, under growing pressures from the IMF to establish the VAT, Minister Alvarado requested that the IMF provide him with a technical assistance project to prepare the VAT legislation and help to establish its administration within the DGII. The IMF project, which began in the second semester of 1991, had prepared a draft of the VAT law by the time that the MoST Project arrived in the Ministry of Finance.

Second, Minister Alvarado resigned on February 28, 1992, just under three months after the arrival of the first of the Project's Resident Advisors. Whereas Minister Alvarado had been the driving force behind tax and fiscal policy reforms during his tenure, Minister Sagrera assumed the role of Administering the Ministry of Finance. During the latter's tenure as Minister, virtually no significant policy initiatives were debated. (This was in keeping with economic policy in general over this same period, as the Cristiani administration concentrated virtually all of its efforts during this period to implementing the Peace Accords).

This is not to say that policy changes did not occur during Minister Sagrera's period as Minister of Finance. In fact, he was charged with marshalling the VAT law through the legislative process and subsequently implementing it. Also during his first months as Minister, the significant change to the income tax, achieving the almost full integration of the personal and business income taxes, was presented to and approved by the Legislative Assembly. Both pieces of legislation, however, had been prepared under Minister Alvarado.

In addition, at the end of 1992, the tax on coffee exports was eliminated and coffee producers were explicitly subjected to the income tax, thus completing the reform of the taxation of this sector, one of the Cristiani government's principal goals. Likewise, at the end of 1993 El Salvador's wealth tax was eliminated, with the government again fulfilling one of its campaign promises. Although the wealth tax had been targeted for analysis under the Project, its elimination was never a topic for analysis from the viewpoint of the government, the only doubt having been when to eliminate it. The Project was not asked to participate in any of the deliberations on the topic, with the exception of Minister Sagrera's request that the Project Director study the issue as to the most correct moment to eliminate the tax, in terms of achieving the "fairest" distribution of the

benefit. In particular, the question was whether it would be better to wait until the beginning of 1993 or do so immediately. The latter option was discarded, in light of the Legislative Assembly's decision to lower the VAT rate from 12 to 10%, thus making it even more difficult to forego any other sources of tax revenue. The wealth tax was in fact eliminated at the end of 1993.

Besides these changes, however, tax policy during the last 27 months of the Cristiani government was reduced to responding to IMF demands for patchwork revenue measures to plug gaps in the overall monetary program and to World Bank, AID and IDB conditions included in the latters' assistance programs.

Therefore, the lack of a summary of significant contributions to tax policy in this final report on the MoST Project is the result of the GOES's decisions and priorities, implicit and explicit, with respect to tax policy. The following section describes the reduced number of areas (and relatively reduced scope within each) in which the MoST Project did, to some extent, participate in the formulation of tax policies.

Income Tax

During one of his preliminary visits to El Salvador, at the end of October 1991, the Project Director was asked by Lic. Rogelio Tobar, then Director General of the DGII to comment on a new proposal for a draft law to reform the income tax. Dr. Wisecarver suggested a number of modifications, many of which were incorporated into the legislation that was eventually submitted to the Legislative Assembly and approved at the end of December.

Important reforms to the income tax introduced at that time included reducing the number of personal tax brackets to just three, with the highest marginal rate at 30 percent, increasing the level of exempt personal income from 18,000 to 22,000 colones (and up to 34,000 colones for taxpayers with anual incomes below 50,000 colones), establishing a single tax rate of 25 percent on business income, together with a minimum exempt level of business income of 75,000 colones. Perhaps the most significant change was to eliminate, essentially, the double taxation of capital income.

Two other pieces of legislation had been introduced at the same time. The first dealt with new procedures designed to streamline the appeals process and created a tax appeals court. The second, would have added serious sanctions to flagrant income tax violations, including the possibility of setting historical precedent by applying prison sentences. Although the Legislative Assembly was initially prepared to approve the entire package, at the last minute the official political party (ARENA) decided against approving the modifications to the penal code. This decision was a major disappointment for the Minister of Finance, even though the first two pieces of legislation were in fact approved.

However, the Assembly introduced a few of its own modifications to the income tax law which complicated both its comprehension and application. In addition, a series of comments and requests for "clarification" were received. Although the vast majority of such comments reflected a

lack of knowledge of the law's provisions or were simply wrong, it was decided to prepare legislation to modify a few key elements and to clarify a few others.

The main issue was the following. The Ministry's initial proposal would have eliminated the double taxation of capital income by giving a credit to persons who received dividends or profits based on the income tax paid at the firm level. The Legislative Assembly left the reference to this credit in the law but added elsewhere the exemption of dividend income for personal income tax purposes. The presence of both left the law ambiguous on this score, and the Ministry of Finance position was to continue with the credit concept as a method for better cross control for audit purposes.

Dr. Wisecarver was asked to take part in this process and he prepared tables and charts showing that (a) every person in the country would, with the new law, be subject to a lower average tax rate; (b) the effective tax rate on all investment would be lowered; and (c) there was no discrimination against smaller enterprises, quite the contrary. In the preparation of this documentation, he worked out a formula which would perfect the tax credit and make it exactly equal to the tax already paid at the firm level. This formula was in fact introduced into the modification legislation and was approved, in principle, by the Finance Committee of the Legislative Assembly.

Over the following quarter, the first for Minister Edwin Sagrera, four or five new "proposals" on the income tax were presented to the Legislature, some of them genuinely bad. The Ministry of Finance insisted on the Ministry's proposal, which had itself been modified in March by incorporating a simpler, more complete method for determining the amount of the dividend tax credit. The main points of the Ministry's final proposal were: (a) to establish the full tax credit to eliminate the double taxation of capital income; (b) eliminate world-wide income from the income-tax base; and (c) eliminate almost all uses of the "fiscal solvency certificates". This reform became law in June 1992.

Value Added Tax

Without the slightest doubt, the potentially most significant development for El Salvador's tax, fiscal and economic policy for the future was the introduction of the Value Added Tax. Accordingly, the major point of emphasis for the MoST Project throughout the first three quarters of 1992 dealt with the variety of steps necessary to prepare for the VAT. Project activities in this area included VAT computerization, VAT administration, publicity and public educational campaigns, the construction and initial applications of the indirect tax model, strategies for convincing the government itself to follow through with this central component of the tax reform, and polishing off the final version of the VAT law that was to be submitted to the Legislative Asambly.

During the week of November 11, 1991, the Project's first formal short-run policy consultant, Dr. John Due, together with KPMG's Project Manager Fernando Ramos, came to El Salvador to review the by then existing draft proposal for the VAT law prepared by IMF legal

consultants. Unfortunately, the week was not as productive as it might have been, due to a strike by the Ministry of Finance union. Nevertheless, Dr. Due was able to prepare a report on the proposed legislation, finding it to be a generally acceptable proposal but suggesting that it be shortened, mostly by reducing the bulk of the sections referring to sanctions, regulations and VAT procedures.

During the last week of 1991, the Project Director received from the IMF VAT resident advisor, Mr. Victor Vallejos, a revised draft law for VAT, one that had basically eliminated all the sections dedicated to sanctions, regulations and procedures. Basic, pending issues included the appropriate VAT rate, the economic effects of the tax, and potential conflicts with the Guatemalan VAT. On January 13, 1992, Minister Alvarado began the process of making final revisions in the draft VAT law. Daily meetings with the Minister, DGII Director Tobar, Dr. Wisecarver, and Victor Vallejos were held to go through the draft law, article by article. The Minister's strategy was to finish the law by the end of January, publish it for private-sector consideration and comments, submit the final draft to the Legislative Assembly in March and initiate the VAT on July 1. The drafting was completed by the end of the month, but it was not published until February 21, when the public was given a 45-day period to make comments and suggestions.

One major goal of the revision process was to minimize the number of exemptions, and the Ministry's final draft exempted no goods and only four kinds of services. To maintain consistency with the stamp tax that VAT would replace, the "small-firm threshhold" was to be identical to what held for the stamp tax: firms with sales below 50,000 colones or total capital value less than 20,000 colones would be exempt. The initial proposed rate decided upon was 15 percent.

With the change in Ministers, most of March was dedicated to general, transitional issues, but in the last week of March, for a meeting with the Economic Committee, the Ministry of Finance presented its case for the VAT to the then slightly wavering executive branch. Dr. Wisecarver played a major role in that meeting, reminding all present, including President Cristiani, that the VAT was the last remaining piece of <u>their</u> tax policy reforms, as had been laid out in their Economic Plan. The Project estimates of potential VAT revenues, produced with the Indirect Tax Model developed by the Project were presented that same week and helped a great deal in getting everybody's attention.

Subsequent meetings through April and May dealt with the rate to be proposed, exemptions to be granted, and the overall strategy for achiving legislative and public acceptance. At the executive level, it was decided to propose formally a 12 percent rate, instead of the 15 percent included in the original draft. The Legislative Assembly later lowered the rate even further to 10 percent. Regarding exemptions, several were proposed, led by the Minister of Economy. Using revenue-loss estimates from the Project's indirect tax model, the Ministry of Finance managed to hold off most of the exemptions, but significant administrative problems were introduced with the exemptions that the Ministry could not avoid. Another issue was the proposed elimination of the "drawback" (subsidy) to non-traditional exports of 8 percent; Economy Minister Zablah prevailed on that issue, with the drawback rate being lowered to 6 percent instead of 0.

The final policy decisions were taken on May 8; the corresponding law was delivered to the Legislative Assembly on May 26 and was finally passed on July 24, with the VAT to come into

effect on September 1, 1992. The Legislature inexplicably took import tariffs out of the VAT tax base, added fresh fruit and vegetables from Central American countries to the (short) list of exemptions, and included reinsurance as another exempt service. No other changes were introduced. Finally, there were wide spread calls to the Assembly to postpone the application of the VAT, up three months, but on August 27, the last Thursday before VAT was to take effect on September 1, the Assembly rejected the proposal to postpone the law.

In its first months of application, the VAT occupied the huge majority of Ministry of Finance and MoST Project activities were dedicated to all aspects of VAT implementation. In spite of the totally unexpected volume of registrants and VAT returns, the obvious opposition to the tax within the private sector, the lukewarm support given by the Legislative Assembly and by the rest of the government, the apparent inefficiency of customs and other negative factors within the DGII itself, the initial results registered with respect to VAT revenues were satisfactory.

Nevertheless, toward the end of October 1992, Minister Sagrera requested that the MoST Project prepare revenue-impact estimates for a series of potential reforms to the VAT law as it was passed. In particular, he wished to evaluate increasing the rate from 10 to 12%, eliminating some of the exemptions and returning import tariffs to the tax base for imports. Of course, only the rate increase could be expected to have a significant impact on revenues. In any event, no corresponding proposal was ever made formally.

The VAT law did, however, suffer a significant modification in December 1992, as the Supreme Court ruled that four articles in the VAT law--those dealing with DGII closure of firms for open violations of the formal requirements of the law--were unconstitutional.

Publicity, and Marketing

The MoST Project was directly involved in parallel activities in the effort to gain acceptance of the VAT. In early march, the Project Director, VAT computerization Advisor Alonso Rodríguez and IMF advisor Víctor Vallejos met with DGII directors and the Ministry of Finance publicity agency to begin to lay out the publicity strategy. However, it was immediately obvious that the latter had no idea as to what they would be selling, nor was there any indication that they even could eventually learn enough to do so. It was more urgent than had been thought for the Project's short-term expert in this area to arrive.

Mr. Sergio Aburto arrived for work the week of March 30 and was immediately enveloped in a wide variety of urgent tasks and activities. On April 2 he had his first meeting with the Minister, the Vice Minister, Eugenio Calderón, the Ministry's Public Relations Director, and the Project Director. The Minister emphasized three focal points for the publicity campaign: (1) Congressmen; (2) the general public, for whom the arguments would have to be translated out of economics and accounting and into common language, highlighting the general idea that all have to pay a little, instead of trying to squeeze a select few with discriminatory and confiscatory rates; and (3) businessmen, with the goal of eliminating their fear of the unknown.

Mr. Aburto met again with the Minister and Vice Minister just after Semana Santa as to his selection of the agency for the IVA campaign. The authories approved and, according to the time schedule prepared, on May 11 the firm gave a presentation explaining the results of a small survey they had carried out to discover the extent of the population's knowledge of IVA, which was little, incorrect and negative. They then presented their preliminary plans for the publicity campaign, which was approved by Vice Minister Montenegro.

Additional plans included:

1. A seminar for selected ARENA legislators on VAT so they could become the Assembly's standard bearers for the tax;

2. Minister Sagrera was to tape a video where he would read the public announcement accompanying the submission of the VAT legislation to the Assembly;

3. A series of newspaper announcements were prepared for release on the same day, together with a long interview on VAT for the next Sunday's newspaper, while preparations for TV and radio spots were underway.

4. The Minister would appear on newscast interviews, very important in El Salvador.

Immediately upon submission of the legislation, all the local media were suddenly full of references to the tax, some (maybe most) of it negative opinion, some of it an integral part of the Ministry's publicity campaign. Mr. Aburto helped prepare the Minister and the Vice Minister for televised interview news programs, prepared notes on VAT and tax administration progress within the Ministry of Finance, arranged meetings with ARENA legislators and Ministry technicians and advisors, participated in the preparation and explanation of the series of planned communications--newspaper and TV ads and commercials, communiqués, articles, etc.--prepared responses to proposals for modifications of the law before Congress.

In the last week of September, Mr. Aburto attended a meeting at the Ministry of the Presidency, together with Vice Minister of Finance Eduardo Montenegro and the Ministry's Director of Public Relations. It was decided, however, that Mr. Aburto modify the emphasis of his work toward a more purely educational orientation, helping to prepare instructional pamphlets and designing potential seminars on VAT administration.

In October, a small-scale campaign relating the 1993 budget to VAT collections, and hence the need for consumers to demand their receipts, was developed. Five TV commercials, together with accompanying newspaper ads, relating the topic to expenditures in health, education, public works, and the process of consolidating the peace accords, were aired between mid-October and mid-November.

Mr. Aburto also prepared a pamphlet on IVA obligations and procedures for professionals; some 10,000 copies were printed. An additional pair of TV commercials as to the importance of emitting and receiving commercial receipts was prepared. And throughout the period, Mr. Aburto

participated in the development and publication of a constant stream of official announcements on different aspects of VAT.

Before leaving El Salvador in December 1992, Mr. Aburto prepared a proposal for a small publicity campaign which would alert consumers to their right to denounce to the DGII merchants that do not comply with basic obligations under the VAT law. He also strongly urged that the series of publicity efforts be maintained and reinforced periodically in order for the tax authorities to maintain the initiative for VAT enforcement and education in full public view.

Customs

Customs: Special Regime for Arriving Passengers' Baggage

In a meeting on July 15, 1992 with Minister Sagrera, Vice Minister Montenegro, the Director General of Customs, MoST Project's resident customs advisors and Dr. Wisecarver, the Minister relayed the President's request that the necessary steps be taken to install a simplified, "traffic-light" (or similar) customs inspection system for arriving passengers at the international airport. The Project's customs advisors prepared a draft law on the topic within a matter of weeks and presented it to then customs Director, Lic. Roberto Manzanares. Unfortunately, Lic. Manzanares neither commented on the draft to the advisors nor presented it to the Minister or Vice Minister.

The topic came up again in another meeting on March 1, 1993, this time with new customs Director Lic. Salvador Sanabria. The Minister emphasized his desire to be able to present new laws for Duty Free Shops in the International Airport and for passenger baggage as soon as possible. It was agreed that customs Technical Sub-Director Lic. René Salazar, Lic. de Arévalo, Mr. Luis López and Dr. Wisecarver would meet to prepare the final versions of these laws. The former project took relatively little time and, during the last week of March, the final draft was sent to the Presidency to be presented formally to the Legislative Assembly. The law was passed in mid-1993 but its constitutionality was contested by the airport's duty free shops with the Supreme Court. The latter agreed to take the case under consideration, a fact which, in El Salvador, means that the law cannot be applied until that august body rules. As of the end of the MoST Project, no ruling has been made.

Progress on the law for passenger baggage was steady but slow, in spite of the fact that the draft prepared months earlier by the Project required very few changes. Thus, in a June 24 meeting, remaining issues were resolved except for the exact wording concerning the exemptions enjoyed by the foreign diplomatic community and "household effects" for returning Salvadorans. The drafting committee's final draft was finished on July 8 for consideration of the Director General of Customs.

On October 23, the Legislative Assembly approved a modified version of the law which, if allowed to stand, would have been worse than no legislation whatsoever, so the Project Director, Advisors López and Zurita, Lic. de Arévalo and Customs Director Salvador Sanabria all

contributed to the letter that the President sent to the Assembly with "observations" on their version and the reasons for preferring the original proposed by the Executive. On October 29, Advisors López and Zurita accompanied Director Sanabria to the Presidency to prepare the "alternative" legislation, which was duly presented to the Assembly.

In the meantime, Mr. Zurita prepared a draft version of the simplified customs form for use under the new law and worked with airport customs officials on the physical design for installing the "traffic light" system. And, in the last week of November, the Assembly approved the law according to the President's observations. It was anticipated that the law would enter into force before the end of December, but it was decided to postpone its application until after the Christmas holiday travel peak. The system finally began to function at the end of January 1994.

Vehicles Valuation

At the beginning of September 1993, Dr. Wisecarver and the Project's Resident Customs Advisors, Luis López and Jorge Zurita, were asked to a meeting with the Ministry's Director of Fiscal Policy and Public Financing, Lic. Carmen Regina de Arévalo, to discuss the issue of vehicles valuation for customs purposes. The Legislative Assembly, under pressure from both new car distributors--complaining about the competition from imports of used vehicles--and organized importers of used vehicles--complaining about arbitrary treatment in customs and special privileges for new car importers--wanted the Ministry of Finance to propose new legislation to correct the situation.

The initial idea from Advisors López and Zurita was to use list prices of new vehicles as the customs valuation basis, both for new vehicles and for used, applying to the latter pre-determined depreciation factors. They prepared draft legislation to that effect, as the Minister initially agreed with this procedure. Dr. Wisecarver, however, argued that the valuation for used vehicles should be that quoted in the Kelley Blue Book (or other such publications), with no depreciation adjustment. After a number of discussions, Minister Sagrera agreed with the latter position. As the Customs Directors were both out of the country, Dr. Wisecarver and Lic. de Arévalo prepared a draft version of the legislation which was presented to the Assembly on September 6.

In the meantime, steps necessary for the Ministry/Customs to subscribe to the Kelley Blue Book service were taken, as this source permits periodic updating of the relevant retail market information from the USA, the principle market for the used vehicles imported into El Salvador.

The topic was discussed again with the Assembly at the beginning of October, when one Deputy presented his own draft legislation. This draft was seriously flawed from the technical point of view. The Ministry's comments were presented again to the Assembly, together with a revised version from Customs as to what would be the Ministry's preferred norms. This draft included lowering the tariff for passenger vehicles to 20% and for work vehicles to 5%, the elimination of non-factory extras from the valuation base (to eliminate one major source of discretion for customs agents) and the obligatory capture of the vehicle's VIN.

In mid-January, the Legislature requested that the Ministry consider new modifications in order to avoid arbitrary and abusive treatment alleged on the part of customs agents against private persons bringing in used cars. On the other hand, there were pressures from new car dealers protesting the too favorable treatment of used vehicles. Minister Sagrera asked Dr. Wisecarver to reconsider the Ministry's initial proposal. After consulting with Customs Director Salvador Sanabria and Sub-Director René Salazar, Dr. Wisecarver replied that the Ministry's initial proposal using continually updated Kelley Blue Book values was in fact the preferable approach that should continue to be included in the global modifications of D. L. 647, along with the reduction in tariffs to the maximum of 20% agreed to at the level of the Central American common market. In addition, if the Legislature wanted to place some kind of restriction on the importation of used vehicles, several options were available, including a tariff surcharge after an arbitrarily set age, a surcharge that increased with the age of the vehicle, a minimum import duty for used vehicles, etc. The Minister consulted with the interested parties in the Legislature who favored the imposition of a minimum duty and agreed with the rest of the proposal, but in fact took no action.

In early March, the Salvadoran Association of Motor Vehicle Distributors requested that the new legislation put new car sales on the same footing as used cars. Then, some legislators objected to a minimum import duty for pick-ups, and, in mid-April, the Association of Used Vehicles Distributors presented to the Legislative Assembly alternative draft legislation that would couple Blue Book valuations with an additional table of assumed depreciation rates. Minister Sagrera asked Dr. Wisecarver to prepare a note from the Ministry of Finance to the Legislature explaining the Ministry's position against the alternative proposals. As of the end of the Cristiani government, no legislative action had been taken on this issue.

Finally, during the second half of the year, Minister Ricardo Montenegro and Vice Minister Córdova finally agreed to procedures favored by the Association of Used Vehicles Distributors, utilizing the H. M. Gousha New Car Cost Guide (supposedly with lower values than the Kelley blue Book) and applying an arbitrary and generous depreciation table. Legislation to that effect was approved and, as of the end of the Project, was to be fully implemented once the Ministry of Finance obtained the Gousha data in magnetic form.

Presence of the Court of Accounts

As early as January 1992, the presence of the Court of Accounts in the customs valuation, classification and duty determination process was discussed in a meeting with Minister Alvarado, customs Director Manzanares, the Project Director and resident customs advisor Luis López. All agreed that such role should be eliminated and the Minister asked Mr. López and Lic. Manzanares to prepare a letter to President Cristiani explaining the reasons and justifications for eliminating that role. The letter was prepared and delivered to the President at the beginning of February. No action was then taken.

Later, in September 1992, the Project's short-term customs administration advisor Carlos Anabalón prepared a memo detailing all the reasons why the delegate from the court of Accounts had no place in customs. On February 4, 1993, Vice Minister Montenegro called Dr. Wisecarver to a meeting with Lic. Carmen Regina de Arévalo to ask that they prepare a complete report on the

legal basis for removing the official from the Court of Accounts from prior control in Customs, presumably under the President's orders. The relevant documentation was prepared with the participation of Treasury Director Miguel Angel Espinoza and based in large part of the work done earlier by Project advisors López and Anabalón.

For the extension of the MoST Project through 1994, USAID made it a condition for the continuation beyond March, and then July, of resident customs advisors López and Zurita that the Court of Accounts delegate be removed from customs. In fact, verbal guarantees and promises were secured, by the President of the country from the President of the Court of Accounts. The agreed date came and went, but the Court of Accounts delegate stayed in customs. USAID accepted the constitutional reform on the Court of Accounts as sufficient progress for the customs advisors to be allowed to remain through the end of the extension. However, as of the end of the Project, the Court of Accounts still has its representative in customs. Moreover, on December 27, 1994, a new Director General of customs was named and, as he was previously a long-time advisor to the President of the Court of Accounts, it would appear that the delegate from the Court of Accounts will remain as a permanent fixture in customs, a continual force against modernization.

Other Activities Related to Fiscal Policy

Throughout the three years of the MoST Project, Dr. Wisecarver was continually called on by all three Ministers (Rafael Alvarado, Edwin Sagrera and Ricardo Montenegro), as well as by Vice Minister Eduardo Montenegro, for assistance on a wide variety of issues. Much of the time, the assistance took the simple form of attending meetings and giving verbal opinions, at times he was asked to represent the Ministry of Finance in meetings with other governmental agencies or with international visitors, and in several instances he prepared memorandums or short position papers, helped to write speeches and prepared written responses to newspaper "interviews". In addition, the department directors of the Ministry, especially the Director of Fiscal Policy and Public Financing, Lic. Carmen Regina de Arévalo, and the latest Director General of the DGII, Lic. Miguel Angel Espinoza, frequently relied on the Project Director for discussion and suggestions on issues they faced. Some of the topics covered merit further mention in this final report.

Special Assistance for Coffee Producers

In May/June 1992, the political issue as to what, if anything, to do with the coffee producers was emerging, since, with record low world prices for coffee, pressure to give them some sort of assistance was rapidly growing and Minister Sagrera wanted to be able to cut off any major expenditure effort on the part of the government in this area. The coffee growers association had prepared a document proposing government intervention and assistance in this year of record-low prices. They requested several provisions, including favorable credits, and a special bond, being made eligible for the drawback of 8% on the value of non-traditional exports. All was in complete contradiction to the sector's political position during the presidential campaign when, after years of being subject to special, at times confiscatory taxation, coffee growers had asked to be subjected to simply the general tax regime in the country. Now they were requesting special bonds, to be paid

for later with a special tax on coffee exports, once prices recovered on world markets. That is, they were asking to return to the same regime that had existed prior to the current government.

Dr. Wisecarver prepared a position paper for the Ministry which documented all the reasons why the Ministry of Finance opposed any sort of special treatment, both on fiscal and on general economic-policy grounds. Both the Minister and the Vice Minister accepted the point of view of the paper, that, as the government's alternative, the only measures to be taken should be to eliminate the special tax on coffee exports and to subject the coffee sector to the country's general income and property taxes.

On June 16, Minister Sagrera asked Dr. Wisecarver to accompany him to a meeting in the Central Bank on the coffee issue. After two hours of discussions, it was evident that the President of the Central Bank would not agree to anything but the idea of a special bond for coffee growers and the corresponding special tax on exports in the future. However, two days later Minister Sagrera asked that a draft law to eliminate the tax on coffee exports and subject coffee producers to the income tax be prepared, with no mention of the special bonds. Dr. Wisecarver prepared the draft legislation and gave it to the Minister on June 26. However, several days later it had become apparent that the Central Bank President's position had been accepted and, later in the quarter, this policy was in fact approved by the Legislative Assembly. A loan of $16 per quintal of coffee was granted at the end of 1992.

Drawback for Exporters

In June 1992, Minister Sagrera asked Dr. Wisecarver to analyze the entire issue of the drawback of 8% on the value of non-traditional exports. Although in cabinet level meetings on IVA it had been agreed that the drawback would be reduced from 8% to 6%, instead of eliminating it as the original draft of the law would have done, the Minister wanted to understand the origin of the drawback, how the rate had been determined and what the Ministry's position toward the future should in fact be. It had become an important point of criticism of the IVA law before Congress because none of the exporters had bothered to notice that this version did not contain the elimination of the drawback.

With respect to the drawback, Dr. Wisecarver explained how the rate had in fact been determined and emphasized that originally the measure was meant to be temporary. It was later discovered that in May 1991 the law had been modified for the worse, the most negative provision having been the granting of exemption from income tax of drawback payments. Minister Sagrera was the first to insist that said exemption had to be eliminated, together with lowering the rate to 6%.

Tax Reform Proposals

At the requests of Vice Minister Montenegro, USAID's Mark Gallagher and Rolf Lüders (of CINDE, the organization charged with carrying out the group of policy studies contracted by USAID during the second half of 1993), during the first few days of March 1994 Dr. Wisecarver

prepared detailed comments on the first draft of a document on El Salvador's tax system prepared by Juan Carlos Méndez, under USAID's government modernization program.

The Ministry of Finance also requested that the IMF send a technical mission to El Salvador to study the issues involved and make concrete recommendations. The team of two experts was in El Salvador during the second half of April 1994. Dr. Wisecarver attended both the initial and final meetings with the IMF team and the Minister; he also granted them interviews and put the Project's programmers and data base at their disposal as requested. In particular, the IMF team was asked to study an alternative minimum tax (or assets tax, as in Mexico), the Central Bank's proposal for "Fiscal Neutrality" and the potential land/property tax for municipal finance, being proposed by AID.

In addition, throughout the first half of 1994, Dr. Wisecarver participated in several meetings and one-on-one conversations with Carmen Regina de Arévalo, Miguel Angel Espinoza, Francisco Góchez and others as to potential tax reforms. In general, there was a notable undercurrent of agreement among Mr. Méndez, the IMF and the Ministry of Finance. The basic goals of any further reforms would be to eliminate remaining exemptions and take steps generally oriented toward both simplifying the tasks of tax enforcement and putting some degree of genuine force behind penalties for evasion. However, in his six months as Minister of Finance, Lic. Ricardo Montenegro showed very little interest in these topics and the discussions never went beyond the IMF working paper.

"Delito Fiscal" (Tax Felony) Law

Early in June 1994, Minister Montenegro expressed his goal of preparing a modified Delito Fiscal Law to be presented to the Legislative Assembly as soon as possible, as it had become obvious in all quarters that the previous effort in this area was inoperative. On this issue, Dr. Wisecarver participated in a series of meetings with local lawyer Felipe Umaña who was working on the topic, at first at the request of the Project and DGII Director Espinoza and later with Vice Minister Córdova. Just before his departure at the end of November, Minister Montenegro presented a version prepared largely by Vice Minister Córdova to the Presidency for subsequent legislative action. The draft in question does not satisfy the Ministry Directors, as it still would appear to leave very little genuine coercive power to the tax authorities.

Fiscal Neutrality

Current income tax law includes interest earned by firms as taxable income but not that earned in recognized financial institutions by individuals, generating obvious distortions in the overall tax system. The Central Bank prepared a draft law for "fiscal neutrality" which, fundamentally, would tax all interest payments to individuals at the withholding rate of, at first, 10% and after 1995 at 15%. The withholding would be a final tax. The Finance Ministry, in particular the Director of Fiscal Planning and Public Financing, Lic. Carmen Regina de Arévalo, DGII Director Espinoza and the Project Director urged that, instead, the withholding be a genuine withholding, at the highest marginal rate for persons (because of banking secrecy, 1099-type forms could not be used) and that individuals claim the refunds that might be corresponding. Several

meetings were held, but at the level of the government's Economic Committee, the Central Bank version prevailed. During August, that draft legislation was rejected by President Calderón and, hence, will not be presented to the Legislature.

Special Withholding Rate on Coffee Producers

The 1993 tax year was the first when coffee producers were explicitly subject to income tax, with the export tax on coffee having been eliminated. For 1994, the world price of coffee had rebounded significantly and, in order for the government to assure itself that coffee producers in fact pay their legal share of the bonanza through their income taxes, it was decided to devise a special withholding rate, against the 1994 (and future) income tax returns, for all producers when their product is sold to processors and exporters. Several different alternative withholding schemes and tables were considered, including a couple devised by Dr. Wisecarver. However, Minister Montenegro's concern was to establish a withholding table that would minimize the number of refunds that would have to be given.

The final decision, in principle agreed to by the coffee producers association, was approved by the Legislative Assembly at the end of October 1994 and has caused a great deal of public controversy, as the coffee producers began to allege that they had not been consulted. As of the end of the MoST Project, the issue had yet to be resolved.

Financing One-Time Expenditures Due to the Peace Accords

As part of the Peace Accords signed by the Cristiani government in 1992, the government is committed to several actions which will require not insignificant expenditures, both one time and recurrent. Many of the former were due during the second half of 1994 and financing had to be found. Certain sectors of the government favored financing through some sort of bond issue, while the Ministry of Finance preferred financing through an explicit, special tax. Different alternatives were under consideration throughout the semester. At one point, Minister Montenegro requested that Lic. de Arévalo and Dr. Wisecarver prepare a note on the relative merits of bonds and an explicit tax. In any event, alternative financing of these expenditures had not been determined as of the end of the Project.

CHAPTER II
MODELING AND FISCAL ANALYSIS

Analytic Models for Policy Analysis

The Tax Modernization Project developed extensive databases of tax and economic data, much of it based on information presented on actual tax returns, along with analytic models to analyze the revenue and distributional effects of alternative tax reform proposals. Six microcomputer based analytic models were developed: (1) an indirect tax model; (2) a personal taxes model; (3) a business taxes model; (4) a receipts forecasting and monitoring model; (5) a budget outlay model; and (6) a computable general equilibrium model.

Each model is composed of a database, containing the model's basic inputs, including data from actual tax returns; software which manipulates the database based on both user specified provisions and model parameters; and a user friendly menu system which allows the user to design policy simulations and evaluate alternatives. The Project Team delivered the models to the Ministry of Finance, installed them in the Departamento de Informática (DDI), and provided training to the staff of the Unit in the use of each of the models.

Each of the models is composed of following three main components:

- Database - basic input of each model composed, depending on the model, of information on individual taxpayers, sectoral production, national accounts, transaction records (e.g. import entries), household surveys, and/or government receipts and outlays.

- Software (Computer Program) - programs developed to manipulate the database for each of the models and produce output or results. The execution of each model analyzes two alternative tax policies, Plan X and Plan Y. Typically Plan X is the current law and Plan Y contains any proposed changes to the law. The alternative policies are compared by displaying the results from each plan on the same summary output table.

- Menu System - user friendly mechanism that allows users to design simulations and evaluate policy alternatives without having to make changes to the computer program. This menu system allows the user to easily:

    - specify alternative tax policies by either modifying previous alternatives or specifying completely new alternatives;
    - specify a new economic forecast;
    - conduct a simulation with the model to estimate the revenue and distributional effects of the specified alternatives;
    - print output tables con the results of the simulations;
    - delete or save tax parameter and output files.

Work on the models began in November 1991. At that time the indirect tax model was begun so that it would be available to provide revenue estimates on alternative structures of the new Value Added Tax by March 1992. In March, the project provided revenue estimates of the new VAT to the Minister of Finance. Throughout the next few months, the indirect tax model was used extensively to estimate several versions of the new tax. Then, once the VAT was approved, the model was utilized directly with respect to revenue estimates for VAT for the 1993 budget and how to treat, in the budgetary sense, VAT refunds to exporters--for the budget, of course, the Project's net revenue estimates should be grossed up to reflect refunds not yet given to exporters and then a separate line item for refund expense be included on the spending side.

In April, work was begun on the other models, particularly the personal taxes, the business taxes and the receipts forecasting and monitoring models. Even though the Ministry had an extensive computerized database of tax return information, it was necessary to gather additional information from the personal and business tax returns. An elaborate transcription process was developed to gather this information in the least amount of time. This activity was coordinated by resident modeling advisor Sergio Madrigal. He was assisted in this task by the staff of the DDI. Data for tax year 1990 was collected, transcribed, and merged with other Salvadoran data sources.

Throughout the remainder of 1992 and the beginning of 1993, the project team finished the development of these models and began the construction of the remaining two models: the outlay model and the computable general equilibrium model. By the end of 1993, the models were finalized and installed in the Ministry of Finance.

Below we present summaries of each of the models developed by the project. Detailed descriptions of the database and model development, as well as the operation of each of the models, is provided in Technical and Users' Guides prepared by the member of the Policy Economics Group of KPMG Peat Marwick. Copies of each of these, documents were also provided, in Spanish, to the staff of the DDI, as part of the Project's training program.

Indirect Taxes Model

The El Salvador Indirect Tax Model is designed to estimate the revenue yield and distributional effects of alternative indirect tax structures. The model combines economic and tax data from a number of different sources into a comprehensive and consistent database. A brief summary of the features of this indirect tax model follows:

- The model, built around an input-output table for El Salvador, is capable of analyzing the revenue and distributional effects of all forms of indirect taxes, including: import duties; excise taxes; and value-added tax.

- For broad-based indirect taxes, such as a value-added tax, the model can simulate the effects of levying the tax at various stages of the production and distribution chain, such as manufacturing. wholesale and retail.

- The model can capture a wide range of interactions within the indirect tax system, including:

  - the interaction among different indirect taxes, such as the effect on value-added tax revenues of a change in import duties or excise taxes; and

  - the extent to which cascading of indirect taxes occurs, resulting in distortions in relative prices.

- The model can analyze the effects of existing and alternative indirect tax structures on tax collections and prices in each major sector of the economy. This analysis, and the analyses described above, can also be performed under alternative economic forecasts.

Database Development. The indirect tax model is operationalized with a detailed data base of tax and economic data from a variety of sources. This database captures all the important flows of goods and services throughout the economy in a consistent and integrated manner. The following are the data sources used to construct the database for the El Salvador indirect tax model:

- Input-output table for 1989 from the Central Bank of El Salvador
- National income and product accounts from the Central Bank
- Balance of Payments Data from the Central Bank
- Computerized import and duty data from bills of entry by the Central Bank
- Stamp Tax declaration data for 1990 from the Direccion General de Impuestos Internos
- Tax receipts data from the Liquidación del Presupuesto General
- Economic forecast from the Central Bank

The model's database was originally constructed for fiscal year 1990, the most recent year for which complete tax data was available. The database was then extrapolated to 1992 consistent with the Central Bank's report level of economic activity and current tax receipts. Estimates of El Salvador's economic performance for later years were used to estate the model to future years for analysis. During the project extension, the project team and the Dirección de Informática staff collaborated in updating the model database to 1993 to incorporate into the database the first full year of VAT declaration data.

Model Structure. The indirect tax model uses a general equilibrium framework, tracing the effects of tax changes throughout the entire economy and capturing both the direct and the indirect effect on prices. The model is used to analyze the revenue and distributional effects of:

- Changes in the tax rates of import duties, consumption taxes, or a value-added tax, by commodity or sector of economic activity;

- Eliminating existing exemptions, whether by type of commodity, sector of economic activity; and

- Introducing other significant reforms to the indirect tax system, particularly concerning the structure or operation of the value-added tax.

The effect of changes in tariff rates can be simulated at the detailed CCCN tariff level for all goods for which El Salvador reported imports in 1990, over 1700 commodities in total. Changes in excise taxes can be simulated for any of the traditional excise taxes. The simulations of the value-added tax are done at the 44 sector level.

Uses of the Indirect Tax Model. The primary purpose of the indirect tax model is to enable policy makers to analyze the revenue, distributional and economic effects of alternative indirect tax policies. The model is specifically designed to enable the user to simulate changes in the indirect tax system, whether they be changes in tax rates, tax coverage or other changes in the structure of operation of the indirect tax system.

Each simulation of the model first calculates the revenue and distributional effects of the current law and then the revenue and distributional effects of an alternative tax policy proposal. It also presents output which compares the effects of the two laws so that policy makers can easily analyze the effects that changes in the indirect tax system will have for various indirect taxes, for industries, and for income classes.

The output tables present information on the total tax liability for each type of indirect tax, the coverage of the indirect tax system at the 44 sector level, and the various components of the VAT system (including VAT charged, VAT credited and VAT remitted to the Government). Some of the specific tax policy alternatives that can be readily simulated by the model include:

- Specify import duty rates by CCCN
- Eliminate import duty exemptions by type of exemption
- Specify VAT coverage on imports and domestic sales at the 44 sector level
- Specify VAT rates on imports and domestic sales at the 44 sector level
- Specify excise tax rates on imports and domestic sales by good (i.e. beer, alcohol, tobacco, and type of petroleum product)

Personal Taxes Model

The Personal Taxes Model is a valuable analytical tool for policy and technical analyses that will enable the Government of El Salvador to investigate, evaluate and forecast various personal income tax and wealth tax scenarios. The Model is designed to replicate the process undertaken by taxpayers to minimize their tax liability, or maximize after-tax income, consistent with the tax law being simulated. A simulation of the model produces the tax liability of the taxpayer under current law and under a proposed law alternative (or a comparison of two alternative proposals) and displays the resulting changes in tax liabilities over a large range of taxpayer declaration, income and demographic characteristics. In effect, the model calculates the tax bill for each household and aggregates the results.

The simulation model and data base developed for the Government of El Salvador is similar in structure to the microsimulation model and data base used by the U.S. Department of the Treasury and the U.S. Joint Committee on Taxation for the analyses of tax policy alternatives in the United States.

Database Development. The database used by the model was developed from a statistical merge of the actual income tax declaration data of Salvadoran taxpayers stored in the Ministry of Finance computer files and the Survey of Income and Expenditure from the Ministry of Planning. These two data bases were merged using a linear programming model that matches records from the two files on the basis of comparable information found in each. Such information includes income, marital status, family size, home ownership, and other items. The data in the Survey of Family Income and Expenditures is statistically weighted to represent the entire population of El Salvador, in addition to the data from the tax declarations filed with the Ministry of Finance.

The merging of then two files produces a significantly enhanced file that combines the income and tax information from the tax declaration file with the demographic characteristics as well as the expenditure information on non filers and nontaxable income sources from the Survey of Income and Expenditure. This merged data base was then further expanded using statistical techniques to add additional data items to make the data base as comprehensive as feasible.

Originally, the merged data base was based on income and demographic characteristics at 1990 income levels and a statistical procedure was used to extrapolate this data base to 1991, the desired year for the personal income tax analyses. This extrapolation was based on a forecast of the Salvadoran economyusing projections by the Central Bank of El Salvador and the Salvadoran Social Security Administration (ISSS). The various sources of data that were used to construct the database for the personal income tax model were:

- File of Tax Declarations from Form 1, Income from Wages and Salaries Only, from the Computer Center of the Ministry of Hacienda
- File of Tax Declarations from Form 2, income from Diverse Sources, from the Computer Center of the Ministry of Hacienda
- Transcribed data from a selected sample of attachments to Form 1 and 2 for 1990, detailing personal deductions, self-employment expenses, depreciation and capital gains information
- 1990-91 National Survey of Family Income and Expenditure from the Ministry of Planning (MIPLAN)
- 1990, 1991, and 1992 Multiple-Purpose Household Surveys from the Ministry of Planning (MIPLAN)

- Annual Statistics Bulletins from ISSS (Salvadoran Institute for Social Security)
- Quarterly Bulletins from the Central Reserve Bank of El Salvador
- Population Estimates and Projections by Department and Municipality for El Salvador from the Ministry of Planning (MIPLAN)
- National Economic Income and Expense Matrix for El Salvador from the Central Reserve Bank of El Salvador

Model Structure. The model is designed to calculate the tax obligation for each taxpayer and aggregate the results. Each simulation produces the tax liability under one law (for example, current law) and compares it to tax liability under a proposed law alternative.

The model has an extensive parameter file for rates, exemptions, and deductions that facilitates the use of the model in analyzing alternative tax law provisions. To the extent that proposed law changes involve only changes in provisions of the tax code that are parameters in the model, simulations can be performed easily, without any changes in the basic software of the model. Among other things, parameters in the personal taxes model permit the user to change:

1. tax rates and tax brackets
2. special deductions and credits
3. tax-free income levels
4. level of employee, personal or child exemptions
5. types of tax exempt income
6. tax deductions for particular types of income

These parameters are used to specify in detail the exact provisions of the personal income and wealth tax laws for each alternative being simulated. The parameters are entered into the model through an interactive menu system and are used to control the execution of the model and to specify the detailed tax provisions and also to calculate an individual's taxable income, taxable wealth and tax liability. After all the parameters are specified using the menu system, the processing of the individual records in the data base begins.

The model reads one individual record from the analytic data base and calculates the tax liability of the taxpayer under two alternative tax plans, Plan X and Plan Y. It aggregates specified intermediate calculations along with final tax liability. When the entire data base has been processed, the resulting totals represent the entire population. These totals are then printed out according to the output parameters specified at the initiation of the simulation.

Since a great deal of effort is placed on developing a comprehensive database, little additional data manipulation remains to be done in the actual model execution. However, due to the extensive parameterization of the model, the user is able to modify the data base during the execution of a simulation. This can be done by imputing additional values to the individual data records based on more aggregate information.

Uses and Output of the Personal Income Tax Model. The development of the comprehensive data base, together with the extensive tax model software, provides the, capability for analyzing a broad spectrum of tax policy issues. In addition, the distribution of each of the above items is organized and presented by income class. The structure of the model and data base enables the user to estimate both the revenue and distributional consequences of complex tax proposals.

Typically the model results are presented by income class. The standard output of the personal taxes model contains:

1. the number of taxpayers with tax liability
2. the effect on taxable income
3. the value of the deductions and exemptions
4. the number of taxpayers with an increase or decrease in tax liability (that is, the winners and losers)
5. the number of taxpayers who were added to and eliminated from the taxpaying population

Each simulation produces the tax liability (and any other intermediate calculations specified) under one law (for example, current law) and compares it to the tax liability under an alternative law proposal.

Business Taxes Model

The Business Taxes Model is designed to provide the government of El Salvador with a tool to investigate, evaluate, and forecast various characteristics of the business income and wealth tax system of El Salvador. The model produces estimates of tax liability changes and of the number of taxpayers affected resulting from tax law proposals by industry and asset size class. The Business Taxes Model in its most basic form is a computer calculator that replicates taxpayers' behavior in their attempt to minimize tax liability and consequently maximize after-tax income consistent with the tax law being simulated.

Database Structure. Since the Business Income Tax Model simulates individual taxpayer behavior, the business tax forms filed with the Ministry of Finance for 1990 serve as the basis for the database. The model database contains computerized data from tax declarations filed by corporations, partnerships, estates, trusts and financial intermediaries, such as banks, insurance underwriters, and finance companies. Records of taxpayers who file returns as individuals or as sole proprietorships are excluded from this model. These are included with the Individual Taxes Model.

The various sources of data that were used to construct the database for the business tax model were:

- File of Tax Declarations from Form 3, Income from Businesses, from the Computer Center of the Ministry of Hacienda

- Transcribed data from a selected sample of attachments to Form 3 for 1990.

- Quarterly Bulletins from the Central Reserve Bank of El Salvador

- National Economic income and Expense Matrix for El Salvador from the Central Reserve Bank of El Salvador

Model Structure. The Business Taxes Model is a computer calculator that replicates taxpayers' behavior in their attempt to minimize tax liability and consequently maximize after-tax income consistent with the tax law being simulated. In so doing, the model calculates tax liability twice for each taxpayer: once for the tax structure assumed to be the baseline against which a proposal is measured, and again for a selected tax law proposal. The model then calculates the difference resulting between the proposal and the baseline and aggregates results for all business taxpayers to determine the overall effect.

Secondly, in order to account for changes in the size of the business sector since the base year, the database was adjusted through the use of the database extrapolation procedure. This consists of altering each record on the file to account for changes in: (1) income levels, i.e., real growth in the business sector plus changes in the price level, (2) Interest rate levels, and (3) the number of business tax filers since 1990.

Uses of the Model. Most notably, the model quantifies the tax effects of business tax policy options for current and future years. The standard model output consists of tables presenting tax liability and its components, such as various types of income and deductions, both aggregated and distributed by several measures. This allows policy makers to identify which proposals best suit the economic and political goals of the government.

Secondly, because the model produces the aggregate amount of tax liability for the current law tax system for future years, it is used to forecast total El Salvador business tax liability. The model also quantifies the impact on total business tax liability by different interest rates, inflation rates, real economic growth rates, and other assumptions.

Finally, the model provides a framework for investigating the degree of taxpayer compliance in El Salvador. Because the data file upon which the model is based contains individual taxpayer information for specific years, the model is used to examine the extent of filing, reporting, year-to-year changes in deduction and income items, and the resulting tax liability effects.

Receipts Forecasting and Monitoring Model

The El Salvador Receipts Forecasting and Monitoring Model is designed to project central government receipts over a five-year time period and to monitor how actual tax collections compare with forecasted values. The model combines fiscal and economic data from a number of different sources into a comprehensive and consistent database.

The main features of the model are summarized briefly below:

- For each current receipt source, the model forecasts annual tax liability through a series of regression equations or liability values entered by the user for five years into the future. Based on historical monthly collections and other information specified by the user, these annual liability forecasts are then transformed into monthly receipts forecasts.

- The model provides revenue estimates for the results generated by the other microsimulation models (i.e., business income taxes, individual income taxes and indirect taxes) developed by the project for the Ministry of Finance. The model transforms liability forecasts generated by the aforementioned microsimulation models into receipts forecasts.

- The model analyzes the revenue impact of new or proposed tax provisions including the introduction of new taxes or changes in existing taxes (e.g., changes in tax rates or the definition of tax bases, or changes in tax payment rules.)

- The Model monitors the accuracy of receipts forecasts in comparison to actual collections. Differences between actual collections and forecasted values are used to improve the accuracy of the forecasts.

- The Model is built around a detailed database of historical, monthly receipts for over 20 revenue sources; projections of economic indicators; regression coefficients linking receipts with economic indicators and changes in tax law or administration; and other information on specific receipt sources.

- Sensitivity analysis of revenue forecasts can be conducted by changing economic assumptions (e.g., alternative forecasts of GDP, inflation rates, population, etc.) or revenue parameters. Model output is reported and compared for two alternatives: (1) Plan X, and (2) Plan Y.

Database Development. As noted above, the Receipts Forecasting and Monitoring Model is constructed around a detailed database of fiscal and economic data from a variety of sources. The primary data sources used to construct the database for the model include:

- detailed monthly receipts data from the REN 024 and the Formulario 21 ST Reports obtained from computer printouts prepared by the Accounting and Treasury Directorates of the Ministry of Finance;

- historical data on economic indicators and economic forecasts from the Central Bank; and

- a series of regression equations that estimate the statistical relationship between tax liability and various economic indicators and changes in the tax code.

Model Structure. The Receipts Forecasting and Monitoring Model is designed to assist policy makers in improving fiscal decision making. Specifically, the model provides multi-year forecasts of receipts, analyzes the impact of changes in tax policy and the economy on revenue collections, and monitors actual collections in comparison to forecasts of receipts. The model is structured around three modules: (1) forecasting baseline receipts; (2) incorporating changes in legislation; and (3) monitoring forecasts in comparison to actual collections.

The first component forecasts annual and monthly receipts by source over a five year period. These forecasts are based on forecasts of annual tax liability (either generated by the regression coefficients specified in the model or entered directly by the user), with adjustments made for form of payment distribution and monthly timing factors.

The legislation module forecasts the impact of changes in tax legislation or new tax provisions on receipts. The model transforms into monthly receipts forecasts the liability estimates of proposed legislation produced by the microsimulation models. An annual liability for the provision is entered by the user for the base year of the tax change. As in the forecasting module, the user specifies assumptions regarding the form of payment for the provisions (when appropriate), as well as timing patterns. The model then forecasts receipts for the base revenue system as well as the impact of the changes in legislation.

The monitoring module uses actual collections data to improve the monthly receipts forecasts generated by the model. Monitoring provides an "early warning system" for adjusting receipts forecasts to reflect: (1) turning points in the economy (e.g., altered patterns of consumption), (2) bottlenecks in the tax system, (3) changes in compliance or noncompliance, and/or (4) administrative delays in recording collections. On a monthly basis, forecasted receipts are compared to actual receipts and the difference is calculated. This difference is then allocated across the remaining months of the forecast in an exogenous, proportional or relative manner, depending on patterns chosen by the user.

Uses of the Receipts Forecasting and Monitoring Model. To facilitate the use of the model without extensive knowledge in computer programming and operations, the model was developed with a user-friendly interactive menu system. This menu system allows the user to make changes in revenue parameters or economic scenarios, and then to analyze the revenue implications of these changes, with minimal key strokes and no need for programming. Data entry and updating are

undertaken through a series of automated screens; these screens are used in running the model simulations. Collections data and timing patterns are presented both in tables and graphs to aid the user in analyzing the model inputs and outputs. Finally, the interactive menu system provides a large number of preformatted reports that can be viewed or printed to produce output tables and to document all model parameters.

Budget Outlay Model

The El Salvador Budget Outlay Model is designed to project central government, non-capital expenditures over a three-year time period. The model is based on the concept of current services; that is, the future costs of providing the current level of services if spending grows in line with inflation and the growth in program beneficiaries (or "drivers"). The model combines economic, budget and employment data from a number of different sources into a comprehensive and consistent database. The main features of the budget outlay model are summarized briefly below:

- The model, built around a detailed database of current spending by ministry, program, and type of spending, measures the cost of providing current services in future projection periods. Current services estimates include the impact on projected expenditures of both inflation and demand pressures ("drivers").

- The model analyzes the effects of alternative economic forecasts, such as inflation rates and population growth rates, on projected expenditure levels.

- The model captures the budgetary implications of a range of policy changes within the Central Government budget, including:

  - changes in other personnel policies, such as pensions, benefits and contributions to social security;
  - the potential budgetary implications of providing current services expenditures, and options for reducing operating spending in a proportional or selective manner.

- Sensitivity analysis of expenditure projections can be conducted in the model by changing economic assumptions or policy parameters. Model output is reported for two scenarios: (1) Plan X and (2) Plan Y.

Database Development. As noted above, the budget outlay model is constructed around a detailed database of fiscal and economic data from a variety of sources. These data are integrated into a consistent and comprehensive series of databases that capture salient budgeting relationships in El Salvador; the policy context surrounding the budget; and the interrelationships among El Salvador's economic and demographic environment and its
government budget.

The primary data sources used to construct the database for the El Salvador budget outlay model include:

- Detailed annual expenditure data from the *Cierre del Ejercicio Contable y Liquidación del Presupuesto de Ingresos y Egresos del Estado,* obtained on computer tape from the Centro de Cómputo of the Ministry of Finance

- Projections of other fiscal data from the 1993 Presupuesto

- Economic forecasts from the Banco Central de Reserva de El Salvador, the United Nations and the International Monetary Fund

- Other economic and demographic projections from MIPLAN, the Ministries of health, Education and Public works, and various other sources.

Model Structure. The budget outlay model for El Salvador was designed to assist policy makers in improving fiscal decision making. Specifically, the budget outlay model estimates the impact of changes in the economic and demographic environment on government spending, and reviews the potential budget implications of providing current services expenditures.

The model projects government spending based on projected values for economic and demographic indicators, and assumptions about how various types of spending respond to these indicators. The first module in the model specifies projections for various economic, demographic and fiscal indicators--including population growth rates, inflation rates, revenues, capital spending and debt service.

Four types of assumptions are specified in the second module: (1) assigning "drivers" (which act as a proxy for the service recipients or workload associated with each program) to particular budget programs; (2) assigning inflation indexes to particular categories of spending; (3) specifying fixed costs (i.e., whether a particular type of spending is considered to be a fixed cost or whether that type of spending is affected by the growth in program drivers) for particular types of spending; and (4) specifying values for "Policy options" such as the growth in government wages or earmarked spending ratios.

Once the model parameters have been specified, annual projections of operating expenditures may be viewed in the third module. Projected expenditures are reported in detail by various classifiers: spending components, spending types, institutions, programs, and other classifiers.

The user can then review the potential budgetary implications of providing current services expenditures (or "budget balance"), and options for reducing operating spending in a proportional or selected manner. The model incorporates projected values for other fiscal indicators (e.g., current revenues, capital revenues, debt service payments, capital spending) to assess overall budget balance. Based on these inputs and the projected spending values, the model projects an overall

budget surplus or deficit. The model then allows the user to totally or partially eliminate this projected surplus or deficit by adjusting current operating spending in a proportional or selective manner.

Operation of the Budget Outlay Model. To facilitate the use of the model without needing extensive knowledge in computer programming and operations, the model was developed with a user-friendly interactive menu system. This menu system allows the user to make changes in economic or policy scenarios, and then to analyze the spending implications of those changes, with minimal key strokes and no need for programming. Data entry and running are undertaken through a series of automated screens; these screens are then used in the model simulations. Finally, the interactive menu system provides a large number of preformatted reports, which can be viewed or printed to produce output tables and to document all model parameters.

Computable General Equilibrium Model

The Computable General Equilibrium Model for El Salvador is designed to estimate the effects of policy changes and alternative economic scenarios on the economy of El Salvador. The model incorporates the behavior of the different economic agents and simulates their behavior reactions under changes in the economic environment. Information from different sources is combined and integrated in an extensive and consistent database that reflects the basic economic structure of El Salvador.

The general equilibrium model of El Salvador must be used as an evaluation tool of alternative policies and must not be seen as an instrument to generate economic projections. The model should be used to compare alternative policies and not to evaluate independently the merits of one or another policy. A summary of the main characteristics of the General Equilibrium model of El Salvador is presented below:

- Prices are endogenous, which means that they are internally determined by the model. The price system obtained by the model is such that all markets are in equilibrium, i.e., a situation in which supply equals demand.

- The different elements of the economy are clearly represented in the model, including consumers, producers, the government and the rest of the world. This allows us to isolate the different components of a change and therefore serves to better understand the effects of a policy.

- The model can analyze the effect of alternative tax structures, including tariffs, VAT, taxes on exports and on consumption.

- As far as government expenditures are concerned, it is possible to analyze the effect on the economy of alternative structures, including changes in the absolute magnitude of expenditures (both in real and nominal terms).

- The results produced by the model include sectoral changes in production, employment, exports, imports, private consumption and tax collection (by sector and tax type) and prices. In aggregate terms, the results include changes in the real exchange rate (colón vs. dollar), inflation, real wages, capital return and the unemployment rate.

Database Development. The database of the General Equilibrium model is based on the database of the Indirect Tax Model and therefore an important part of the discussion in this document is an extension of items discussed in the Technical Manual of the Indirect Tax Model. As indicated above, the model operates on a detailed database which includes taxes and other economic information from different sources. The database captures the important flows of goods and services through the economy in a consistent and integrated way.

The following primary information sources were used to prepare the database for the general equilibrium model of El Salvador:

- Input-output table from an energy sector study by the World Bank
- National Income and Product accounts from the Central Bank of El Salvador (1988)
- Industrial survey from the National Statistics Institute
- Information on imports and exports for 1988, calculated from customs clearance certificates by the Central Bank of El Salvador
- Income and spending survey for 1980 from the National Statistics Institute
- VAT returns from the General Directorate of Internal Revenues for 1988
- Tax collection information from the State Accounting Office for 1988

Structure of the Model. The general equilibrium model for El Salvador contains three main Parts:

- Behavioral relations
- Budget identities
- Equilibrium conditions

To obtain the model's solution, it is necessary to satisfy all these relations. The database is built in such a way that these relations are simultaneously satisfied in the base case. Simulations alter the model's parameters and provide the resulting equilibrium, one where these relations are satisfied once again (under the new parameters).

Behavioral relations show how different agents in the economy behave when facing changes in economic variables. For instance, one of these relations is the demand for final goods by consumers; this demand depends on their income and the relative prices of goods and services. Another example of behavioral relations is the supply of exports which responds to the relative price of exports received by the domestic producers vis-à-vis the price received domestically.

Another component of behavioral relations is the input-output matrix. This matrix incorporates the transactions involving intermediate goods among sectors and reflects the production technology. Through these inter-sector relations, policies that apparently affect only one sector are "filtered" to the rest of the economy. For instance, if fuel tariffs are reduced, the transportation sector is affected since fuel is used as an intermediate good by this sector.

Budget identities reflect the fact that every entity should spend all its income. This accounting relation must hold regardless of the type of behavior included in the model or the simulation being carried out. For instance, every family should allocate its income between consumption of final goods, tax payments, and savings. If other uses for this income exist, they should be included in the model and therefore in the database.

Finally, equilibrium equations assure equality among supply and demand in the different markets. This means that the solution to the model must be such that the available amount of a good (or service) equals the needed amount. In some cases it is not necessary to include this equation, since a completely elastic offer is assumed (in other words, prices are given) and therefore the amount transacted depends solely on demand. This case may show up in the foreign trade equations, where international prices are given.

Operation of the General Equilibrium Model. To facilitate the use of the model without wide knowledge of computer programming, an interactive menu system has been developed. This system is easily used and allows the user to carry out simulations:

- Specify alternative policies, through the modification of previous options or the creation of complete new alternatives;
- To carry out simulations to estimate the effects of specific alternatives on the economy;
- Print result tables containing the output of the simulations;
- Keep or eliminate parameters and files of the results.

Each execution of the model analyzes two economic alternatives, Plan X and Plan Y. The policy alternatives are compared by presenting the results in a summary table. Appendix F presents a discussion of the result tables.

Development of Fiscal Analysis Capabilities

As a result of the development of this project, the Directorate of Fiscal Analyis created a unit to be the technical counterpart of KPMG, the new unit was called *Departamento de Informática.* This departmenT was headed by Mr. Francisco Góchez, the most experienced and knowledgeable fiscal analyst of El Salvador. The department was staffed with four technicians from different departments, they were: Cecilia de Briones, Blanca Morales, Cristina de Suárez, and Jorge Pasasi. The objective of this unit was to become the foremost agency within the government in terms of quantitative fiscal, economic, and statistic analysis.

Fiscal Analysis Training

Led by the staff of the KPMG, extensive training was provided in both the theoretical and conceptual issues of public finance and the application of the microcomputer-based tax analysis and forecasting models in fiscal analysis. The training took the form of both formal lectures and hands-on workshops and was geared to the backgrounds and expertise of the DDI's staff. The training schedule was designed to take into account the fact, that from almost the very beginning of the DDI's establishment, it was being called upon to provide analysis to the Minister of Finance. Therefore the training had to be structured to minimize the interference with the DDI's regular work activities. The initial training sessions were conducted in half day segments, with the morning dedicated to formal lectures and the remainder of the day being available for course related readings, exercises, and model simulations.

Each model was introduced initially through a seminar covering the major features of the tax being modeled. This introduction was followed by a workshop covering the technical features of each model. Formal presentations of the database and model development were provided along with an in-depth presentation on the structure and operation of each model. In addition, the workshops included extensive "hands-on" practice in using the models to analyze a variety of actual or hypothetical policy issues. The sequencing of the training was organized such that not only did the DDI learn about each model independently, but they also learned how they might be used in an integrated fashion. For example, initial training sessions focused on a specific model such as the Individual Tax Model or the Indirect Tax Model, while later sessions dealt with changes in tax liability due to changes in individual taxes, were later integrated when the tax liability effects from each of the individual simulation models were used by the Receipts Forecasting and Monitoring Model to determine the overall effect on tax collections, by month and by year.

While it was anticipated that one or two analysts in the DDI would develop an in-depth understanding a one or two models, the model training was conducted for the entire DDI. This approach was taken to ensure that all members of the DDI had at least a basic understanding of the application and operation of each of the models developed.

In addition to training on the use of the models, the Project provided training on general economics and fiscal analysis issues to reinforce the staff ability to evaluate economic and fiscal policies. This training was carried out in weekly courses during the second half of 1993:

Week of June 21	-Intermediate Microeconomics by Mark Gallagher, USAID
Week of August 9	-Tax Policy by Fernando Ramos
Week of August 23	-Public Expenditure Policy by Jose Larios and Dana Weist
Week of August 30	-Macroeconomics by Carlos Bachrach
Week of Sept. 12	-International Economics by Carlos Bachrach
Week of October 25	-Econometrics by Fernando Ramos
Week of Nov. 12	-Topics in International Economics by Carlos Bachrach

Institutionalization of Analysis capability

Mr. José Larios was assigned full-time to the DDI for the last eight months of 1994 in order to institutionalize the role of the DDI in the decision-making process in the Ministry of Finance.

For a period of 8 months during 1994, Mr. José Larios worked directly with the personnel of the Departamento de Informática (DDI). The work had the different components: institutionalization of the models; understanding the results of the models; explaining the results of the model; creating monthly reports about revenues and the behavior of the economy.

During the first seminars where the models were introduced it was detected that the staff of the DDI had little experience working with computers, and had a difficult time making computers an integral part of their box of tools. Thus, the workplan designed to work with the DDI included: familiarization with the models and their databases. Several activities were developed:

- Seminar on the conceptual model of each model;
- Seminar on sources of information within the Ministry of Finance. How the database of each model was developed;
- Develop a set of simulations for each model. These simulations included: simulations such as the effect on revenue collection of a VAT of 10% to a VAT of 15%; estimation of the regressivity of different personal income tax systems using the Personal Income Tax model;
- Maintenance of the Receipts Forecasting and Monitoring Model database. This exercise was important since this model has to be updated monthly, and the DDI made a commitment to produce a monthly report on the state of revenue collections, and modified forecast for the current fiscal year.

As a result of the training, the staff developed more skills and confidence, and more demands were placed on their services by the Minister. For example, when the IMF visited El Salvador to monitor revenues and VAT collections, the DDI was asked to prepare estimations of VAT collections simulating different scenarios; namely, a VAT rate of 12 percent, and estimates

of the fiscal cost of different exemptions such as exemptions on mills, tortillas, bean, and medicines.

Shortly thereafter, the Minister decided that revenue estimations for the 1995 draft budget law had to be estimated by the DDI using the models. The DDI staff worked with analysts of the Budget Directorate in the estimation of revenues for the 1995 budget. Two scenarios were prepared: one scenario with a very aggressive rate of economic growth and another scenario with a slower rate of growth.

Another request came from the Economic Cabinet in early September of 1994. The Economic Cabinet wanted to quantify the fiscal consequences of the five-year plan of the Calderón Sol administration. The staff of the DDI worked in projecting revenue estimations for the next five years. Two scenarios were simulated: a baseline scenario with no changes in law and moderate economic growth, and an scenario with changes in the VAT law and in import duty rates as of 1997. The results of the exercise were presented by the Director of the DDI to the Economic Cabinet.

Also in September, the DDI started to work in a project related to the impact of introducing a Currency board on the economy. For this exercise the Computable General Equilibrium Model was used to evaluate the impact of fixing the exchange rate at 8.72 colones and 10 colones with respect to the Dollar on: prices, the real value of the exchange rate, the different sectors, the current account, and the trade accounts. Also, the revenue yielding impact of lowering import duty rates to zero were examined. Per the Minister's request, the following question was examined: If import duty rates are equal to zero, what is the VAT rate needed to maintain revenue neutrality?. The answer, according to the models was 15 percent. Thus, the Minister proposal of 14 percent VAT with an average import duty of 5 percent was based on the quantitative analysis carried out by the DDI staff.

Finally, in December of 1994, the DDI produced estimates of VAT collections for 1995. The purpose was to help the Salvadoran government negotiate a revenue VAT collection target for 1995 with the International Monetary Fund (IMF) . The staff of DDI produced a report and made a presentation to the IMF about the results.

Exhibit 1

Ministry of Finance Departamento de Informatica Distribution of Activities

Francisco Gochez

- forecast and monitor receipts
- analyze foreign trade issues and make recommendations
- participate in economic policy commissions
- manage the training and use the KPMG Peat Marwick databases and models
- define and supervise technical activities

Cecilia de Briones

- provide monthly projections of revenues, including customs receipts
- compare monthly receipt projections for 1992 and 1993 with actual collections
- analyze monthly receipt projections using the KPMG model
- update the database for the personal and corporate income tax models

Blanca Morales

- compare and review revenue estimations
- support analysis of import certificates
- compare tax receipts for 1992 and 1993 with monthly projections
- provide monthly projections of tax receipts using the KPMG model
- analyze imports
- update the database of fiscal indicators

Cristina de Suárez

- review revenue estimates
- project customs receipts
- update the imports database
- update the indirect taxes databases, as well as the personal and corporate income tax databases
- modify and update the social accounting matrix

Jorge Pasasi

- update foreign sector (imports/exports) of indirect tax model
- update indirect tax model
- modify and update social accounting matrix
- update database indirect tax model
- study the effects of harmonizing excise taxes in Central America
- study the harmonization of fiscal incentives in Central America
-

CHAPTER III
TAX ADMINISTRATION

All diagnostic analyses of El Salvador's fiscal system, including the project paper for the MoST Project, have always placed--undoubtedly will continue to do so--the issue of tax administration, audit, enforcement and control at the head of the list of problem areas to be resolved. Accordingly, the Project included and provided significant amounts of technical assistance resources in all these areas, in principle for all taxes under the purview of the DGII. The results of these efforts can only be classified as highly mixed, ranging from outright disappointment to quite positive, promising and optimistic.

It is convenient for this final report, and quite appropriate for the purposes of evaluating the results of this part of the Project, to divide the technical assistance provided under the MoST Project in the tax administration areas into three separate components: (1) general areas of tax administration within the DGII, with some degree of emphasis on the income tax and general audit procedures; (2) training and implementation assistance for the administration and audit of VAT during the original two-year term of the Project; and (3) VAT administration and enforcement under the MoST extension.

Income Tax Administration

This component of the Project refers to the technical assistance provided to the DGII in the generalized areas of internal DGII organization, tax administration, enforcement, audit techniques, evaluation and training, under the guidance of Resident Tax Administration Advisor, Mr. Manuel Villareal, and with short-term advisors Jess Hernández, Ben Maestas, Mike Lugo and George Zerda. In spite of the efforts of these highly qualified and experienced professionals, this part of the technical assistance turned out to be frustrating, as the advisors in these areas did not get access to decision makers.

At first, there appeared to be good reasons for the lack of attention to these Project resources. Thus, Villareal's arrival coincided with the start-up and implementation of the new VAT, and most potential counterparts found themselves occupied with new, time-consuming responsibilities in preparing the VAT administration. Then, with the resignation of Lic. Tobar as Director of the DGII and his replacement with Lic. Anaya, it was in fact true that the Director was new to the job, with multiple, immediate demands on his time. It was also true that VAT was still new and several problems emerged that required priority attention. And it was also true that key division and department chiefs were out of the country for varying periods of time and, in their absence, no decisions were ever taken.

However, by early 1993, it became clear that there was a lack of commitment on the part of the DGII Director towards technical assistance. This experience was not unique to the MoST Project, but rather was shared by the IDB-CIAT project and by the IMF resident VAT advisor

Victor Vallejos. It is in this light that the following summary of this general component of the MoST Project should be taken.

Upon his arrival, Mr. Villareal, besides formulating his work plan (which did receive the approval of then Director Tobar), compiled recommendations as to training programs that could be offered to DGII personnel. The DGII responded by requesting two separate courses, one on audit training and the other a supervisors' course for audit group managers, with emphasis on monitoring audit personnel.

These courses were prepared and given by the resident advisor and two short-term training advisors, Jess Hernández and Ben Maestas. They gave two auditor courses and two management courses. All the evaluations as to material content, instructors and lesson content were excellent; the only suggestion was to make the courses longer and to expand course materials. From the viewpoint of the instructors, one interesting conclusion was that the auditors from the regular DGII staff generally performed better than did those from the PRT unit who had supposedly been selected on the basis of superior quality.

For the second management course, targeted particularly for middle and upper-level managers, only three of the nine persons so identified did in fact attend; the course thus had a total of 11 participants. Although the course itself was again well received on all counts, there was no clear commitment on the part of the DGII to this training exercise. Nor was there any clear commitment to the more substantive aspects of Mr. Villareal's technical assistance duties, as decisions simply were not taken.

However, the situation appeared to change in early January 1993, as Director Anaya seemed genuinely enthused by the possible work areas included in the work plan and assigned the Chief of the Control/Enforcement Division as Mr. Villareal's new, direct counterpart. One major task requested was to prepare a plan for restructuring the Control/Enforcement Division. A draft proposal was presented to Director Anaya at the end of January and most of February was dedicated to the restructuring effort. Mr. Villareal participated in a series of meetings with the Director to review the creation of a quality review staff within the Division, a suggestion which, however, met with decided opposition from the Division. He met with Internal Control to review on-going work and make recommendations based on the analysis of completed auditing reports. He also met with the Programs and Evaluation staff to review their proposed work plan for 1993, partly based on the results form 1992. Finally, he met with the Assistance and Registry staff to explore data processing capabilities for the selection of completed returns for audit.

At the same time, Mr. Villareal prepared training materials and organized another management level course to be given later in 1993. Starting in February, short-term control and enforcement advisor George Zerda began to review filed tax returns to identify criteria for determining parameters for computerized methods of selecting returns for audit. During March 1993, the main point of emphasis for Villareal and Zerda was the task of restructuring the Audit Enforcement (Fiscalization) Division of the DGII. After several meetings and an initial proposal, from which certain specific recommendations were eliminated, a restructuring plan was approved

on March 5. In conjunction with the restructuring, several manuals were proposed and prepared by the Project's advisors. These included:

1. A manual to lay out the mission of the Fiscalization Division; the manual would describe positions within the Division and lines of communication for procedures and permanent tasks.

2. A Rules of Conduct Handbook for auditors and their supervisors. The acceptance of this manual was blocked due to a jurisdictional issue, i. e., which personnel division would have the authority to dictate rules of conduct, what sorts of standards and sanctions might be imposed, etc.

Drafts of both manuals were prepared and submitted for consideration. Likewise, a committee was selected to review the First Line Managers Handbook, Mid-Level Managers (Coordinators) Handbook, the Audit Techniques Handbook and a Guide for Developing a Fiscal Audit. At the same time, critical elements as to auditors' positions and performance standards for managers' positions in Fiscalization were translated from IRS manuals to be proposed for adoption with the restructuring.

Mr. Villareal worked on the development of performance evaluation procedures for technicians and managers. A few DGII officials at the management level expressed a certain degree of interest in developing an Incentives Program for Fiscalization, based on examination results. And for the Taxpayer Assistance Division, Villareal helped to draft a flyer on filing requirements that was to be distributed to taxpayers. In addition to continuing work for restructuring the Fiscalization Division, Mr. Villareal and Mr. Zerda began studies on other divisions--Legal, Taxpayer Assistance and Control, Administration--as part of the general movement to restructure the entire DGII. Mr. Zerda also began work on developing a case control system for tax enforcement and had the Operations Manual for Internal Control from the IRS translated as a model for the preparation of the final manual for the DGII.

During June and July, Mr. Villareal's focus was again shifted, this time to the Studies and Systems Division of the DGII. Topics discussed included proposals for restructuring the Taxpayer Assistance and Registry Division, the development of manuals for the Fiscal Control Division, editing translations of manuals for internal control and preliminary discussions, with PRT and fiscal control supervisors, for a merit pay system based on tax assessments actually collected. Mr. Villareal also worked on potential letters to be sent to delinquent taxpayers and training for collectors to be able to deal with delinquent returns and delinquent accounts.

Another major activity was the presentation of a Management Training course, from June 23 to July 9. Although space and materials for 20 - 25 participants had been requested by the DGII, only 15 in fact did attended. The course was given primarily by short-term training advisor Mike Lugo, while Mr. Zerda also dedicated a substantial portion of his time to this course.

During his last two months on the Project, Mr. Villarreal dedicated significant time to revising proposed manuals for both the Internal Control and the Enforcement Divisions. A second topic was his work with Mr. Zerda on the development of a merit pay/incentive proposal for the DGII. Mr. Villarreal also worked with Mr. Zerda in studying and reviewing a proposal for the creation of a criminal investigations division and an internal affairs unit to investigate complaints on employees as well as employee misconduct. Their report and recommendations were delivered just before Director Anaya was relieved of his duties at the end of October.

Value-Added Tax

Throughout the entire MoST Project, but especially over the six-month period from April through September 1992, all resident advisors and local programmer/analysts took as first priority any efforts necessary to help the DGII and the government in its efforts to prepare for and implement the VAT. Particularly, the Project Director and resident VAT computerization advisor Alonso Rodríguez dedicated significant efforts to working with IMF resident advisor Victor Vallejos in setting up the administrative structure and procedures for implementing the VAT.

The Project's working relationship with Mr. Vallejos was consistently excellent and productive. As he had no available budget for additional advisors to assist in such basic tasks as VAT training and preparing the administrative structure for this tax, he relied on the MoST Project's short-term advisors. These included Mr. Sergio Aburto, Mr. Sergio Valle, Mr. César Muñoz and Mr. Ramón Molina.

Over an 18-month period, from late March 1992 through end September 1993, Mr. Sergio Valle made four short visits to El Salvador for the purpose of imparting training seminars and distributing didactic materials on the VAT law and VAT administration and enforcement. His first trip emphasized training DGII trainers; the second dealt with audit techniques and controls; the third, once the law had been approved and some administrative experience had been acquired, emphasized audit techniques and principles based on the DGII's perceptions as to the most pressing needs and weaknesses. One year later, at the end of September 1993, Mr. Valle returned to present two intensive courses to DGII personnel on basic auditing techniques and principles. The first course, given to 37 new tax auditors, covered such topics as basic concepts and characteristics of VAT; the structure of the law and its regulations; taxable acts, tax payments, obligations, exemptions, etc.; sanctions and procedures; and practical aspects of the tax itself in legal and regulatory terms.

The second course was presented to 30 more veteran tax auditors from the DGII. In addition to a theoretical vision of the VAT in El Salvador, the course dealt with practical aspects through the use of case studies based on the law and its regulations.

On a second front, in May 1992 short-term advisors Mr. Ramón Molina and Mr. César Muñoz started to work in three closely related areas: (1) formal training on VAT, mostly in the form of short seminars and lectures, primarily directed to DGII personnel, but also for audiences

from other public-sector institutions and private-sector groups; (2) impart on-the-job training for the DGII on administrative and control aspects of VAT; and (3) assist in the preparation of Vat regulations, instructions, forms and other administrative mechanisms. Special attention was given to gaining a full understanding of infractions and penalties and on accounting methods for enforcing VAT, particularly with respect to unique merchandise accounts, and procedures to monitor inventory turnover. They also helped prepare informational pamphlets on VAT for the general public and more detailed "manuals" for taxpayers, professionals, accountants, etc., on administrative obligations and eventual penalties for different types of non-compliance.

Messrs. Molina and Muñoz gave numerous seminars and lectures on the legal, administrative, accounting and practical audit aspects of VAT. Likewise, they provided extensive assistance to DGII audit staff on procedures in the office, with practical examples based on current cases and procedures under the stamp tax. Their direct assistance in the preparation of instructions for specific administrative aspects of the law--topics which included the taxpayer registry, the authorization and use of cash registers, inventories declarations and controls, fines and sanctions, audit procedures, controls and registration of authorized printing establishments, the transitory adaptation of existing receipts and other documents--was extensive.

Before leaving in mid-December, Messrs. Molina and Muñoz had helped prepare specific instructions on a variety of issues that included withholding agents procedures, the prorating of Fiscal Credits for taxpayers with exempt and non-exempt sales and the applications of fines and interest payments. They also designed forms for a variety of internal DGII control and audit procedures, control over both taxpayers and DGII auditors; in addition, they gave training seminars on the analysis and use of audit reports, and continually participated in meetings on administration, coordination, audit and control topics, techniques and procedures.

Mr. Muñoz returned in March 1993, this time with planned emphasis on imparting audit and enforcement techniques training to DGII auditors, incorporating DGII trainers who would be learning teaching techniques on-the-job. The training sessions covered 5 different groups of auditors, with 2-3 hour meetings for a period of six days. From March through May, more than 135 auditors participated in these sessions. The training was developed around five basic topics: (1) the analysis of regulatory norms dealing with VAT, as taken from instructions and circulars issued during the existence of the VAT law; (2) principle aspects of VAT control; (3) VAT enforcement programs; (4) audit techniques; and (5) the prorata treatment of requests for credits to be returned to exporters.

Mr. Muñoz also met regularly with smaller groups to discuss a number of practical and real topics, including a review of the logical sequence of control plans and enforcement, audit priorities before returning VAT credits to exporters, and specific studies of some 38 real cases of credit returns requests. Just one concrete result of these meetings was the preparation of an internal DGII circular on the audit of VAT returns for exporters.

During June 1992, Muñoz dealt primarily with internal DGII matters, assisting in a such areas as:

- Review and revision of an internal document on a permanent, preventative audit and control function for VAT;

- Designing forms for management control, for auditors, supervisors, coordinators, division and unit chiefs, together with practical examples and internal seminars;

- Drafting instructions on topics such as "desk adjustments" for VAT due (based on information from the fixed points control system), the treatment of Free Zones and Fiscal Areas, procedures for assessing VAT fines and interest, and forms for IVA infractions and sanctions;

- Revising a document of guidelines for VAT auditors;

- Prepared a general index of subject matters for the Fiscal control manual;

In his support for on-going fiscal control and audit, Mr. Muñoz prepared a table for calculating penalty interest and fines for non-filing and/or non-payment, worked on determining the monthly rate for late payments, and reviewed forms and control plans. Mr. Muñoz spent his last five weeks (through mid-October 1993) on training--a seminar on the use of authorized books and registers for Department Delegates, a seminar for 35 new tax auditors on enforcement plans, especially with respect to taxpayers who report sales less than purchases, and a talk on the calculation of de facto adjustments for 34 coordinators and supervisors in the DGII--on-the-job enforcement support and the preparation of instructions, forms, etc. One of Mr. Muñoz's major contributions was the preparation of a practical guide for VAT audit and enforcement which should prove to be highly valuable for the DGII.

VAT Administration under the Extension of the MoST Project

In preparing the work plan for the extension, significant resources for short-term tax administration advisors was included. The first such advisor, Mr. José Messina arrived in El Salvador on April 11, 1994 to begin what turned out to be the first of his two three-month assignments. As was expressed directly to him in an early meeting with DGII Director General Espinoza, Mr. Messina's major task was to assist the DGII in its efforts to increase the efficiency of its enforcement and audit functions, working fundamentally, but not by any means exclusively, with the new Programming and Evaluation Unit. Mr. Messina prepared a document to that effect for the Director General and, upon receiving the latter's approval, prepared a general document for the organizational structure of an internal DGII Unit for Audit and Enforcement Planning, Control and Evaluation. The document laid out the responsibilities for the Unit's chief and sub-chief, as well as the functions of each of the proposed sections. The document did not include the other aspects of the entire organization of the DGII which must be tightly interrelated, such as the entire administrative apparatus itself and the auditing, case processing, rulings and appeals processes. All the relevant Ministry of Finance officials approved the proposal and new professionals were contracted for the proposed unit.

Mr. Messina was asked to review the DGII's Annual Enforcement Plan for 1994. However, since it was the first such plan known to current DGII authorities, Mr. Messina opted not to make comments or criticisms on the plan itself, but rather to urge that the plan be critically evaluated, in terms of the results achieved and problems encountered, after the plan had been in practice for at least three months. The evaluation exercise would also serve as a check on the Programming and Evaluation Unit's capability for marshalling basic information on audit efforts, actions undertaken and results achieved.

In the area of tax enforcement, Mr. Messina worked with the Programming and Evaluation Unit to prepare a pilot plan for beginning to control VAT non-filers for the months of February and March 1994. The goal was to fill the need to establish at least some sort of massive enforcement effort and DGII presence in order to induce taxpayers to begin to pay some attention to the tax authorities. Specific objectives were, for the DGII auditors, to gain experience with a real case of an applied enforcement program; for taxpayers, the idea was to begin to make it known that the DGII has, and will in fact utilize, both the informational tools now available and the political will to enforce tax laws.

When Mr. Messina left El Salvador, his conclusions as to the state of the DGII audit and enforcement efforts and capabilities were, first, that the steps taken since the past month of November seem to be headed in the correct direction, that such efforts should continue but that genuine results could not be expected before a good deal of time has passed and much experience has been gained. In general, he felt that the underlying need is for the DGII to organize itself with the structure necessary to provide efficient service for the entire universe of taxpayers. Mr. Messina's work was so well accepted that the Director General of the DGII requested that he return later in the year and that he study and suggest potential reforms to El Salvador's VAT law while in Chile.

The document that Mr. Messina brought back in late September dealt with certain legal aspects of the law that deserve consideration. Specific topics dealt with confusions and contradictions between exempt and excluded taxpayers, the small firm threshold, regulations for withdrawing from the VAT tax rolls and returning, and others. The document was widely circulated and was the central topic of a seminar with the Tribunal de Apelaciones.

During his second consultancy, Mr. Messina was regularly included in meetings on enforcement operations, the massive enforcement plan for VAT and the imposition of fines for non-compliance. Primarily, however, Mr. Messina dedicated this second visit to helping to define and determine specific procedures and legal bases for a number of specific issues. On these matters, the DGII assigned an excellent lawyer, Mr. René Luna to work with him on a full-time basis. They produced practical documents on a number of issues, including:

- Considerations as to instituting a system for applying fines for VAT law infractions. Even though they found certain points in which the law and its regulations are not entirely clear, they emphatically concluded that the major problems are to be found in the administrative structure and procedures. The document recommended the

establishment of a special section, complete with its organization and functions, to be dedicated to processing the infractions that were detected. The procedures would include specific tasks for the non-filers unit (for both VAT and the income tax), auditors' activities, designations of auditors for specific cases and the Salvadoran concept of "notifications" to delinquent taxpayers.

- At the request of DGII Director Espinoza, Mr. Messina studied the topic of processing and delivering VAT refunds to exporters. In the resulting document, suggestions were made as to procedures for overcoming the problems and delays currently encountered, as well as certain modifications to the VAT law itself.

- Mr. Messina and Mr. Luna also prepared a document on the application of "desk" adjustments based on irrefutable criteria taken from the VAT law itself. The recommendations included, as always, emphasis on the need to organize the effort and carefully and thoroughly plan the enforcement plans. In this area, the utilization of third-party information is essential. The document again emphasized the need to establish the special section within the DGII for processing infractions.

Manuel Beytía. The second short-term tax administration advisor under the extension of the MoST Project, Mr. Manuel Beytía, arrived in El Salvador on August 8. As was the case with Mr. Messina, Mr. Beytía was given the general task of helping to strengthen the DGII's efficiency in its audit and tax enforcement duties. Thus, one specific task was for him to follow up on Mr. Messina's recommendations as to the non-filers program and the organizational structure required for the DGII and, particularly, for the internal DGII Unit for Audit and Enforcement Planning, Control and Evaluation.

During his first month in country, Mr. Beytía had already prepared two short documents for the Director General of the DGII and had begun work with the Programming and Evaluation Unit to set in motion a special, massive VAT enforcement plan, consisting of a sweep of as many taxpayers as possible from the end of September through the end of the year. The main goal was to check compliance with the formal obligations of VAT taxpayers, particularly the delivery of sales slips with all sales, keeping books up to date and in order, compliance with registration requirements, etc., and to generate consciousness as to the presence of the tax authorities for all taxpayers.

When Mr. Beytía left in mid-December, it was still too early to be able to give a definitive evaluation of the plan, but several promising indicators had emerged. In the first 65% of the time span of the plan, some 18,300 taxpayers had been visited; more than 7,200 were found to be in violation of at least one formal requirement. Of these, 3,224 voluntarily paid their fines, while another 3,992 were being processed through the formal sanctions procedures. The total amount of tax adjustments was small, some 2.75 million colones, but the amount to be collected was never the major goal of the plan. The major point was to induce better compliance for the future, and that can only be judged later on. In this connection, however, more than 900

new registrants appeared. Moreover, most of the 20% annual increase in VAT collections occurred in the last three months of the year.

Other areas that Mr. Beytía studied and made recommendations for improvement included:

- The need to follow through with earlier suggestions as to the organizational structure of the DGII.

- Find the way to modify current legislation to insert the DGII closure of non-complying firms.

- Analyze removing the NIT from the data processing of VAT returns.

- Consider a procedure for require the ex ante stamping of VAT receipts.

- The urgent necessity for the formulation of a tax code for El Salvador in order to unify and clarify administrative, legal, procedural and santionatory issues for all taxes. The preparation of a tax code is essential to help the DGII to carry out its duties efficiently.

All of the suggestions and recommendations made by these two short-term advisors, during the extension of the MoST Project have been taken seriously and, as of the end of the Project, are either under study or in the process of implementation.

CHAPTER IV
MINISTRY COMPUTERIZATION

Background

As in most developing countries, the Ministry of Finance and its Computer Center had been struggling with its information processing for many years -- beginning in the late seventies when the Computer Center was established and the computer was located several blocks from the Ministerial complex to when the computer was relocated in the Ministry only to be destroyed by the earthquake of 1986. Although the Computer Center was reestablished within the Ministry in the International Fair Grounds after the earthquake, it was once again separated by the recent move of the Ministry to Tres Torres.

The Ministry's Computer Center operation consisted of two mainframe computer systems, one used for all on-line applications (IBM 4381) and the other used for testing, batch applications, and to act as a backup for the on-line machine. Even though the Ministry Computer Center was evaluating other hardware platforms, all new applications were developed for use on the mainframe system. A new Vehicle Registration System was nearing completion, a governmental accounting system was in the initial design phase, and a prototype system for automated reception of tax payments in banks had been developed and demonstrated on the mainframe. The Computer Center was negotiating the purchase of their leased IBM equipment and had no clear plan for down-sizing. The Director of the Computer Center was coordinating several foreign aid projects (MoST being one) which were all in the process of selecting their own development platforms.

Goals of the Computerization Project

A primary goal of the Project is expressed in the project's name: *Modernization* of Tax Systems. A more fundamental goal was to help the Ministry upgrade their computer systems expertise and development capabilities to meet the demands of the future. In a practical sense this meant a shift to a modern, scalable computer architecture, the introduction of appropriate development techniques for the selected architecture, and most importantly, it meant ensuring that the Ministry possessed the organization, support structure, and development expertise to guarantee continued success in the future.

Development of a Ministry Computerization Plan

The development of a computerization plan for the Ministry started in January 1992. The sub-director of the Ministry Computer Center worked with the project MoST resident advisor to develop a strategic plan for hardware platform conversion and new software application development. A survey of computer vendors in El Salvador and Guatemala was performed to ascertain their ability to support a proposed Ministry platform change and a plan was developed

for downsizing - replacing the existing mainframe hardware and software with less expensive, more flexible mini or micro-computer systems.

Many issues were addressed in this Computerization Plan, including the following:

Management

- Recommended organization of the Ministry for effective management of computerization.

- The proper organization and management of development projects.

Policy

- The roles of mainframes, minicomputers, and microcomputers. What processing would be done on the various platforms and how would data be shared between them?

- Requirements for financial controls (control totals, audit trails, etc.) in all tax administration software.

- Security issues. How will data be secured from unauthorized access and protected from system failure or other unforeseen failures?

Planning

- Requirements for hardware and software growth paths in the short term and long term. Priorities for applications development and hardware and software acquisition.

- Potential applications for computerization in income tax, motor vehicles registration and value added tax.

Standards

- Standards for operating systems, database systems, and programming languages.

- Site standards -- requirements for power, air conditioning, and physical security at each site.

- Standards for packaged software (word processing, spreadsheets, and database).

- Software Engineering Methodologies, i.e., the standards to be applied in defining, designing, documenting, testing, and implementing applications.

- Standards for backup, archiving, and recovery of data and programs.

- System maintenance standards, i.e., the standards that are to be used in managing change throughout the life cycle of each application.

- Documentation requirements and standards.

Support and Training Requirements

- Requirements for hardware and software support both within and external to the Ministry.

- Local vendor support requirements.

- Training of Ministry computer staff and users.

- Procedures for operating computerized systems.

Selection of a Standard Platform

In the past, the Computer Center had focused on mainframe technology. However, the high cost of mainframe technology and the long development cycle in the mainframe environment had resulted in very difficult problems for the Ministry. The Computer Center managers realized that the cost, performance, and capabilities of microcomputers offered superior computer solutions.

One of the early decisions taken by the Ministry Computer Center with the assistance of Mr. Kyriss was the selection of the standard platform on which to develop and run new and converted mainframe applications. It was decided that an "open", non-proprietary operating system offered the most flexible platform for future computerization efforts. Several options including Digital VAX, UNIX, and PC networks were considered. After evaluating cost/performance, vendor support issues, and market trends, it was proposed that the Ministry standardize on PC networks using the NOVELL network operating system.

Selection of Standard Development Methodologies

One of the chief objectives of Project MoST was to introduce simple approaches to requirements definition and software design (software engineering) that were appropriate for use by local computer staff such as those in the Ministry's Computer Center, and to provide the necessary tools for the chosen methodology.

Selection of a Simple CASE (Computer Aided Software Engineering) Tool. After analyzing a variety of computer aided software engineering (CASE) tools, the Project adopted a simple, but powerful CASE tool called the Visible Analyst from Visible Systems. This CASE

tool was utilized throughout the term of Project MoST to assist in requirements definition and the design of the computer software for each application.

Selection of Programming Language/Database Tools. After evaluating cost/performance, local programmers' capabilities, and vendor support issues, FOXPRO was recommended and adopted as the programming language/database system for new software development within the Ministry. In addition, FOXPRO was already in use in the Ministry as a development tool. The selection of FOXPRO did not exclude the use of other products on a special case basis, such as the use of UNIX in Customs as supplied with packaged software from the ongoing SIDUNEA project.

Rapid Prototyping as an integral part of the software development cycle. Project MoST used rapid prototyping to supplement the traditional paper requirements document. This approach did not simply rely on discrete use of a CASE tool or a prototyping technique, but rather coupled the presentation of requirements via the CASE tool with rapid prototyping techniques where, early in the project, a sample application could be used to demonstrate how the computerized system would eventually operate. The goal was to more accurately define user requirements by the early involvement of users in the development process through the use of prototypes that could be implemented and changed in a very timely manner.

Computer Steering Committee

Early in the project a steering committee was formed for coordinating computerization in the Ministry. This committee included management personnel, all resident computerization advisors, the Computer Center director and sub-director, and representatives of all organizations performing computerization related tasks within the Ministry.

The Steering Committee provided guidance and made policy decisions for computerization within the Ministry. In addition, meetings were used to monitor schedules and coordinate responsibilities across all Ministry computerization efforts. Regular meetings were held throughout the first year of Project MoST.

Pilot Projects

Pilot development projects were the heart of this component of MoST Project. They would serve not only to "jump start" the shift in platforms and methodologies, but more importantly, they would serve as training vehicles for Ministry staff. The pilot projects would also act as a test bed to refine the new standards and procedures and would demonstrate the viability of the new platform and methodologies.

One of the first tasks for Mr. Kyriss was to review all current computerization projects to determine their impact on the computerization plans and standards to be adopted, and to assist in the selection of pilot projects. As a result of this review three projects were identified as candidates for pilot project status:

- The implementation of an automated receiving and reconciliation system for tax payments received through banks.

- The conversion of the existing Income Tax System from the mainframe environment to a PC network based system.

- The conversion of the existing Vehicle Registration System from the mainframe environment to a PC network based system.

Detailed descriptions and summaries of these pilot systems, which well before the end of the Project had in fact become production systems in full use within the Ministry of Finance, are presented as appendices to this final report.

Standards for Software Design, Programming, and Documentation

A design and programming standards document was developed by MoST Project to assist in the design of systems that would be consistent and easy to understand and maintain. These standards were later adopted, with some modifications, by the Computer Center, to be applied to all development efforts within the Ministry.

The documentation of a computerized application must be well written, accurate, and complete. For maximum utility the format and content should be consistent from application to application. The Computer Center, with the assistance of MoST Project, drew up standards for the production of user documentation. User manuals and training manuals for the pilot projects were produced by Computer Center staff and reviewed by MoST Project.

Tool Development

The MoST Project developed tools for the creation and maintenance of a data dictionary for FOXPRO applications that ensures integrity between the design specification for an application (as produced with Visible Analyst) and the actual application. The Project also developed a sophisticated security system that allows applications to limit functional and data access according to the specific requirements of a particular workstation operator. This security system is easy to administer and provides a finer level of control than that provided by standard network security mechanisms.

Education and Training of Ministry Staff

The Computer Center was staffed with experienced analysts and programmers, but upgrading of staff and training in the application of new software engineering technology was required. The Project provided for the education of Ministry users and computer staff by having them work as a part of the application development teams to accurately define and successfully implement each computer application.

In addition to the hands-on experience provided by the working on the pilot projects, training seminars and courses were organized including:

- **Computerization Seminar.** Early in the Project, a seminar entitled "Introduction to Computers and the Computerization Process" was developed and delivered to management and key user staff in the customs, income tax, and IVA departments as well as other selected Ministry staff. The seminar presented an overview of the computerization process, the realities (what is possible and what is not), and the role of the user in the process.

- **Technical Seminars and Courses.** The Project delivered technical training over the course of the project, with early seminars concentrating on the computerization process and requirements definition and later courses providing hands-on experience with the application prior to its use in a production environment. Programmers and analysts were given courses in FOXPRO programming, TCL (the programming language for the POS devices), NOVELL NETWARE, PC architecture and configuration, and PC communications.

Conclusions and Recommendations

By all measures the computerization project has been very successful. The pilot projects were implemented and made operational in a timely fashion. Backlogs have been reduced or eliminated, departmental staff requirements have been reduced, management information has been improved, and the systems have gained widespread user acceptance. The Ministry Computer Center has been reorganized, their staff has been upgraded and retrained, and new standards and procedures have been implemented to support the new platform and methodologies.

The ultimate goal of the Project has been to institutionalize all computerization so that it becomes an important and integral part of the day to day operations of the Ministry departments. Technology used in the Project has been transferred to Ministry staff throughout the Project so that the Ministry would become self-supporting.

There are, however, a few areas where additional attention may be required to ensure the long term viability of the changes brought about by Project MoST. Specifically:

- The security system developed by the Project should be adopted by the Computer Center as a standard for all applications.

- Standards for software technical documentation are still under development. This work needs to be completed, and review procedures need to be set up to enforce the resulting standards.

- As systems enter the maintenance phase of their life cycle, standards and procedures for revision control need to be implemented.

- Despite the extensive retraining offered to Computer Center staff, there has been the inevitable resistance to change by some technical staff. Unfortunately, some personnel changes may be advised.

- A decision by the Computer Center to make departments responsible for their own systems development has both advantages and disadvantages. Without arguing those points it should be noted that the Computer Center needs to exercise particular diligence to ensure that the established standards and methodologies are enforced, that systems are integrated properly throughout the Ministry, and that duplication of effort is avoided.

VAT Computerization

The main objective of this component of the MoST project was to introduce information technology in the administration of the Value-Added Tax (VAT). The tax had not been introduced at the beginning of the project, and an important task of the project was to introduce the systems' component of this new tax. The government established that an important component of the introduction of the VAT was to create a sophisticated information system capable of controlling and auditing taxpayers' compliance.

Accordingly, a workplan was designed aimed at supporting the introduction of this tax in El Salvador in an efficient manner. This workplan focused on the two following tasks:

- The creation of a Computerized Register of VAT taxpayers

- Implementation of a data base system for the management and control of tax revenues and collections

The design of the systems and their orientation towards auditing compliance, created the basis for the development of a series of information systems designed to support tax controls. Furthermore, during the last year of the project, all of the different systems and tools were integrated to create a Macrosystem of Integrated Tax Compliance.

State of Tax Administration Prior to MoST

A first and critical point in the initial development of the System was the limited time span available for its implementation. The VAT Law chronogram established an initial time period for the full development of the basic information system necessary to support the development of the

Taxpayers Registry and the management of tax revenues. Under this restriction the necessary systems were developed for tax control, which were to be available at the beginning of the law enforcement.

A second and critical point was the lack of an appropriate support for the massive management processes as required by the VAT Law. Although the local Administration had a Computerization Center and some history on massive data processing, its inefficient administration prevented the utilization of such resources. (As an example, the processing of the 8,000 monthly declarations on the old Stamp Tax experienced normal delays between three and six months and in the case of revenues, of more than 2 years).

With this scenario, and in addition to the necessary information systems, there was a need to create and develop from "scratch" the administrative procedures for its application, efficient data entry, implementation of the Directorate General of Internal Revenues (DGII) computer unit, resources for the training of data processing personnel as well as those of computerization support, and also the availability of physical spaces for the development of these tasks as well as the design of proper bank contracts to fit the new and dynamic data flux.

Systems Development Stages

This section presents in chronological order the different development stages in the computerization systems developed by the project. The systems developments started with the organization of a work team, that is, the Project Staff with personnel from the DGII and the International Monetary Fund resident advisor.

The systems components are the following: Registry, Initial Inventory Control and Processing of Declarations.

Registry of VAT Taxpayers

The first systems task was the development of the Registry of VAT Taxpayers. With this in mind, the registry was implemented and had the following characteristics:

- Creation, administration and control of an updated and systematic registry on all taxpayers, and their main identifying characteristics.

- A provisional tax form allowed the registration of taxpayers that permitted identifying characteristics of taxpayers. Based on this provisional tax form, administrative processes were developed for the gathering and processing of information. The database also allowed queries by users of the information saved in this system. The system also allowed the possibility to enroll new taxpayers, exonerate active taxpayers, and change taxpayers' characteristics.

In addition, a unique data structure was created. This structure has been generalized by the Ministry of Finance.

Data Gathering Form The collection of the fiscal characteristics of taxpayers as well as the different procedures that each taxpayer can carry out such as registration, exemptions, change of characteristics, was implemented through a specially designed form called F-8. The F-8's structure has been adopted by the Unique Taxpayers Registration --Registro Unico de Contribuyentes (RUC). During this period, the advantages of creating a new tax identification number for VAT taxpayers called the NRC was studied and its use finally approved by the Administration. Also in agreement with the Computer Center, it was agreed to use a common database structure for all taxpayers in registered in the Ministry of Finance.

Use of the Registration System. The pre-registration process allowed the initial updating of almost 9,500 VAT taxpayers. The Registration process itself reached a volume of more than 400,000 taxpayers registered in the first month of the tax enforcement. This number exceeded in more than 300% the Administration's projections regarding the expected number of taxpayers.

To cope with this demand, the quality control and taxpayer assistance processes were redesigned. Similarly, the capacity to enter data was increased and a daily working shifts of more than 12 hours per day were established. During this stage, with the exception of data-entry, all systems operation was handled by MoST project technicians, since the Ministry lacked experienced personnel.

Support to the Registration's Computerization Support. To manage and process the massive data load and also provide the Administration with a consulting tool suitable to the taxpayers identification characteristics, the VAT Taxpayer Registration System was designed and implemented. Such system encompasses the following modules:

- **Data Entry Module**: it allows batch data entry as contained in the Registration Form. Also, it allows the management of the declarations of a new taxpayer, operations, and changes in identification characteristics. This subsystem was designed with the capacity to add and adjust modules to fit the massive entry of data. In fact, the rest of the massive data gathering systems developed by the MOST Project are based on the same philosophy.

- **Consulting Module**: it allows screen consultation of all the identification characteristics contained in the data based as well as the taxpayers status.

- **Reporting Module**: it provides access to a series of database reports. In addition, it contains a "Structured Query" module to generate through simple screen commands reports randomly selected.

- **Systems Management Module**: it gives the system users access to different options in the application's administration such as management of reports, backing and recovering

of data systems, security options, special printing (cards, VAT card, self-adhesives) and others.

This system was programmed in a way that different users have different access privileges into the system as a way to keep its integrity. The Registration system was available for permanent operation in a short period of time (May 1992), remaining as future tasks (after July 1992) the improvement of Users Interface (screens and reports), implementation of more sophisticated security mechanisms and other minor improvement as defined by its users.

At the present time, the VAT Registration system has been fully reprogrammed, so as to coordinate it with the Unique Taxpayer Identification System (RUC) developed by MoST project. This integration has enabled the simplification of the registration process which is now on-line.

Data Processing Structure: To support the data processing workload as a result of massive tax administration, the VAT Computerization Area was created in the DGII. This meant that the necessary physical and furnished facilities were made available, including network connections and working guidelines necessary to absorb many analysts in the initial phase, data-entry positions, and also defining its organic structure and operational procedures. Simultaneously with the administrative processes, training was given to the local personnel working in the different support areas.

Initial Inventory Credit Control Systems:

In order to maintain a systematic control on legally authorized credit measured by the stock available at the start of this tax, a system for the administration and control of initial inventory declarations was designed and implemented. Such a system remained operational with the following modules:

- **Data Entry Module**: subsystem designed for massive data entry contained in the Initial Inventory form.

- **Query Module**: subsystem which allows a query of data contained in the initial inventory declaration as presented by the taxpayer.

- **System Management Module**: it enables the user to access the application's managerial options such as data system back up and recovering, security options, posting, integrity checks and others.

This systems' operation enabled the updating of more than 6,100 Initial Inventory Declarations generating, after this data, Tax credit plans to which they were entitled.

This task faced the following difficulties: availability of a minimum time period for the system development; due to the absence of an approved Law, the systems design was subject to

periodic changes; and finally, lack of equipment and a basic organizational structure to implement the system as it was being developed.

In view of the significant growth in the number of registered VAT taxpayers and in light of the Initial Inventory and Registration forms massive data-entry experience, an application for VAT monthly declaration data entry was designed to maximize the data entry speed with a maximum quality. To achieve these objectives a validation filter rendering more than 150 consistent punches in each digital form were created, forcing the double data-entry of erroneous data and also creating the post-data-entry Validation Module and Quality control explicit function to fully verify the data entered.

It is important to point out that the application of these principles increased in more than a 300% the data-entry yield with respect to the ministry's historical averages by offering a finished product in a time period below 15 days from the date the tax is due.

Methodology to Collect Data. Within the defined VAT Law process the most important event corresponds to the monthly declaration. This is because at that moment each taxpayer's commercial movement is systematically entered into the Tax Administration, and definitely transformed into national revenue. It is fundamental in this case to input a group of data as allowed by this event, establishing on the one hand, the tax rates and the tax due, and on the other hand, defining a taxpayers economic-tax profile. To include as much information as possible, the tax forms were designed to include the following information:

- To include basic information such as debits, credits, remainders, fines, interest, and total payments;

- To capture information such that an economic-fiscal profile of a taxpayer can be derived.

VAT Declaration Form. Seeking to satisfy the objectives previously indicated, the monthly VAT Declaration form was designed and called F-7. This form was developed to establish within a minimal field, the greatest possible quantity of relevant data to establish the taxpayers' economic-fiscal profile as well as the declaration and tax payment. Hence, the following bases were established in the form's design:

- To develop a short tax form. The purpose of this form is not to overwhelm the taxpayer and to facilitate the filling-out process.
- To include in the tax declaration enough space for economic digits in order to facilitate the creation of an economic profile of a taxpayer.
- To fulfill with the same form tow objectives: to file the tax, and to use the form as a receipt to prove payment of the tax liability.

VAT Systems Products

The VAT Declaration System has facilities for the creation and maintaining of data base containing the Taxpayer's monthly declaration data as well as all products derived from this process (current account, payment schedule, etc.). It also has the necessary facilities to query the data base on line as well as through specific reports.

This system has the following basic modules:

Registration Module: It allows the in batch data entry process of monthly declarations, originals as well as modified declarations. It allows the creation of declarations lots, data-entry quality validation (for a full month period as for specific data-entry dates), and it includes the automatic creation of Error Vector. Also, it supports the Supervision modules with the editing and selective modification of the declarations before posting, in such a way as to complete the corrective tasks born out of the declarations' quality control process. Applications are programmed to help the monitor system operation to establish the status of the different lots being processed as well as specific modification applications which can be changed on line the TIN, the File or the time period of a declaration when needed.

- **Query Module**: It allows the on line query of data bases stored in the bases. This application allows the call of identifying characteristics as well as the taxpayers behavior in particular, and the submitted declarations' contents, including a current account query.

- **Reports Module**: It allows the creation of reports which indicate the data sources stored in the data bases. This application was geared basically for the issuance of reports, of quality control and the generation of accumulated data relative to tax collection. Different and informative reports regarding tax behavior such as bank collections, economic behavior by economic activity, taxpaying behavior by economic activity, behavioral indexes, Largest Taxpayers (PRT), declarations' error control, requested declarations quantity by bank/branch, received daily, monthly accumulations, VAT revenues by date or period, periodical Error Vector report issuance, among the most important were designed and implemented.

- **Processing Module**: It contains fundamental system applications which allow the updating of data bases, the generation of consolidated master templates, the automatic generation of Non-Filers Plan, integrity checks as well as a series of option to help the Systems Management. This application updates the different VAT Master Files and generates the Tax Current Account.

- **Integrity Checks Module**: The application is geared to an automatic integrity review and purity of information contained in the databases. This verifications is made relative to the concepts indicated as follows:

    - **Non-filers Plan Module**: the application was designed to select those taxpayers who have not complied with the obligation to declare taxes monthly. After

processing information, the system automatically generates the necessary products for this Tax Compliance Plan, which are: advice notices, control listings, statistics, etc.

- **Utilities Module**: this application contains a series of information tools developed to support the VAT Systems Manager such as Backup/Restoring of data contained in the Systems Master files, Reconstruction Indexes to automatically revise and rebuilt, if necessary, the support indexes to data files, etc.

VAT Current Account

The VAT System generates a detailed current account on each one of the taxpayers. It delivers an application which allows the establishment of the taxpayers credit and debit balances. The design is backed by an integration concept, which is the data maintenance based on current accounts documents stored in one and same file.

Such a file is generated with data contained in the different master files which intervene in the system (monthly declaration, initial inventory, credit reimbursement of exporters, credit certificates for fixed assets, payment notices, payments for over payment, etc.) recovering and processing those transactions of financial nature which allow the establishment of the taxpayer's tax balance. This file registers each financial transaction, which may affect the debit or credit balance presented by the taxpayer in some of the form reflecting interactions with the tax administration or viceversa.

Integrated Economic-Fiscal Control Behavior

Complementing the accounting control provided by the different balances kept in the Financial Master or VAT Current Account, there is a need to carry out a systematic control on the interaction events between the tax administration and the taxpayers

For this purpose, and within the VAT System, a Behavior Master File has been defined and its objective is to carry out under an unique structure, the registry of different events taking place during the taxpayers active life, not only relative to the VAT. Such a file generates parallel to data updating registering interaction and engravings in the different master files intervening in the system (VAT Register, monthly declaration, initial inventory, credit reimbursement to exporters, infractions, revenue declarations, etc.) and it stores the facts of such interactions. In short, this file registers each tax-related interaction affecting a taxpayer and it establishes its historical behavior.

Error Vector

The experience of different countries indicates that the number of forms received with errors is high. A powerful mechanism was developed to allow the administration to control this problem. It consists of a computer program designed to detect errors, store them in a register for a

full identification at any moment, and deliver a report to the administration indicating what cases should be prioritized for review.

Basically, such mechanism consists of the development of automated analytical computing routines of the declarations received, whose results are kept in a historical file the faulty declarations received. The effort also included the development of the proper tools for the management of such data. The types of analyses that can be undertaken are the following:

- Consistency Validation
- Arithmetic Validation
- Internal Taxpaying Logical Validation
- Tax Paying Logical Validation punched with external data. Such analysis is supported by routines which make automatic queries such as:
    - If the taxpayer is registered within the tax system
    - If the declared sales total is consistent with declared partial sales amounts
    - If import credits are consistent with the policies actually paid at the Bank
    - If the sales total have not decreased a percentage relative to the historical sales.

The conceptual framework of this methodology is based on the idea that the Administration either can tax 100% of the declarations filed, or postpone audits until resources are available. With this mechanism, all and each one of the declarations entered into the system is analyzed. When an error is detected, it is coded and a level is established, that is, it is evaluated when it does not conform with the taxpayers behavior relative to the expected behavior. In this manner, each error has a meaning. This allows the identification of inconsistencies in each declaration feasible by the administration.

The Characteristics of the Systems

VAT Non-filers. During the project, a series of transitional Non-filers Plan were developed, and a system for its automated management was created as well. As an example, the first VAT Non-filers Plan sent 10,600 notice letters. The Plan's impact was measured by the fact that the number of received declarations the following month increased from 38,000 to 45,000 (16% of Compliance Improvement and 4% more in revenues during the "notice" month). The VAT system has a module which automatically generates plans for taxpayers guilty of non-filing. In essence, it realizes a case selection and generates notices for audits. It also generates a series of statistics on these taxpayers.

Quality Control, Confidence in the applications of information systems and their diffusion throughout the tax administration, dramatically depends on the accuracy of the numbers stored in the data base. As discussed, since the project's initial phase, a good number of resources were

invested in the development of applications and procedures to guarantee the quality of the data contained in the systems; files. Thus, the different procedures and applications were implemented and improved to support the quality control of system data, such as:

- Definition of a Quality Control Policy
- Creation of an organizational structure within the data processing area exclusively dedicated to the Quality Control process.
- Definition and establishment of systematic and rigorous quality control procedures
- Permanent personnel training in the data processing area geared to quality control
- Conceptualization of a system based on the data quality through the management of the Error Vector concept
- Development of multiple reports to support this function
- Development of Data Base Integrity Checks applications
- Creation of a government technical diagnostics committee on the Tax Data Base and the definition of a strategy for its purification

RUI System At the request of the DGII, a processing system for Unique Receipt of Revenue --Recibo Unico de Ingreso (RUI) was designed and developed according to the following details: this completely new application consisted in the development of an specific system to process the Revenue Only Receipt including an additional form necessary to process as payment notice for modification of the F-7. This subsystem includes the following applications:

- **Data Entry Module**: it allows the entering of the RUI and its annex under the VAT system standard content code
- **Supervision Module**: it allows the quality control on the entered RUI
- **Errors Vector Module**: full design and completion of this module which computes and registers the Mathematical Tax Modified RUI logical inconsistencies analysis results.
- **Posting Module**: This module, transparent to the user, allows the RUI Master updating and other associated files after the entered data.

Data Processing Unit: In order to provide the new form gathering procedures with consistent support, it was necessary to separate the existent function in the Computerization Unit creating the DGII Data Processing Unit. This Unit which in fact operates in two shifts with 18 working posts handles the following functions:

- Document reception
- Coding
- Data-entry
- Quality Control
- Filing

These tasks as a whole define in itself a closed process which made it advisable to the DGII the conformation of an independent function, included in fact in the organization's organic structure. In order to guarantee the full functioning of the Unit, the MoST project designed and divulged a rational administrative procedure which describes in detail the tasks to be made at each stage, a procedures still used as of this date.

Control of Documentation Systems

A fundamental part of the VAT taxation relies on the commercial documentation control elaborated and transferred during the tax operation (accounting books, Tax credit proofs, invoices, credit notices, reimbursement notices, etc.), and through which sales remain registered as well as the credits granted by the tax. For its control, three systems were developed with the global objective to maintain the registration and systematic control of the commercial documentation used by VAT taxpayers. All these systems received strong support by the MoST project in the development and implementation of its administrative procedures.

Bookkeeping Control System

This system creates an updated and systematic registry of the type of taxpayer bookkeeping authorized by the VAT as well as its location and mechanism used in the maintenance of such accounting system (paper registers, magnetic means or other). The system delivers to the Administration an efficient mechanisms for the updating of this paper registry. It also allows the timely query on stamp status and location and bookkeeping location of each taxpayer providing a data structure to interface information with tax data for tax purposes.

The system, adjusted to its objectives considered the following modules:

- **Data Entry Module**: allows for data entry contained in the Bookkeeping authorization Form. This subsystem was designed by the On-Line scheme, with screen management modules and collision admitting its adaptation on any other on-line data entry.

- **Query Module**: allows for interactive query by status window and paper location of each of the authorized taxpayers.

- **Reports Module**: it allows to create a series of reports sourced in the Data base reporting the paper status of groups of taxpayers. Likewise, it reveals which VAT registered taxpayers up to the date lack authorized bookkeeping.

- **System Management Module**: It allows the systems User to access different options for the application management such as management of system tables, support and data system recovering, security options and other.

Printing Invoice Control System

This system developed an updated and systematic register on the information of the accounting paper relative to VAT (Credit vouchers, invoices, others) which the different authorized Printers have manufactured for the taxpayer. The system allows the timely and reliable data gathering of information contained in the reports the authorized printers must periodically present to the DGII. Consequently, it allows the agile query of stationery supplied to the different VAT taxpayers and provide a data structure to interface this information with other data for tax purposes. Also, it maintains a non-filer control in the presentation of these reports.

In accordance with the indicated specifications a Invoice Control system was designed and programmed for the monthly printers report on the documents sent by the taxpayers to be printed. The existence of nonsystematic form for data gathering forced the creation of data entry module with a customized design. This subsystem was designed under a novel interactive batch scheme with windows modules and collisions admitting its adaptation for other data entries with manual forms.

- **Query Module**: it allows query by windows not only of data contained in each printers' report but also a search by VAT taxpayer displaying what document and to what printer it has been sent to. Additionally, it allows to contrast in window what was reported by the printers vs the taxpayer information as an immediate control tool.

- **System Management Module**: it allows the user to access the different option in the application management such as handling of system tables, support and system data recovering, security options and other. This system was programmed in such a way that different users have distinct access privileges into the system as a way to safeguard its integrity.

Authorized Printers Control System

This system allows printers to register and control requests to produce VAT related documentation. Based on the indicated specifications a system to queue the requests of VAT documentation is created. This system, initially developed as an independent module was included in the subsystem within the Printers Reports Control System. It considered the following modules:

- **Data Entry Module**: it allows the On-Line entry of the authorized printer essential characteristics and the automatic creation of its Printer Registration Number.

- **Query Module**: it allows the query by windows of the different authorized printers and their essential identifying characteristics.

- **Reports Module**: it allows the obtaining of a series of reports relative to the Authorized Printers data base.

- **System Management Module**: It allows the System User to access different options in the application management such as handling of System Tables, systems data support and recovering, security options and others.

Internal Control Systems

Certainly, the main objective of the project's efforts was to develop a system for tax control. As indicated, in addition to creating tax control systems, support was given to the administration in the creation of support system for its internal management, a fundamental component in the Tax Modernization. Within these applications it is important to mention the following:

Document Control System (Tracking System)

A great part of the DGII internal operations problems was the result of limited control on the location and advance status of the different negotiations being processed in-house. To solve this situation, the short-term consultant, Mr. James Westrick designed the so called Document Control System which enables a precise and updated control of DGII correspondence and case handling status.

Taking as a basis the design patters left behind by Mr. Westrick, a systems operational prototype was programmed with applications to follow up the cases and also the full table systems maintenance programs associated to the system, collisions control, and users' security. With the Systems and Studies Unit's assistance, a pilot plan was put in operation in the correspondence unit, the DGII entrance door. Also, worked was done with the Ministry's Administrative Studies Unit, to generate the working areas codification with the expectation to opening the systems utilization to the Ministry as a whole. For these tests the working team was trained and computer equipment was assigned.

Negotiations Control System

The systematic analysis of the events associated with the implementation of the VAT, encouraged the definition in 1992 of a diagram describing in a summarized and orderly manner the processes associates with the VAT tax. This program was the basis for the definition named negotiations control system whose objectives were to provide a systematic control in each tax case, keeping an updated register on each one of the processes by which it goes through. Under this

scheme it is possible to maintain a simultaneous control on the tax plan as we as in each one of the Tax officials, agents and stages through which goes through a tax case.

In 1993, a proposal was put forward the DGII Administration for the installing of this Project but its start was diverted without until this date the necessary step for its implementation was taken. In spite of it, the development specifications as well as the forms and procedures to be used have been fully defined and can be implemented in a short period of time.

Text Processing Unit

At the request of the DGII Legal Division Executive Staff, an study entitled "Analysis of the DGII Legal Division Mecanographical Output was developed in joint collaboration with the Systems and Studies Unit. It showed the low output of the typing staff in that division, the high utilization of resources and the low quality of its production. As a result of this study the application of a computer technology and the utilization of ration procedures was proposed calling for the creation of text processing unit for that Division, seeking significant savings in time, funds and physical space for the typing function, which at that time represented an important cost for the Division and constituted a bottleneck to all its production process.

An initial implementation of this unit allowed replacement with 6 data-entry users, 33 typists in a fifth of the physical space with a quality level substantially better. The increasing output projections in this unit foresees that absorption in a short term of the totality of the Division's tasks without an increase in the number of working posts. It is important to point out that because of work specific nature, this unit was supplied mostly with IBM PS25 computers discarded by the Computer Center. The implementation costs were, therefore, virtually zero and the generated savings personal as well as in physical space evident.

Audit Support Systems

The Audit system proposed to the DGII consists in the establishment of a concise taxpayer's economic-tax profile, that is, resorting to an increasing series of external sources, accounting for the taxpayer's apparent wealth and which allow the verifications by direct comparison of the consistency of its tax activities, in tax declarations.

To support this concept, a series of systems for data gathering from external sources to the DGII were developed under the nomenclature tax support systems of which a brief summary of its application is presented as follows:

Customs Systems

The MoST Project-Customs has developed a series of support system to that Administration. One of great importance is that geared to the monthly processing of the totality of import policies negotiated at Customs. This data is of great important for the DGII audit activities, because it allows for the direct verification of claimed credits volumes presented by the taxpayer

and also, when the detail of each policy are processed, it provides a precise inventory control on them. Taking this data as base, the two applications were designed and implemented:

- **Customs Query**: To support the audit planning tasks and in site audits, the Customs Query System was designed and implemented. On the one hand it periodically gathers data from the customs policies through the Customs - MoST Project and secondly, it allows for an agile and intelligent On-Line query of this information on each person who has brought imports into the country.

- **VAT/Customs Interface**: Starting from the Customs policies data, this application allows for an interface of taxpayer's credit claims in its VAT declaration and the imports credit actually paid by Customs. Also, it give the user the tools to select those taxpayers with the biggest differences in information between both sources.

This application, geared to audit planning, can easily set parameters for the taxpayer's allowance of in compliance level until the tax pattern is obtained.

Legal System

In an attempt to support the Legal Division as well as the Audit Division tasks, the systems component of the project installed in the Ministry of Finance's network, the database of legal cases pending or being reviewed by Fiscal Court. This system is used periodically by users in the Ministry of Finance.

Queries

POS (Point of Sale) Query: Based on the daily transactions occurred in the financial system of the country, and captured by the POS system, an On-Line query was developed. Through this system it is possible to establish the compliance level of different taxpayers.

Tax Identification Number (RUC) Query: The daily opening of new RUC's (Tax Identification Number) issued by the Ministry of Finance, are transferred to the Ministry's network. In order to make this information available, an On-Line query was developed that shows a RUC number and the characteristics associated to each ID. This is a useful query, but it is of a transitory nature since these information will be available in the Ministry's network.

VAT-Banking System Query: This is an application that allows the Directorate of Internal Revenues, query the VAT declarations received and processed by the VAT system. The information is presented based on the name of the Bank/branch and the date the declarations were presented. This query is useful to check cash-flow, and to validate a declaration.

Super-Query: On of the most powerful applications developed in this project is the Tax Declaration Super-Query. This application allows the user to navigate throughout the VAT, personal and business income tax declaration, import duty declarations, payments made by the

taxpayer through the banking system and captured by POS. The system presents information about family or business corporations, cars, property and other assets. Each physical person or firm is identified by a RUC, and its characteristics are presented in the application. This is an easy to use system. Since this application was built through modules, new modules can be added in a transparent manner, and without affecting the integrity of the system.

Unique Tax Identification Number -- Sistema Unico de Contribuyentes (RUC)

An important step in the modernization of the tax system in El Salvador is the creation and maintenance of a reliable database of taxpayers. This database already exists in El Salvador, the system is called RUC, it is managed through a central computer mainframe (IBM 4381), and its purpose is to issue Tax Identification Numbers (TIN or NIT in Spanish).

The MoST project applied a process of re-engineering to this system; it was transformed to a standard platform under a network of microcomputers. The process of change was the following: first, a series of auditing and analytical tools were added to the system. Second, new characteristics of taxpayers were added to the system to better understand the fiscal and economic profile of a taxpayer. Third, the philosophy of dealing with the public was changed: an on-line system was created that has the capacity to issue a new TIN number in real time (five minutes). Fourth, the system was designed to be integrated with the other systems and tools developed by the MoST project.

The new system has the following strengths:

- the main characteristics of a taxpayer are made available;
- it can provide queries by different concepts (TIN, last name, type of occupation, commercial name, etc.);
- it allows to modify data about a taxpayer;
- it issues TIN replacements in a fast and simple manner;
- it provides tools to guarantee the uniqueness of a TIN;
- it allows to query the "business tree" of a taxpayer;
- it controls for consistency the data entered into the system;
- it allows the consultation of the system by several users at the same time;
- it does have reliable and simple mechanisms to recover data and files lost;
- it does have an adequate security system to guarantee that only the authorized personnel

Auditing Plans

The main objective of the information systems' component of the Value-Added Tax (VAT) administration, was to convince the tax administration authorities to shift their emphasis from collecting revenues to auditing.

The MoST project supported the development of technical and analytical tools to improve auditing. Throughout the duration of the project, firms to be audited were selected using the technical tools developed by the project. The purpose of the exercise was to choose the firms or persons to be audited based on the detection of abnormal fiscal behavior.

Since the beginning of the project, members of the MoST technical team worked closely with the Treasury in the design of a strategy to implement auditing of the stamp tax via information systems. This strategy is based on a generic and simple auditing principle, that seeks to audit by adjusting basic principles of auditing to available information. As a result of this effort, medium and long-term auditing plans are developed. Staff of the auditing department were trained in the basic concepts used to design auditing plans, and in the use of the analytical tools developed. Thus, the following auditing plans were developed:

- Misapplication of credit to exempt-sales;
- Utilization of credits for initial inventory to non-authorized taxpayers;
- Overutilization of credit for initial inventory;
- Utilization out of the legal period of the credit for initial inventory;
- Overutilization of the credit for imports;
- Review exporters with outstanding credit, and likely candidates to ask for a VAT refund;
- Taxpayers with an unusual amount of exempt-sales;
- Select taxpayers who have permanently maintained outstanding VAT credits without being exporters;
- Select taxpayers using different parameters to carry out an "integrated" auditing process for 1994;
- Select taxpayers, in coordination with customs officials, from the duty-free zones to be audited;

- Select taxpayers to be audited from the universe of issuers of credit cards.

It is important to point out that fiscal auditing planning is being practiced in El Salvador, using the technical and analytical tools developed by this component of the project.

Documentation

To support the good use and maintenance of the tools developed by this component of the project, it is important to point out that all of the tools were accompanied by well written and documented manuals.

Training

A key component of the work undertaken was the diffusion of the tools developed. Training courses were developed and implemented for staff of the Internal Revenue office and the department in charge of monitoring the largest taxpayers in the country. These courses included: readings, workshops as well as equipment. The main components of this training were:

- Presentation and review of the analytical tools developed to the staff of Internal Revenue and the department in charge of the largest taxpayers;

- Presentation of the hardware and software used and developed by the project to the information systems staff of Internal Revenues;

- Presentations to the staff of the Unit of Auditing Planning and Evaluation of Internal Revenues;

- Training the trainers;

- Special training to the Director and Vice-Director of Internal Revenue. Also, seminars were given to present fiscal indexes and their application to other Directorates of the Ministry of Finance.

Studies

Different studies were undertaken during the project. They were the following:

- *"Quality Control of taxpayers declarations"*. This study defines the basic concepts used to correct the mistakes found in VAT declarations;

- *"Auditing Policy concerning the vector of errors"*. This documents proposes a systematic mechanism to audit the inconsistencies in the declarations detected by the computer program.

- *"Economic-fiscal behavior of VAT"*. The main objective of this document is to show the importance of the data saved in the VAT data bases in the decision-making process.

- *"Auditing Strategy"*. This paper defines the bases of an auditing policy for the Directorate of Internal Revenues.

- *"Capture of Exogenous Data"*. This document defines the criteria and mechanisms used to gather information to support the auditing efforts using non-fiscal information.

Conclusions and Recommendations

General

Since 1992, several information systems have been developed and implemented to support the administration of the Value-Added Tax (VAT), and other taxes. The objective of this effort was to provide the tax administrators in El Salvador with a set of tools that would enhance their efforts.

The tools developed have the necessary components required to improve the administration, however, there still room for the development of complimentary tools that would increase the efficient administration of the VAT. These tools have to include: the evaluation of the behavior of the tax, the design of a more accurate economic profile of the taxpayer, and a good internal tool to measure and evaluate the auditing plans and the staff in charge of doing it.

An important step forward in the tax administration of the country, was the creation of information departments in each directorate in the Ministry of Finance. Their existence combined with the transfer of technology by the MoST project, guarantees that the advancements in this area will be maintained and the systems and tools developed will be also maintained. The transformation of the Computer Center of the Ministry from an executing agency to an agency that supervises the work of the different information offices, is a great leap in the modernization of tax administration. This new role of the Ministry's Computer Center guarantees that the information systems work in the Ministry will be integrated and self-sustaining in the long-run.

Training

The development of tools and the creation of information systems offices throughout the Ministry do not guarantee the long-term viability of the reforms. It is important to communicate through training the new methods of working and to familiarize the staff with the tools developed. This implies that training has to be a permanent effort at different levels of the Ministry. It is important that staff becomes aware of the role of information in their daily work.

If the final user of a tools does not know or misuse the tool, the database that support these tools will degrade and, thus the tools themselves. Training combined with a healthy degree of respect for information has **not** been incorporated as part of the work habit of the staff in tax administration.

Hence, it is important to create a training center within the Directorate of Internal Revenue. this center will constantly train and support the work of auditors and technical personnel in charge of tax administration. Also, it is key to institutionalize the organized management of data bases within the institution, in order to control the quality of the information.

Without these improvements, tax administration will be weakened in the long-term.

Need of the Directorate's Commitment

There are many tasks ahead in the area of tax administration. The Internal Revenue Directorate needs to establish the organization's priorities in the future. The postponement of important tasks implies great costs to the tax administration of El Salvador. New tools need to be developed, and the Directorate needs to provide the analysts-programmers need to develop new systems. This is an immediate task.

It needs to be pointed out that all of the information systems' development can be carried out as long as the administrative guidelines and procedures that regulate the process to be "mechanized", are previously defined. Based on experience, it can be said that there systems that are not being used due to lack of guidelines and procedures that regulate their use. As a result, these tools are used improperly, and data is lost or becomes susceptible to acquire virus.

Strategy to Develop Systems

Systems should be developed gradually in order to avoid a divorce between organization and systems. It is appropriate to take into consideration that organizations take time in absorbing new technologies and procedures based on information technology.

However, it is the responsibility of the Directorate to monitor that future projects and internal projects as well, are coordinated as to adjust their pace of development to the absorption capacity of the organization.

Based on the MoST project experience, it is advisable to create small working groups that include: one analyst-programmer, one systems-analyst, and at most two users with the authority to make decisions. This mix of people was very successful in our project.

It is important to state at this point, that the information systems development in tax administration is not independent and isolated from the rest of the organization. Its development is impossible without the support of the Directorate of Internal Revenues, thus it is key to insist on the necessity to integrate the work of these two components in the successful development

CHAPTER V
CUSTOMS ADMINISTRATION AND COMPUTERIZATION

Introduction

The MoST Project activities in customs administration and computerization were carried out by resident customs administration advisor Luis Lopez and resident computerization advisor Jorge Zurita. Their activities were complemented by several short-term advisors.

Legal Reform

In January 1992, at the start of the project's execution to modernize Customs in El Salvador, duty collection on foreign commerce was basically ruled by the Central American Tariffs and Customs Agreement, by the Central American Imports Tariff consisting of three parts; by the application rules and Tariffs interpretation, complementary national and chapter notices issued by the Legislative Act No. 647 1990; and, by the Central American Legislation on Merchandise Customs Value and its Rules.

Likewise, merchandise clearance was regulated by the Customs Regulations, dictated through Executive Decree dated October 11, 1915; by Rules Duty Declaration issued in 1931 and, in addition, by several rules on specific systems. Also, the Law for Contraband Repression and Customs Fraud was enacted since 1961.

Such obsolete, varied and complex Customs legislation has been one of main reasons for the slow Customs clearance procedures, duty evasion and administrative corruption. The MoST Project regarded as a top priority the preparation of a Code or Organic Act which would incorporate and update all pertinent rules as well as establish a new organization within the Dirección General de la Renta de Aduanas ("Customs Administration") geared to speed up the Customs clearing process and, at the same time, collect the appropriate Customs tariffs and duties. It was also necessary to prepare a project on Customs Infringements Law which would replace the ancient Law for Contraband Repression previously mentioned.

In fact, given the 1984 commitment taken on by El Salvador within the framework of regional integration regarding the substitution of the 1963 CAUCA or Central American Uniform Customs Code (Código Aduanero Uniforme Cnetroamericano) for one accepted by all the other Central American countries as well the necessity to urgently solve some of the problems found in Customs administration, it was necessary to enlarge and organize this subproject as follows:

- Support of the CAUCA negotiations
- Elaboration of the following projects:

- CAUCA National Rulings
- National Customs Legal Code
- Customs Infringement Law
- Duty Free Shops Systems Law
- Foreign Passengers Baggage and Rulings
- Decree to substitute or modify Decree 647
- Customs Organic Act
- Customs Services Rates Law

The following sections refer to each one of these activities and constitute main reforms achieved in the last three years in El Salvador's Customs Legislation.

Support of the CAUCA negotiations

By considering the new CAUCA the basis for all legislation to be dictated within the project's framework for the modernization of Customs, during 1992 the MOST project lent full technical support to the Customs Administration delegates participating at the regional level negotiations. The corresponding proposals and recommendations suggested the CAUCA be composed of substantive rules based on flexible principles; and that these were geared to the acceleration of Customs procedures by the simplification of said procedures as established by each country in accordance with their needs; and, allowing for establishment of controls after ("a posteriori") Customs merchandise clearance.

After eight years of negotiations, the CAUCA was approved in January 1993. Such code, however, was not yet in force at the end of the Project because a third Central American country had not delivered the corresponding protocol's ratifying instrument thus impeding the transformation of customs in El Salvador. The CAUCA represents a regional advancement on the subject, however, the improvement of these services in the country will depend fundamentally on the rulings, standards and other measures adopted on its own initiative.

Elaboration of CAUCA's National Regulations

At the beginning of MoST Project, customs activities in El Salvador were governed by rules requiring the intervention of at least eight employees in the area of merchandise clearance assigned to the imports systems area, and raised to ten when merchandise is subject to tariffs exemptions. As a result, delays ensue, on an average of one week in the San Bartolo Customs facility and on occasion, more than fifteen days, especially when consultations are required from the Customs Administration. These delays were conducive to illegal payments benefiting Customs employees meant as an incentive to accelerate the process.

Confronted with poor possibilities that a CAUCA community ruling would be issued on a short term and in great need for the Customs System to contribute as soon as possible to the opening of the economy in El Salvador, the government decided to adopt its own regulations. In accordance with the objectives indicated in the MOST Project relative to legal reform, all

regulations regarding customs activities must be consolidated as well as substantially modified to accelerate the customs process without affecting the revenue improvement through efficiency controls.

The main activities executed in the preparation of a CAUCA regulation include the following:

1. In September 1992, the project for a CAUCA National Regulation is delivered to the General Administration by Project short term consultant, Mr. Carlos Anabalón.

2. A Task Team begins in October 1992 begins Project's review process.

3. After a series of interruptions the Task Team presents the Project's second version in July 1993.

4. The final project is prepared during the first four months of 1994.

5. Through Executive Decree No. 43 of 1994, a National Regulation on the Central American Uniform Customs (RENCAUCA) is issued but it should have been in force eight days after its publication in the "Diario Oficial".

Complementary to the activities described above and under the USAID direct auspices, as well as to assist the authorities in the decision making process regarding the proposed legal reform, an observation tour of Mexican Customs was organized. Six operatives from the Customs Administration and the Interior Ministry took part, in addition to two Customs resident consultants and the USAID Economic Advisor. It was verified at that time, that the proposals formulated for the Project MOST to accelerate customs clearance procedures had already been tried in Mexico with highly positive results. It proved that to effect changes, there was need to obtain the support at the highest level by first modifying customs duties, by privatizing some of the public services and replacing Customs staff with a group of trained professionals.

After almost two years of work, interrupted by several reasons, the RENCAUCA was issued in June 1994, but it was not been applied as of the end of the project because it is subject in a way to the political will of the other Central American countries which must implement the CAUCA through the delivery of the corresponding Protocol's ratifying instruments. In general, the RENCAUCA has been favorably received by all persons connected with foreign commerce, as it targets the modernization of customs. Nevertheless, observations have been brought forward especially with respect to the following aspects: suspension of exemption on the so called tax precincts (recintos fiscales); requirements for customs agents to pass every three years an examination on updated procedural matters; and, the removal of Customs Court of Accounts delegates. At present and in order to enforce these set of rules, work is being done on the National Customs Code which must be approved by the Legislative Assembly.

National Customs Code (CAN)

On September 1994, after almost three years of involvement in activities geared to the modernization of Customs a few advances have been observed in the acceleration of merchandise clearance in general, in the eradication of tax evasion and administrative corruption, despite the issuance of the RENCAUCA, Customs Administration's Functional Organic Ruling, the Foreign Passenger Baggage Law and the Duty Free Shops Systems Law, such as the automatization in Customs clearance at the San Bartolo facility and the control of some Customs systems.

To make viable the immediate application of the RENCAUCA, the government had decided to propose to the Legislative Assembly the issuance of a Code or National Customs Law. Such Code would establish substantial standards in Customs activities, and it would be in force until the CAUCA becomes law and it would be further developed by the already issued RENCAUCA.

1. Foreseeing difficulties in the approval of CAUCA, the MOST Project prepared in September 1992 a project for a Customs Code in El Salvador. Although presented to the authorities it was not given course in order to avoid conflict with the regional instrument negotiations.

2. An initial project for CAN was prepared in September 1994 by MOST advisors taking as a basis the already approved CAUCA.

3. Throughout October, the mentioned project was reviewed and a second version was completed at the end of the month to be presented to Ministry of Finance authorities.

Preparation of the Customs Infringement Law Project

A Law for the Repression of Contraband and Customs Tax Fraud was issued through Decree No. 173 in 1961. According to such law, violators must be subjected to prison terms lasting from one to three years and fraud criminals with prison terms varying from one to six months. In both cases, fines are three times the value of the corresponding duties and merchandise tariffs. However, and as a complement, Rule III concerning the Application and Interpretation of the Central American Tariffs, disposes that in case of falsities, omissions or inaccuracies, formulated in the merchandise declarations forms, these are not considered as punishable by law by the Customs Administration, and are subject to a additional 25% in duties, which in the case of Customs value will not exceed one hundred dollars.

At the beginning of the Project, the maximum penalty allowed by law in the case of irregularities in the declaration of merchandise was only $100. With the purpose to correct such deficiencies in the Law for the Repression of Contraband the MoST Project, in preparing a new law, carried out the following activities:

1. In August and September 1992, Consultant Carlos Anabalón prepared and presented the referenced law project to customs authorities.

2. In May 1994, the Chief of the Legal Department and Mr. Luis Lopez prepared a second project on this law, made necessary to take into account the guidelines adopted in connection with new trends regarding tax laws in general and customs tariffs in particular. Notwithstanding, some of the principles and standards considered in the initial project were advantageously used.

3. In June the project was reviewed with the Technical Associate Director and sent to the Ministry of Finance to be presented to the Legislative Assembly.

4. At the end of October, and after some adjustments in accordance with the Chamber of Commerce's recommendations, the project was returned to the Ministry of Finance for approval by the Legislative Assembly.

Present situation, conclusions and recommendations. The removal of traditional controls taking effect at present in the area of merchandise clearance could very well motivate importers to evade customs duties, especially through the many types of fraud available, which makes it necessary to replace them with other selective measures or these be put in practice after the fact (a posteriori). Concomitantly, it is necessary to establish exemplary sanctions which must be above all, feasible in their application, by expediting a new law on Customs Infringement.

The pertinent project, under consideration by the authorities in the Ministry of Finance, must be enforced simultaneously to the RENCAUCA application, otherwise it will produce a legal vacuum since the enforced law could not be applied in view of its being conceived in terms of the old tariffs which are repealed with the CAN ruling. Regarding the project, it is important to point out that it looks at imprisonment only in cases of qualified contraband and not for tax evasion, in view of the state in which the judicial function finds itself -- including Finance Courts --- and given the few existent possibilities of improvement in the near future. This is why it was decided to use fines matched by swift application procedures.

Preparation of a Duty Free Systems Legal Exemptions Project

In facing the need to eradicate tax evasion in duty-free shops, the Ministry of Finance initiated the preparation of a draft law to regulate these exemptions, which was completed and refined with the assistance of the MoST Project. In this regard the following activities were carried out:

1. On March 1993 a project for the Duty Free Systems Exemption Law was prepared and approved through Decree No. 561, published in the Official Journal (Diario Oficial) No. 132, Volume 320, on July 14, 1994.

2. After expedition of said law, the MOST Project completed a number of activities targeting the application and control of such ruling, which was put in force with the preparation of a Users Manual approved by the Customs Administration and distributed in September 1993.

3. Similarly, a system for the control of Duty Free Exemptions was developed and enforced in October 1993 in connection with the set up of import quotas and the control of corresponding exemptions.

4. Likewise, several actions intended to maintain standards on the inventory information provided by the users was carried out. Said activities delayed the start of its respective monitoring until February 1994 and completed in July 1994.

With relation to controls system characteristics, it is important to note that it allows the registration of information obtained from merchandise declarations, the exemptions authorization and the movement of passengers leaving the country. In this way, it will be possible to check the information given through magnetic means by firms on imports covered by the system, sales and inventories. Also, the system will allow a joint selection on firms subject to tariffs, to check the merchandise real inventories under the respective system protection. This system was designed to be utilized, with adjustments, not only to control duty free shops but also other suspended duties on imports, such as customs storage, free zones and *recintos fiscales*.

The system was developed in the DOS environment, using as its data base program FOX-PRO, for which data bases were defined, jointly flagged with entity diagrams. To incorporate the information delivered by the concessionaires, an application was developed in batches allowing simultaneous access to all deliveries' information in order to generate up to date inventories.

Present Situation, conclusions and recommendations. The new Law for the Duty Free Systems curtailed privileges previously enjoyed by such establishments, especially the prohibition to sell duty-free merchandise to travelers returning to the country. The Supreme Court, however, has suspended the corresponding rule as it considers the decrease in duty-free shops activities as an attempt against jobs availability.

Despite the mentioned control limitations, the Customs Administration already counts with automated systems to monitor this system. Once the Tax Department is established, it would be convenient to immediately set up an audit program geared to examine duty free shops and which would be selected at random. In addition to the work done by Civil National Police, it must carry forward a plan for regular inspections of these duty free shops to verify compliance with the law.

Foreign Passenger Baggage Law

Following a request from the Ministry of Finance, the Project prepared a legal proposal subject geared to facilitate foreign passenger circulation on arrival areas and to reduce, as much as possible, administrative errors.

1. On July and August 1992 a project for the Law on Foreign Passenger Baggage was prepared.

2. Only after six months from the preparation of this project, it was reviewed and a new version prepared, eliminating rules on exemptions for household items and vehicles for residents returning to the country, which were considered in the project's initial phase.

3. Throughout the second semester in 1993 the final project was structured, which at the last minute was extended to cover household items. On October 20, through Legislative Decree No. 680, the pertinent law was expedited.

4. On November and December the project on the mentioned law's said ruling was worked and reviewed, and approved through Executive Decree N. 14.

5. From November 1993 to January 1994, the MOST Project was in charge of referenced law's implementation, especially concerning the installation of double circuit systems for which the following activities were developed: design and issuance of baggage declaration form; personnel instructions on procedures for goods clearance; system programs to temporarily replace the baggage selection lights; supervision of computer equipment and furniture installations.

6. During 1994, an application was prepared and is now in full operation to register baggage declarations for control purposes.

Regarding the travelers' baggage declarations application, it is necessary to report that it is developed under DOS environment, utilizing FOXPRO and defining the following data bases:

- Traveler Identification
- Value of used travel coupon
- Collected taxes
- Parameters in random selection

Further, this application avails itself of a consultant monitor, regular listings, parameters modification and data input.

Present situation, conclusions and recommendations. The Foreign Passenger Baggage Law presently in force, has achieved the passenger decongestion at airport, albeit not as fast as expected due to a faulty application in its disposition which forces passengers to pass by the "to declare" circuit when carrying more than 2 suitcases. With respect to revenues, it has been observed that in the first months of 1994 these increased on a monthly average of five hundred dollars to five thousand dollars, but fell sharply during the third quarter due to lack of supervision on the part of airport customs officials.

As indicated, an examination of law modification is recommended regarding the number of suitcases or to offer the proper instructions to obtain its correct application. Likewise, the new Tax Department should consider one of its priorities the periodic inspection of this Customs facility to verify compliance with the law. Further, it is necessary to install an electronic semaphore which should function on a permanent basis and not at the discretion of the staff in charge of its operation.

Preparation of a project to replace Decree 647

This activity was geared to the preparation of a decree project which would lift several administrative restrictions on importation, reduce Tariff duties on merchandise importation and distribution, match Customs rulings to the new CAUCA's rulings, and improve vehicle valuation rules.

1. During the second semester in 1993 several preparatory studies on the project were prepared to replace Legislative Decree No. 647 which referred mainly to the elimination of imports bans and restrictions.

2. In January of this year, after along wait for the opinions of the organisms in charge of Foreign Commerce administration, a definitive version on the mentioned project was prepared. According to the Decree the rights to the third part of the tariff schedule (25%, 30% and 30%) would be reduced, which is the maximum limit on the ranks established within the Central American framework. Among the goods subject to a tariff ceiling were automobiles, alcoholic beverages, watches and weaponry. The Legislative Assembly did not give course to the mentioned project on account of the resistance and the fear expressed by used vehicles importers on being charged fees based on a single source as well as the loss of certain discounts presently applied which exceed the ones registered in the market. On the other hand, the Ministry of Economy also requested the suspension of this procedure because it wished to transfer the third part to the Central American Import Tariffs's second part.

3. Since September 1994 and initiated by the Legislative Assembly, the study on the project to replace Decree 647 was revitalized, especially in the areas concerning the rules on vehicle valuation. Based on our technical support, the Customs Administration recommended not to got ahead with the referenced project because most of the rules regarding Import Tariffs had already been included in the new Customs Rulings.

4. Regarding the rules on used vehicle valuation, the convenience of using as a basis the United States market prices (Suggest Retail Value) was insisted upon so as not to duplicate depreciation discounts nor additional equipment value and to prevent entrance of vehicles older than 5 years by posting a minimum duty of one thousand U.S. dollars. Likewise, it was recommended that as much as possible, the tariff code's 20% and 25% be lowered to 20% including the distribution tariffs which would eliminate some of the arbitrary spread of vehicle under shipments.

However, when facing the vehicle importers' position to establish a treatment similar to the one in Guatemala, the Ministry of Finance authorities together with Customs examined several options, and carried out some exercises to measure the effects on revenues by discounting the basic rates.

Present situation, conclusions and recommendations. Notwithstanding the efforts during almost one year and a half, it was not possible to replace some of the rules posing obstacles to Customs activities and constituting sources for corruption, as for example, the rules relative to inaccurate and false declarations, false as well as complementary notices on used vehicles. It would be convenient to substitute the obsolete Customs rulings in Decree No. 647 for the National Customs Code and Infringement Law. Regarding vehicle valuation, it is important to point out that whichever be the base taken as reference, the rules cannot contradict the Central American Legislation on Merchandise Customs Valuation and its rulings.

Preparation of the functional organic ruling

The MoST Project's initial Work Plan considered a priority the preparation of a Code or Customs Organic Law which would look at rulings to regulate the proper Customs activity relative to functions and Customs Administration organization. For several reasons, it was determined that these rules be the subject of a ruling itself a legal instrument susceptible to modification when circumstances so require it.

1. On August and September 1992 the first project on functional organic ruling was prepared and given to Customs authorities for consideration.

2. This project proposed an organization to comply with all functions traditionally assigned to any area in the Customs Administration. With this in mind, it called for the creation of new departments and units.

3. Between July and September 1993, short term consultant Guillermo Hansen completed a number of activities which resulted in the presentation of a second ruling project.

4. To comply with a request from the General Director, Mr. Hansen also prepared a document called "Proposal for the Improvement of Customs Administration's General Secretariat" which despite the assigned priority was never implemented.

5. In February and March, simultaneously with the preparation of the RENCAUCA Project, the MOST Project prepared the final proposal on the Customs Administration Functional Organic Ruling issued through Executive Decree No. 44, published on June 10 in Diario Official (Official Journal) No. 108, Volume 323.

Functions. In accordance with CAUCA's national ruling, the functions inherent to the Customs Administration which, for various reasons, have been run by the Minister and Vice Minister of Finance office.

- The Tax Department will manage the following functions: audit of firms subject to the various custom systems as well as its agents or representatives involved in the inspection of the many Customs Administration departments taking over the Court of Accounts control; and a review of autosettlements.

- The Customs Systems Department will be in charge of the development analysis, among them the systems relative to free zones, temporary admittance or importation, and international traffic.

- The Legal Department will also be in charge of matters relative to tax infringements and to be sanctioned by the General Director under his jurisdiction.

- In addition to traditional functions, the General Secretariat will be responsible for public relations and the broadcasting of information on Customs ruling.

Present situation, conclusions and recommendations. The Customs Administration 's Functional Organic Regulation was in force since June of 1994, however, as of the end of the project it had not been applied in full. Since the MOST Project's start of activities, the resident advisors have expressed the criteria that the results from the modernization of the Customs system objectives would basically depend on the replacement of a good part of the present personnel with trained professionals, who should be well remunerated and beneficiaries of complementary economic incentives in accordance with their administrative efficiency.

Credit must be given to the Customs authorities efforts to contract qualified personnel, however, until now no real reorganization in the Customs Administration has been undertaken, particularly, because the Civil Service Law and Right to a Hearing Law, in addition to the situation resulting from the Peace Agreements, have limited the possibility of firing employees.

When taking into account that legal changes and the SIDUNEA adoption have met strong resistance from some employees, who were corruption focus, said reorganization is indispensable. In this regard, the Ministry's authorities as well as those in Customs, should study formulations which would make possible personnel replacement, including the creation of a Special Committee to investigate certain corruption complaints recommend the application of sanctions as allowed by law, including the firing of guilty employees.

Preparation of other Legal Reform Projects

The MoST Project also participated in the preparation of other projects to be described below, because they complemented the legal reform initially planned or because they were necessary to obtain so they would follow the same direction in changes needed, as to not become an obstacle in the future in the speeding up of the customs clearance process in El Salvador. In this regard, it is important to point out that the resident advisor Luis Lopez dedicated a good part of his

time in the counseling as well as the study of some of the regional projects in which negotiations the Customs Administration represented El Salvador.

Preparation of a Customs Services Rate Law Project. On August 1994, a preliminary proposal on the Customs Rates Law was prepared, incorporating and updating all rates for Customs services. Importers would pay a 0.4 percent on the merchandise value by the Customs clearing, involving a number of activities and forms paid separately. Also, such law would replace the Storage Rate Law, which took into account some rules which did not concern Customs services, and by their nature, are part of the RENCAUCA.

This law would contribute to customs modernization because it would simplify duties collection and customs clearance, and would also create economic incentives to reward administrative efficiency. All proceeds derived from customs services general taxes, merchandise auctions or penalties for administrative infringements, would be assigned for this purpose. Due to a corresponding check into the National Customs Code, the preparation of the said project was suspended.

Central American Ruling Project on the International Customs Traffic System. During 1992, a Declaration form for this system called "Guide to International Land Traffic" had been put in use. When an opinion was to be given on the request by the Customs Administration with regard for the formal adoption of such guide, it was indicated that a ruling on International Customs Traffic systems was needed. Since then, and for almost two years, Mr. Lopez took over the responsibility to prepare studies and recommendations to establish the Salvadoran position on the subject. In September 1993, the Customs General Authorities approved the corresponding project and brought it to the attention of the Central American Customs and Tariffs Council for its approval.

Ruling on Merchandise of Central American Origin. Technical support was given and several studies were completed to establish El Salvador's position throughout the referred project's negotiations. Our support was geared to avoid the introduction of administrative restrictions under the pretext of controlling merchandise origins. In this regard, the essential criteria was a customs union or a common market, as the full application of a common external tariff make it unnecessary the adoption of origin rules, however, this was not understood nor accepted at the regional level. Nevertheless, based on El Salvador's position, and through Resolution No. 6-92 (the ruling on the Central American Origin on Merchandise was approved at the regional level).

Valuation

This matter is ruled by the Central American Legislation on Merchandise Customs Valuation and its rulings. As previously noted, the sanction for false merchandise declaration are minimal, because the law has been impaired by a faulty interpretation of Rule III in the Central American Import Tariffs relative to the application of a fine up to one hundred dollars when

falsities, errors or in-good-faith omissions are evident and which constitute an open door for undervaluation.

On the other hand, there was no programmed control on value declarations, as the work by the corresponding Departments has concentrated on taking care of Customs consultations when doubts exist regarding merchandise prices. For this purpose, the Valuation Department had made available price list and catalogs; these did not cover a good part of the merchandise subject to classification nor were periodically updated. Similarly, the available information had not been input into the computerization systems, therefore, it was not possible to distribute the information among the users. Such situation forced the centralization of these functions as well as delays in the consultations with the obvious repercussion in merchandise clearance on the part of Customs.

The following objectives were pursued through these activities: the preparation of a Valuation rulings project based on the GATT Valuation Code; the training of personnel on the forthcoming reforms; the establishment of a data base with price lists on main import merchandise; and the distribution of average merchandise prices to serve as a reference point in the review of the declarations prepared by the importers.

Legislation on Customs Valuation

The replacement of the in-use Valuation legislation for one founded on the Valuation Code is controlled by the ministers responsible for the Central American Integration and Regional Development, while the editing of the corresponding project is assigned to the pertinent Treaty's Permanent Secretariat. As of the end of the project, major advances on this effort had not been registered, notwithstanding, Mr. Lopez' technical support to the El Salvador delegation in the initial phase of this work.

Training in Valuation Matters

This was one of the subjects in the two courses organized by the MOST Project to which we refer in the Training Section.

Structuring of a General Merchandise Data Bank

The design of a system to build a data bank on a general merchandise price list and specifically, that of vehicles, started on July 1992. On December 1992, input tests were made on the general merchandise mode, based on the consistent data gathered from merchandise declarations while other data sources were equally sought. The system design was complemented with operational training of the Valuation Department personnel. In addition, a Systems Operation Manual was delivered. Due to the lack of equipment and delays in the communications network installation, the systems production and its utilization by the Valuation Department only started in August of 1993. This department produced the price lists for the application of the Passenger Baggage Law for the first time in January 1994,.

Structuring of Vehicle Price List Data Bank

On May 1993, the data input from Kelley Blue Book Market Reports was begun provided by magnetic means, making it trustworthy and not subject to manipulation. There were several difficulties in the execution of this activity, especially, resistance by the personal formerly assigned to vehicle valuation, which based its assessments on various information sources and was susceptible to the arbitrary price handling. Also, the Customs Administration delayed the decision to approve the systems implementation, especially on account of the concerns expressed by the specialist personnel.

In November 1993, the system began partial operation when the old lists were used for the models listed in them. In July 1994, new price lists were issued to replace those traditionally used by the Customs Administration. The employment of new information resulted in complaints on the part of some importers as well as employees as the use of only one resource prevents an incorrect valuation. However, it is important to point out that the information source used does not cover the totality of used vehicles imported in El Salvador, a situation which forces the utilization of other sources.

As indicated in the chapter corresponding to Legal Reform, several activities were directed at the establishment of new rulings on vehicle valuation. Particularly, the utilization of the Suggested Retail Value as reference value and the suppression of discounts based on depreciation had been proposed. This reform was questioned because it means the raising of the tax rate which, according to the interested parties, would put them at a disadvantage with Guatemala which makes use of other information sources such as Tariff rates and different valuation rules.

Valuation System

The valuation system is based on the price lists catalogs as primary source, and alternatively, information on the merchandise declaration which judged by the experts corresponds to normal value. The registered information is stored by chronological transaction order, and values are treated as averages on the kilogram, according to country of origin and merchandise date of purchase. This information can be obtained through an easy application in which the user can compare the declared values on similar products. Likewise, the system supports the control on importers and customs agents whom are classified according their degree of compliance with the law as evidenced in the historical archives on merchandise valuation.

The data bank is structured in the following manner:

- Merchandise Master
- Brands/Marks
- Models
- Values: average, median, by kilogram, declared
- Importers according to NIT
- Customs Agents

- Unit Codes
- Rates index

The vehicle data bank is built as follows:

- Automobile Vehicles Master
- Trademark
- Line
- Model
- Class
- Vehicle Identification Code (VIN)
- Import Tariff Duty
- Tax Rate
- Value: by list and detail
- Depreciation discount

Present situation, conclusions and recommendations. The Customs Administration avails itself of one general merchandise price list data bank and one vehicles list. The first is as yet restricted by the scarcity of information sources, especially of specific catalogs. The vehicles mode is trustworthy but similarly, it does not cover the totality of used vehicles coming into the country.

There have been obstacles in the development of this activity due to the resistance on the part of the personnel previously in charge of valuation and also by the importers: and, because the Customs Administration does not have the budget resources to purchase the information. By using the data bank on vehicles, it has been possible, at least in part, to increase the profits in an 8% annually, and according to projections, this increase will be greater in the next years. It is important, however, to warn that the pressure on the part of the used vehicles importers may influence the acceptance of the new rules, and the distortion of the valuation principles, which would decrease the profits.

With respect to the preparation of a new Valuation Legislation based on the GATT Valuation Code, it is important to point out this is the responsibility to the Central American Economic Integration General Treaty's Permanent Secretariat. In connection with the first negotiations, the MoST project has taken care of the consultations formulated by the national delegation.

Merchandise Classification

The Customs Administration resolutions on the subject of merchandise classification or of any other nature, have not been sufficiently divulged, preventing its uniform application. Likewise, a review program on merchandise declarations and corresponding inspections on the part of the Customs Administration, intended to verify the correct merchandise classification and the application of tariffs, does not exist.

For the purposes of contributing to a better merchandise classification, the MoST project included this subject in two of the three courses it organized and to which reference is made further on. In this way more than one hundred employees were instructed in matters of nomenclature and merchandise classification. This activity was complemented by similar events, dictated in the country as well as abroad by experts from international organizations.

Because of the amount of rulings issued by the Customs Administration in accordance with Rule III in the Application and Interpretation of the Central American Imports Tariff, its compilation and diffusion has been difficult. With the new Customs legislation it will be possible to better spread the Customs Administration resolutions. In effect, and with this in mind, the Organic Ruling foresees the periodic publication of a Customs Bulletin which will make the operation much easier as the Customs Infringement Law reduces the environment for consultations with the Customs Administration.

Also underway were activities concerned with the establishment of a Tax Department for a revision of merchandise declarations and the carrying out of audits on import firms and that of the selective appraisal monitors which will warrant a better control in Customs fees collection.

Investigation and Technical Department

Before 1992, the Customs Administration did not have a Department with the specific function to prevent and/or investigate contraband nor inspection responsibilities of Customs personnel. In fact, contraband control had been under the supervision of the Customs Police which did their work without significant coordination with the Customs Administration. The control of personnel was the responsibility of the Inspection Unit, but this unit did not perform this task.

The MoST Project work plan for 1992 and 1993 considered as priorities all activities geared to the creation of two departments to fulfill these specific functions as well as the training of personnel for this purpose. One of the project's first activities in 1992 was to promote the creation of the Investigations Department for which it offered the services of a short-term consultant. The General Director, however, decided to postpone this matter while police institutions redefined their tasks as they had been responsible for the prevention of customs related transgressions. Later on, it was considered convenient to create such a department through the National Organic Ruling, as in fact it happened.

Regarding the creation of a Technical Department (Inspections) it was deemed convenient not to do it and assign those functions to each of the existent departments. Further, a good part of them will be under the new Customs Regimes Department being considered by the Functional Organic Regulation.

Present situation, conclusion and recommendations. These activities have been completed through the RENCAUCA, which is in force, however, as of the end of the project, not applied.

Notwithstanding, the steps leading to the creation of some slots for the new departments and the training of the old personnel in charge of the collections have been taken. It is not excessive to reiterate the need to have competent and honest personnel performing the collections duties.

Cargo Movement and Merchandise Clearance

In 1991, when the preparatory studies for the MOST Project were carried out, some situations presenting obstacles to the clearance and customs control were detected, among them:

- Customs did not control the unloading of merchandise in the CEPA warehouses not the their release.

- The International Traffic Control system was deficient because it lacked intercommunication between Customs' entrance and exit areas and the Customs custody did not fulfill its commitment.

- Most of the time, the Court of Accounts would intervene and interfere with the merchandise appraisals.

The purpose of these activities is to eliminate the above mentioned obstacles through a better coordination with the work performed by CEPA and the Accounts Court. In addition, direct bank tax payments must be encouraged to secure credit of funds the soonest possible.

Relationship with CEPA

In the period analyzed, the Customs Administration did not carry out any actions geared to intervene with transport vehicles reception and loading taking place in the CEPA warehouses, because it considered that the institution's arbitrary measures and the presence of police units under the Ministry of Finance would guarantee the compliance with the law. Regarding the reception of transport and loading vehicles, the RENCAUCA has provisions which make the CEPA activities subject to Customs authority.

Regarding the registration of load manifests for is inventory control purposes and ultimately, its cancellation, the task was assumed by the SIDUNEA. As of the end of the project, the corresponding monitor was not in operation. However, the systems created by the MOST Project for the Customs Warehouse Control can also be utilized for the CEPA Warehouse Control with the necessary adaptations.

Suspension of the Court of Accounts' intervention

The MoST project carried out technical studies to support the Customs Administration and the Ministry of Finance in the negotiations geared to suppress or regulate the intervention on the part by the Court of Accounts unit in the Customs Clearance process. Unfortunately, it was

unsuccessful despite the fact the matter has been discussed by authorities at the highest level. However, according to CAUCA rules, when establishing procedures for Customs clearance as well as during the design and formulation of merchandise declaration, the RENCAUCA excluded the mentioned unit. In this regard, it must be pointed out that in the auto settlement process there is not need for the overseer's intervention nor any other employee, unless the situation is one that has been selected for further appraisal. In any case, this matter requires the direct intervention of the Minister of Finance and even perhaps the President of the Republic, at the time the New Organic Ruling on the institution is discussed and approved.

Present situation, conclusions and recommendations. In great part these activities have been performed through the inclusion of RENCAUCA rules relative to the subordination of CEPA tasks regarding cargo reception destined to Customs and in fact, exclude the Court of Accounts from the Customs Clearance process. Nevertheless, the implementation of such rules will depend on political decisions being adopted between the involved organizations as well as the establishment of future coordination over these matters.

Merchandise Clearance Computerization and Elaboration of Foreign Trade Data

Before 1991, Customs did not utilize computer systems in customs clearance nor in the control of its diverse activities, resulting in a deficient service and duty evasion. In that year, in the context of a tax modernization process, the government subscribed to an agreement with PNUD directed to the installation of the SIDUNEA, which had as its objective the acceleration of customs clearance, and the adoption of an efficient system for control and negotiation.

The MoST Project activities were to complement the activities carried out by the SIDUNEA in order to extend these services to all administrations and departments within the Customs Administration. Likewise, it tried to gather data on foreign commerce so that the authorities would eventually count with better decision making elements regarding economic matters under consideration.

Customs Clearance

SIDUNEA assumed responsibility for the automatization of the Clearance and control of the imports systems which should have taken place during mid-1993 in the country's main Customs facilities. However, as of the end of the project, SIDUNEA operates by itself and partially in the San Bartolo Customs. At the same time, the MOST Project was committed to prepare the foreign commerce statistics, to automate the merchandise clearance and to establish controls of value declarations.

Elaboration of Imports Statistics

In the first quarter of 1992, and lacking the information which was to be provided by SIDUNEA, a system for the data gathering obtained from merchandise declarations on importation

systems and in all its modalities was developed. By the end of May, the registration of import data was begun as well as the development of systems for the presentation of statistics. From October on, the quarterly, bi-annual and annual information was delivered. On February 1993 this activity was complemented with the export data.

Characteristics. The development of a system under DOS using data bank FOXPRO which also covers all other systems prepared by the MOST Project. To facilitate these processes the information is standardized using the ISO code. In addition, security levels for information access are defined and organized under systems parameters, countries, customs, tax rates, importers and tariff indexes; a second level allows summaries of any of the mentioned data; a third level makes it possible to obtain detailed information.

To support this process, the following data bases are defined:

- Imports and Exports Declarations Master
- Country and place of origin
- Customs
- Continents
- Importers (NIT)
- Customs Agents
- Measurement Units
- Import Tariffs: index, duties, taxes
- Customs systems

To verify information, this system can exchange data with the valuation system, although this option depends data on general merchandise prices is insufficient. Instead, it is being used for vehicles valuation identification and verification.

Present situation, conclusions and recommendations. At present, the Customs Administration has statistics on imports and exports which are delivered with a delay not greater than three months. This information is distributed among the many Ministry of Finance and Customs Administration departments, and is meant to cross useful information applicable in the taxation of firms with control of activities on the personnel responsible for tax settlement and collections.

Training

Before 1992, the Customs Administration, through the Ministry of Finance Training Center (Centro de Capacitación del Ministerio de Hacienda "CECAMH") organized several training courses for Customs personnel under the auspices of international organizations. These activities did not respond to long term programs, but took place when financial support on the part of international organizations was available for experts on Customs matters to conduct courses or seminars which would generally last less than a month.

This Project activity was designed to prepare a training plan for Customs personnel and conduct seminars to prepare teachers on the pertinent subjects who at a future time would be in charge of the annual courses created to update Customs personnel's basic knowledge as well as to prepare candidates for new positions and Customs agents.

Development of the Training Plan

On August and September 1992, short-term advisor César Calvache prepared a Training Plan which was delivered to the Customs General Director and to the CECAMH Director in October of the same year. This plan was structured in three training levels: minimum, for all candidates to new positions; basic, for employees in charge of administrative and operational tasks; technical superior, for the personnel in charge of specialized functions. It also considered activities to improve management personnel, instructors, customs agents and other public institutions officials functions.

To correspond with the three levels, subject matters, programs, duration and student requirements were determined. The plan considers a series of aspects directed at course execution, its improvement and the coordination between the organizations and officials involved in training. Additionally, a resolution project by the Customs Directors was prepared through which the mentioned plan would be approved. In this regard, and although as of the end of the project the Plan had not been formally adopted, it is understood that in practice the CECAMH has taken it as a basis for its work schedules since 1993.

Customs Techniques Course

From October 5 through November 7, 1992 a course was given in which twenty-one Customs employees, two from the Central Reserve Bank and three Customs agents participated. This course included three subject matters: Customs Systems and Procedures (Kyoto Agreement), Valuation and Harmonized and Merchandise Classification Systems. The course was complemented with round table sessions from November 9 to 17 in which students and special guests, the project customs resident advisors, discussed several subjects concerning the main aspects to be considered in a Customs reform.

Seminar on International Agreements Customs Issues

From October 26 through November 13 an activity centered around nineteen employees from several public institutions as well as Customs agents was developed. The courses previously mentioned were discussed but with less depth on account of the specialization and participants' needs. The Course, Seminar and Round Table Sessions were organized by the CECAMH and coordinated by Mr. Calvache, who also lectured two of the courses.

Harmonized System Course

In view of El Salvador adopting in March 1993 the Central American Tariff System (Sistema Arancelario Centro Americano "SAC"), which is a new tariff nomenclature based on the Harmonized System, the General Director requested the auspices of the MoST Project to train personnel in the operation of such system. For this purpose, two courses were developed from March 15 through 26, one in the morning and another one in the afternoon with an attendance of seventy-four employees from the Customs Administration, Customs, Ministries of Finance and Economy and Central Reserve Bank as well as Customs Agents. This activity was carried out by short-term consultant Ramiro Cerón who had been part of the team in the preparation of the SAC Project.

Second Course on Customs Techniques and Procedures

This course took place September 9-16, 1993, and its objectives were to complete the subjects and information given in the first 1992 course. Participants in this event were twenty students from the first course. The course included the following subjects: Customs Systems, Customs Procedures, Taxes, Teaching techniques and Methodology.

Support to other courses and events

Throughout 1994, the Customs resident advisors participated in several courses, seminars, and discussions organized by the Customs Administration and the CECAMH, with the intention to prepare, train or disseminate the new Customs legislation, its procedures and new control systems. In this regard, it is important to point out that the mentioned consultants presented, among others, the following courses and discussions:

- Update of the Salvadoran Customs Legislation, completed in February and March.
- Three seminars on the RENCAUCA, new Procedures and Automated Systems, presented to thirty customs officials and ninety customs agents.
- Seven seminars on the CAUCA and RENCAUCA presented to two hundred customs employees and thirty customs agents, in July and August.
- A program to train Tax Officials which took place in September and October.
- Lectures and discussions on the RENCAUCA, Vehicles Valuation Systems and Procedures presented to production groups, importers and general users of customs services, dictated in the second semester.

Training recommendations

These activities have obtained and surpassed the proposed objectives and goals. In fact, the training has reached all levels of Customs personnel and services users. Likewise, the CECAMH has strengthened its activities in the area which in general terms correspond to the plan prepared by the MOST project. To execute the work schedules the Center already has enough instructors on the different subjects and no longer depends exclusively on foreign experts. Besides, the RENCAUCA contributes to their plan by forcing Customs officials to collaborate with the CECMH in the elaboration of programs and instruction.

Finally, it is important to present the following recommendations:

- From this year on, to make it obligatory to candidates to new posts to pass the examination on the basic course.

- By taking advantage of the scholarships offered for courses abroad by international organizations to intensify the capacitation of instructors, teachers and increase the staff. It is important to avoid the concentration of this benefit on a few officials or the ones who hold seniority.

- The Ministry of Finance and the Customs Administration should earmark funds for the construction of a building equipped for Customs training and to be administered by the CECAMH. It should be located near the Customs Administration installations.

Free Zones Control

One of the main instruments to promote exports are the Free Zones and *Recintos Fiscales* established through Legislative Decree No. 461. Under this system five free zones have been designated in which operate nearly forty firms in addition to one hundred eighty firms who function as recintos fiscales. The control of these firms is under the old Audit Department which has permanently assigned fifty delegates to the various firms beneficiaries of the system.

In fact, these public employees have become part of the firms' staff because through various apparently legal concepts are able to perceive additional income which exceeds the corresponding monthly remunerations. Naturally, they are not concerned exclusively with revenue control, merchandise clearance and inventories but are also in charge of negotiating at Customs imports and exports policies and take care of all those complicated procedures forced upon the users.

In short, there is no control on these establishments nor the fiscal delegates who fulfill the function of administrative aids resulting in a source of corruption and also, of tax evasion. To correct this situation, a number of activities have been put in place to establish control measures centered at Customs and based on the operation of automated systems:

1. The CAUCA, or if such is the case, the National Customs Code contains specific regulations on the new functions of the Free Zone regime that will replace the recintos fiscales. In this regard, it should be advised that these regulations have been questioned by their users of recintos fiscales, as they lose some of the privileges which they had been granted. When the regulations are enforced, as long as the Ministry of Finance does not insist in complying with the users' concerns, the Customs Administration will remove the delegates to such establishments and will begin a tax program with specialized personnel.

2. To this end, and throughout the third quarter of 1994 a training course for the Tax Department personnel is taking place supported in its development by the MOST Project.

3. Within the work plan 1994, the Project developed computer applications to control recintos fiscales.

Present situation, conclusion and recommendations. As of the end of the project, the new measures regarding the control of free zones and recintos fiscales had not been applied, as it awaited the enforcement of the legal reform and training of audit personnel. The legal reform encountered strong opposition on the part of users of recintos fiscales because they considered certain benefits, such as exemptions on machinery imports and above all, the right IVA exemption of the IVA in the purchase of raw materials and their use of domestic services. Also, the employees dedicated to the control of these systems have expressed their resistance to change, particularly as they would stop receiving certain income, which constitute a corruption source and make the customs services significantly more expensive.

Implementation and Adoption of the Customs Clearance System

At the moment, the merchandise clearing is done with the random selection practiced by the overseers with the supervision in charge of the Administrator and the Court of Accounts. This activity entails documents review and in most cases, the physical inspection of merchandise. As a result, Customs clearance lasts one week as average, it is arbitrary and does not guarantee fiscal interests, on the contrary, it promotes administrative corruption. The new regulation considers steps on tax settlement conducted by the importer himself subject to Customs verification. On the other hand, Customs clearance has been carried out with manual procedures and without computerized systems.

The requirement for the application of the previously cited regulating steps, is the creation of an automated system for the random selection of merchandise declaration which would be subject to inspection, and to dictate the corresponding instructives as well as create an automated system for those systems served by the SIDUNEA.

1. In order to simplify procedures and the automatic registration of the merchandise declarations and its selection, a new Merchandise Declaration form was brought to the consideration of Customs authorities in the fourth quarter of 1992.

2. The form was adjusted several times under the supervision of the Technical Associate Director; however, it has not been possible to obtain an authorization to print from the Customs Administration.

3. During 1994, the Project developed a Customs System for El Salvador ("SAES") which would select merchandise declarations subject to inspection as well as Customs merchandise clearings subject to systems and operations but not covered by SIDUNEA.

4. The SAES was ready awaiting the enforcement of the new customs regulation.

5. Among the first activities carried out in 1994 were those concerning the procedures profile for auto-settlement and the criteria to serve as a basis for the selection system.

6. Despite the activity's implicit importance, a Committee in charge of reviewing the criteria was not formed nor decisions taken which would allow the improvement of the SAES and the editing of a respective instructive memo.

Characteristics in the El Salvador Customs Computer System

The SAES is designed with flexible criteria which allows for its adaptation to the procedures ruling needs to be adopted by the government at any given time. The system incorporates several tables used by the other systems at the Customs Administration, and from which the following list has been detailed out: Declarations Master, NIT, countries, freight, measurement units, customs, systems, Central American tariffs, Customs agents, Overseers, different tax calculator modes, special treatment for Central American merchandise, calculating modes for certain merchandise according to their use.

The SAES is composed of the three following modes:

- Auto settlement.

- In line operation to gather real time declarations data, meaning Customs Clearing process without auto settlement.

- In batches, for unautomated Customs under the central scheme for the processing of data gathering to be operational after Customs clearance.

Management Information Design and Implementation

Before 1992, the Ministry of Finance and Customs Administration authorities did not have periodical data on Customs Merchandise Clearance which would allow them to make timely decisions in connection with tax revenues yearly goals or to recommend modifications on foreign commerce regulations or actual revenue control. In fact, the available information prepared by the various departments was not conceived for imports, exports and Customs tax revenues behavior much less regarding the compliance of laws issued at certain times.

The purpose now to attempt to prepare periodical information which would allow the monthly observation of Customs taxes evolution, Customs, imports economic sector, principal merchandise, Customs systems, as well as importer, agent or merchandise clearance employee behavior. Also, indexes for the evaluation of the Customs reform must be prepared. This information is destined for the executive level at the Ministry of Finance, Customs Administration and Customs.

1. In 1994 the design and improvement of the automated system to provide periodic management information to the ministerial and Customs authorities was completed.

2. Additionally, information to be used in decision making regarding changes in rules and tariffs for vehicle importation and other merchandise was prepared.

It must be pointed out that the development of this activity has its limitations, because the corresponding systems which were to be operational with the SIDUNEA information were not available. SIDUNEA could not provide the required data for the system. Also, it was difficult to obtain timely information on account of Customs procedures not being as yet simplified, organized or uniformed.

Present situation, conclusion and recommendations. This activity could only be partially completed because the traditional Customs procedures were not replaced, the new Customs form designed to better gather information has not been adopted and the SIDUNEA support at national level is not available. Given the limitations in computerization equipment and the scarcity of other resources, it would be advisable that the information requirements be subject to a plan previously established.

Control of Imported Merchandise Under Tax Exemptions

Customs has concentrated on the control on merchandise stored in San Bartolo and apparently, on those coming into free zones and recintos fiscales. However, not even in these cases, is the exercised control based on information registered in automated systems control by the Customs Administration. The idea is to design systems which can be applied by the various Customs systems beneficiaries and which would control the holding of foreign merchandise with tax exemption until they are returned abroad or are declared subject to previous compliance with corresponding rules.

1. According to the information provided in the corresponding chapter on duty-free shop systems, a control system is operational since October. A number of activities are put in place to extend its application to other suspended tax systems so that users can adjust their systems to the patterns established by the Customs Administration.

2. A project for a "Users Instructive" to initiate controls was put to the consideration of the Customs Administration, but as of the end of the project, it has not been approved.

3. In 1993, several activities geared to the adoption of measures for the control of the international customs traffic systems, especially relative to the use of electronic precincts which would allow information to be transmitted from Incoming Customs to Exit Customs final destination were carried out. However, these were suspended because the Customs Administration does not consider them to be a priority.

Present situation, conclusion and recommendations. As of the end of the project, activities directed to the adjustment on the part of users to computerized programs meeting the Customs Administration needs in connection with and tax exemptions were being developed, in such a way to permit the application of the same control systems established for the duty free shops albeit with specific variations. Such controls can be applied as soon as the new Customs regulations is in force, especially relative to free zones and recintos fiscales and, as soon as the Audit Department and Customs systems are created and made operational. Regarding International Customs Traffic control systems, the respective activities were suspended as they are not considered a priority.

General Conclusions and Recommendations

Conclusions

In connection with activities dealing Customs Management and Computerization Projects, completed from January 1992 and October 1994, the following conclusions have been reached:

1. Despite the fact that the activities relative to the Customs Legal Reform were considered a priority, the National Customs Ruling issued in June could not be applied because from its start it was subject to the approval and enforcement by the Central American Uniform Customs Code which itself has been subject to the interests put forward in the integration and Customs reform by each country in the region.

2. As of the end of the project, the delays in the Customs Regulations' elaboration, approval and enforcement process have prevented the application of new procedures called upon to simplify the Customs procedures and set up new control systems in the Customs negotiations. Therefore, the results of completed activities in the Customs reform project which would allow for the evaluation of its objectives fulfillment, especially regarding the acceleration of Customs clearance and the improvement of Customs tax collections, are not available.

3. The Functional Organic Regulation is in force since June; however, the steps to reorganize the Customs Administration, especially those geared to the restructuring of its personnel, were taken. In this respect, it is important to reiterate the criteria expressed opportunely to the ministerial authorities, that if the Customs Administration does not count with a new group of professionals in charge of implementation of this reform, the expected results will not be obtained and could turn out to be self-defeating.

4. The advances in computerization matters are important, especially regarding Customs equipment, the formation of a data bank, the control of baggage and duty-free shops systems as well as the building up of exports and imports statistics. However, the foreseen goals have not been obtained due to delays in the enforcement of the new Customs regulation. In addition, the MOST Project computerization activities have not been complemented by those of the SIDUNEA. SIDUNEA suffered delays in its implementation, a fact which will seriously interfere with the new procedures adoption process for Customs Clearance and control.

5. The activities connected with Customs personnel training have exceeded its goals because during its development phase it received the proper and competent support of the Ministry of Finance's Training Center.

Recommendations

So that efforts and resources committed to this date to advance the execution of activities in the Customs modernization project are not lost or diluted, the following recommendations are hereby presented:

1. All activities geared to Customs reform should be considered a priority, and in this regard, the ministerial authorities should directly assume the leadership of same and activate the conclusion of those still pending, especially the issuance of the National Customs Code and its ruling, Customs Infringement Law, Customs Services Rates Law and Customs Personnel Efficiency Incentives.

2. The national government should seek legal formulas to proceed with the replacement and reduction of an important part of the present day Customs staff for which special funds should be assigned. For example, the Customs clearing rates, fines, and the proceeds from merchandise auctions. Said changes should be made by previous qualification and training of new personnel.

3. In the computerization areas, the Customs Administration should as soon as possible examine if the SIDUNEA can easily be adapted to the needs presented by the Customs reform, and if feasible, to go ahead with the required adjustments or, if not, to replace it with another system developed at national level without discarding the experience reached up to now in this activity and the efforts made by the MOST Project.

4. The new Functional Organic Regulation of the Court of Accounts should exclusively contemplate the control Customs tax functions after their settlement and collection, so as not to present obstacles in the implementation of procedures geared to the acceleration of customs clearance.

5. The government should continue with the elimination of Customs exemptions still in force, except for those considered in international agreements.

APPENDIX A
SISTEMA DE CONTROL DE BANCOS

Antecedentes

El Ministerio de Hacienda realiza la recaudación de impuestos de la siguiente manera:

Bancos y asociaciones de ahorro y Préstamo: 66%

Colecturías y administraciones de Renta: 34%

Las transacciones promedio en el sistema bancario son de aproximadamente:

Transacciones mensuales: 55,000

Transacciones del día pico: 16,000

Monto mensual: ¢350 Millones

Dicha recaudación tiene un día pico que corresponde al décimo día hábil de cada mes, ya que en esa fecha se vence el plazo para la declaración de IVA, Retenciones y Pago a Cuenta. Además, de lo anterior existe otro día pico que se da una vez al año y corresponde a la fecha en que vence el pago de declaración del Impuesto sobre la Renta.

Por otro lado, un factor especial que es importante considerar es que la recaudación del IVA se realiza de dos maneras:

Mediante declaración y pago simultáneo: 53%

A través del pago de póliza: 47%

Todos los hechos antes mencionados hacen ver la necesidad de establecer un control adecuado de la recaudación. El control de los ingresos a través de la banca era completamente manual y adolecía de una serie de problemas como los siguientes:

- Cuadre de documentación lento y engorroso
- Información disponible diez días después
- Detección tardía de errores
- Elaboración lenta de informes de caja y de pólizas
- Difícil control de la recepción del pago

Metodología Usada

Para poder atacar el problema se utilizó la metodología RAD (Rapid Aplication Development) mediante la cual se comienza desarrollando un prototipo, el cual puede llegar a ser operativo en poco tiempo. Dicho prototipo va refinando e incrementando su utilidad y tamaño en la medida que es utilizado. Al final se llega a tener en poco tiempo un producto que es bastante apegado a las necesidades del usuario quien ha sido involucrado en el desarrollo del mismo. En el caso específico del Sistema control de Bancos, esta metodología fue complementada con un plan de trabajo que incluyó las siguientes etapas:

- Adquisición de hardware y software
- Elaboración de Prototipos para la Banca y para la Dirección General de Tesorería
- Implementación y refinamiento de prototipos
- Capacitación para usuarios
- Preparación de un equipo de Soporte Técnico

Por otro lado se optó por usar computadores personales, tecnología POS y transmisión de datos vía línea telefónica conmutada. Las tres tecnologías son fáciles de integrar y de proporcionarles mantenimiento, y soporte técnico.

Descripción Del Sistema

Objetivos Del Sistema

El Sistema de Control de Bancos tiene como objetivos los siguientes:

- Proporcionar información oportuna
- Garantizar un control estricto en la recepción del pago
- Agilizar y facilitar el cuadre de documentos
- Detección y corrección oportuna de errores en las transacciones

Descripción Funcional Del Sistema

Básicamente el sistema funciona de la siguiente manera:

1. El contribuyente llega al banco a pagar sus impuestos. Se le recibe el pago y éste es registrado en un computador tipo POS (Point Of Sales).

2. Al final del día se efectúa un cuadre y cierre de transacciones. El cierre consiste en revisar que toda la documentación y dinero recibidos coincida con la información que en el POS se ha registrado. Una vez efectuado el cuadre, se realiza el cierre el cual consiste en la preparación de los datos para que puedan ser transmitidos hacia el Ministerio de Hacienda.

3. Durante la noche, un computador del Ministerio de Hacienda llama telefónicamente a todas las agencias que poseen POS y recupera toda la información de la recaudación del día.

4. Al día siguiente personal de la Unidad de Ingresos Bancarios revisa que todas las llamadas hayan sido completadas. Si existen agencias que no han podido transmitir se establece comunicación con ellas para recuperar la información. Al estar completas se efectúa el posteo de las transmisiones y se actualiza la base de datos.

5. Diariamente los bancos envían la documentación recibida. Esta es cuadrada diariamente en la Unidad de Ingresos Bancarios y se compara contra la información recibida de los POS. Si hay diferencias éstas se investigan y se efectúan las correcciones correspondientes. Además, periódicamente los bancos envían los estados de cuenta de las cuentas corriente o de ahorro con los cuales se efectúa la conciliación bancaria al final de cada mes.

Usuarios Principales Del Sistema

Unidad De Ingresos Bancarios

La Unidad de Ingresos Bancarios es la responsable de administrar el Sistema de Control de Bancos. Está encargada de verificar el cuadre de la información que envía el POS versus la documentación que envían los bancos, así como el desglose y ordenamiento y archivo de los documentos recibidos. Además vigila que las transmisiones de los bancos estén completas y proporciona soporte técnico a los bancos. Cuenta con 8 computadores personales de los cuales una es el servidor de comunicaciones. Todas las tareas antes mencionadas son realizadas por 24 empleados.

Agencias Bancarias

Son los encargados de recibir las declaraciones y pagos de los contribuyentes y a su vez son responsables de la digitación de los datos del pago. También son responsables de efectuar el cuadre y cierre diario y dejar listo el POS para que pueda transmitir datos durante la noche.

Dirección General De Tesorería

Hacen uso de los módulos de consulta y de los reportes que el sistema genera en base a los datos básicos que el sistema posee.

MÓDULOS DEL SISTEMA

El Sistema Bancos está conformado por tres Sub-Sistemas, los cuales en conjunto forman una Aplicación Informática muy útil para el Control de la Recaudación de Fondos por Pago de Impuestos en el país.

El Sistema Bancos contiene los siguientes Sub-sistemas:

1. Aplicación P.O.S.
2. Aplicación De Transmisión De Datos Electrónicos
3. Sistema De Control De Recaudación Bancaria

La combinación de estos tres sistemas da como resultado una integración de todos los procesos que involucran la recaudación de impuestos; desde prestar el servicio de caja al contribuyente hasta formar una cuenta corriente con la que se puede controlar tanto a los bancos como al contribuyente mismo.

Aplicación POS.

El Sistema P.O.S. (Point Of Sale) tiene como finalidad principal **Registrar y Transmitir todas las Operaciones** que involucra la Recaudación de los Fondos percibidos en concepto de pago de impuestos a través del sistema Bancario del país.

La aplicación P.O.S. se ha desarrollado en lenguaje **TCL VER 372 (Terminal Control Language)** y con **Terminales TRANZ 420** que son computadores especiales para sistemas en los cuales es necesario un equipo portátil, práctico, confiable y resistente. Las terminales TRANZ 420 están compuestas por los siguientes Periféricos Incorporados: Impresor Matricial, Cartuchera, Lector de Código de Barras, Puerto Serial, Puerto de Salida para el Modem, Baterías Internas para guardar la información y su Propia Fuente de Poder.

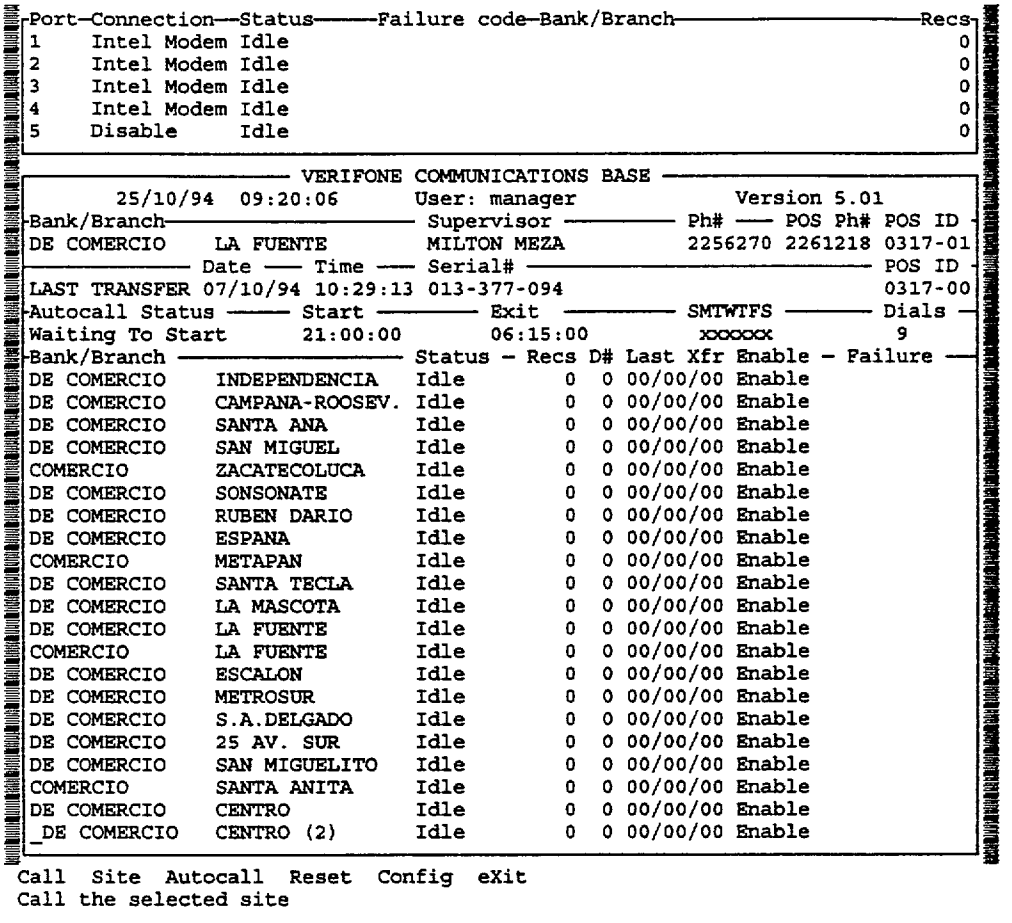
Este sistema es capaz de almacenar hasta 400 pagos por impuestos en su memoria principal y luego mediante un proceso de cierre o cuadre de caja, se puede almacenar hasta 800 transacciones en su memoria de cartucho, donde queda lista para ser transmitida hasta las instalaciones de la Dirección General de Tesorería por medio de Modem (Línea Telefónica). Existen 126 de estas terminales distribuidas en 112 agencias bancarias donde directamente o no se efectúa el cobro de impuestos, esto quiere decir que, cumpliendo con su nombre, están en el punto donde se realiza la operación. El número de POS en cada agencia depende del volumen máximo de transacciones que procesan.

Aplicación De Transmisión Electrónica De Datos

El Sistema de Transmisión de Datos tiene como finalidad principal **Realizar las Transmisiones de todas las Operaciones** que se efectúan en las agencias bancarias donde está instalado el Sistema POS. El Sistema de Transmisión de Datos se ha codificado con lenguaje **DEL** y

funciona bajo el **SISTEMA OPERATIVO D.O.S.**, utilizando para su ejecuión un **COMPUTADOR PERSONAL.**

Este sistema se presenta en la siguiente figura :



```
Port—Connection—Status———Failure code—Bank/Branch————————————————Recs
1    Intel Modem Idle                                                0
2    Intel Modem Idle                                                0
3    Intel Modem Idle                                                0
4    Intel Modem Idle                                                0
5    Disable     Idle                                                0

                    VERIFONE COMMUNICATIONS BASE
      25/10/94  09:20:06      User: manager            Version 5.01
Bank/Branch———————————— Supervisor ———— Ph# —— POS Ph# POS ID
DE COMERCIO    LA FUENTE       MILTON MEZA          2256270 2261218 0317-01
————————— Date —— Time —— Serial# ——————————————————————————— POS ID
LAST TRANSFER 07/10/94 10:29:13 013-377-094                      0317-00
Autocall Status ——— Start ———— Exit ———— SMTWTFS ———— Dials
Waiting To Start      21:00:00       06:15:00        xxxxxxx        9
Bank/Branch ———————————— Status — Recs D# Last Xfr Enable — Failure
DE COMERCIO    INDEPENDENCIA   Idle        0  0 00/00/00 Enable
DE COMERCIO    CAMPANA-ROOSEV. Idle        0  0 00/00/00 Enable
DE COMERCIO    SANTA ANA       Idle        0  0 00/00/00 Enable
DE COMERCIO    SAN MIGUEL      Idle        0  0 00/00/00 Enable
COMERCIO       ZACATECOLUCA    Idle        0  0 00/00/00 Enable
DE COMERCIO    SONSONATE       Idle        0  0 00/00/00 Enable
DE COMERCIO    RUBEN DARIO     Idle        0  0 00/00/00 Enable
DE COMERCIO    ESPANA          Idle        0  0 00/00/00 Enable
COMERCIO       METAPAN         Idle        0  0 00/00/00 Enable
DE COMERCIO    SANTA TECLA     Idle        0  0 00/00/00 Enable
DE COMERCIO    LA MASCOTA      Idle        0  0 00/00/00 Enable
DE COMERCIO    LA FUENTE       Idle        0  0 00/00/00 Enable
COMERCIO       LA FUENTE       Idle        0  0 00/00/00 Enable
DE COMERCIO    ESCALON         Idle        0  0 00/00/00 Enable
DE COMERCIO    METROSUR        Idle        0  0 00/00/00 Enable
DE COMERCIO    S.A.DELGADO     Idle        0  0 00/00/00 Enable
DE COMERCIO    25 AV. SUR      Idle        0  0 00/00/00 Enable
DE COMERCIO    SAN MIGUELITO   Idle        0  0 00/00/00 Enable
COMERCIO       SANTA ANITA     Idle        0  0 00/00/00 Enable
DE COMERCIO    CENTRO          Idle        0  0 00/00/00 Enable
_DE COMERCIO   CENTRO (2)      Idle        0  0 00/00/00 Enable

Call  Site  Autocall  Reset  Config  eXit
Call the selected site
```

Este sistema es capaz de efectuar llamadas telefónicas simultáneas hacia las agencias bancarias en forma automática y/o manual por medio del menú con que cuenta, el cual se encuentra en la parte inferior de la figura anterior.

Como se puede observar en la figura, el sistema de Transmisiones cuenta con los datos de identificación de cada agencia bancaria necesarios para poder comunicarse telefónicamente con cada una de ellas. Además cuenta actualmente con cuatro líneas telefónicas conectadas a un modem cada una, con las cuales se obtiene un 95% de las agencias durante la noche. El 100% las completa un operador al día siguiente durante la mañana. Una vez realizada la transmisión de los datos, esta aplicación realiza en forma automática una consolidación de todas las agencias con la que pudo establecer comunicación. Luego este archivo consolidado pasa a formar parte del sistema de Control de Recaudación Bancaria como el insumo principal de datos.

Sistema De Control De Recaudación Bancaria

El Sistema de Control de Recaudación Bancaria tiene como objetivo principal **Controlar Automáticamente todas las Operaciones** que involucra la Recaudación de los Fondos percibidos en concepto de pago de impuestos a través del sistema Bancario del país.

El Sistema de Control de Recaudación Bancaria ha sido desarrollado con plataforma **NETWARE NOVELL VER. 3.11 y SISTEMA OPERATIVO D.O.S. VER 5.0 EN ADELANTE**; y su codificación se ha realizado usando **FOXPRO/LAN VER. 2.5.** El equipo que se ha utilizado ha sido **Computadores Personales** con características mínimas de memoria como 4 Mb de RAM, Microprocesador 386 SX, 20 Mhz de Velocidad entre otras propias de este tipo de computadores.

Este sistema está formado por cinco grandes módulos que son: CUENTA CORRIENTE, INFORMES, PROCESOS, UTILIDADES y REPORTES. Contienen las opciones necesarias para realizar el trabajo de control de forma fácil y segura; dichos módulos se presenta en la figura 1:

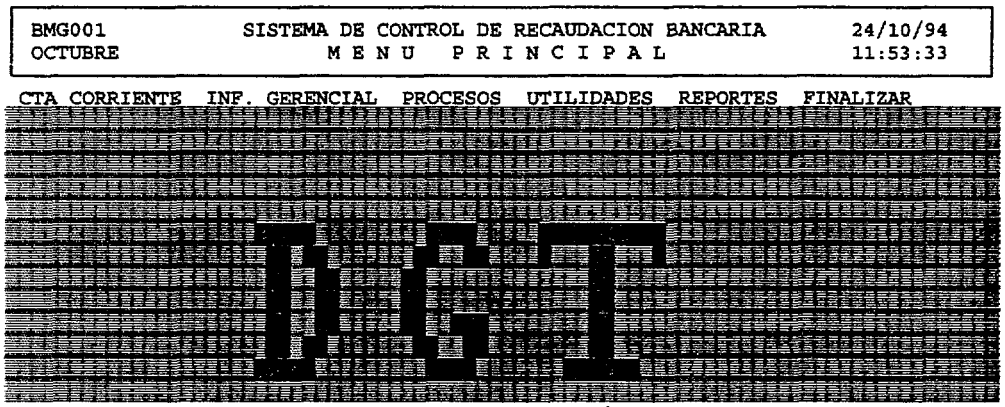


Fig. 1

Modulo Cuenta Corriente. Este módulo esta formado por cuatro opciones las cuales se muestran en la figura 2:

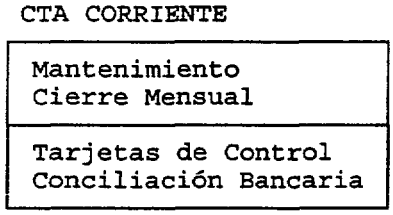


Fig. 2

En este módulo se concentra el procesamiento final de todas las operaciones que se efectúan mensualmente; esto quiere decir que todos los movimientos recibidos a través de las transmisiones y/o digitación manual se convierten en Abonos para las cuentas bancarias respectivas que tiene la

Dirección General de Tesorería en cada Banco. El punto de partida para este módulo es la opción "Cierre Mensual", con la cual se realiza un chequeo de Movimientos cuadrados, los que al final se convertirán en Abonos. Luego se procede a digitar los Cargos provenientes del estado de cuenta del banco para después emitir la "Conciliación Bancaria", la cual automáticamente verifica y cuadra el saldo del banco correspondiente al mes de proceso.

Modulo De Informes. Este módulo esta formado por dos Sub-Módulos, las cuales se muestran en la figura 3 :

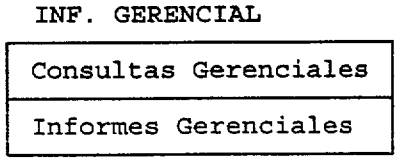


Fig. 3

Sub-Modulo Consultas Gerenciales. Este Sub-módulo esta formado por seis opciones las cuales se muestran en la figura 3.1 :

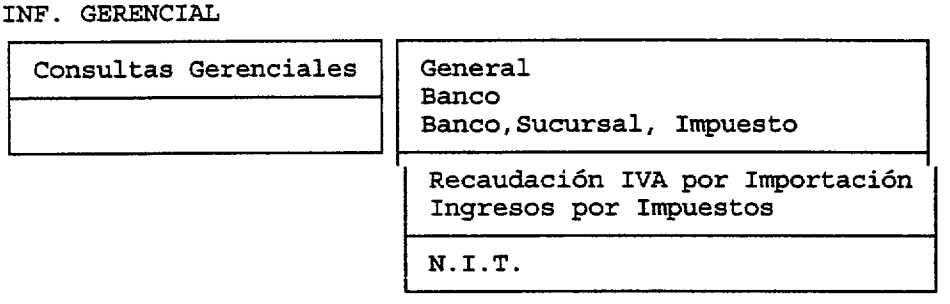


Fig. 3.1

En este Sub-Módulo se encuentran las consultas pertinentes para poder obtener información concentrada y en detalle, si así se desea, sobre la recaudación para un rango de fechas determinadas, con lo cual se logra distribuir el monto recaudado a las unidades que lo soliciten y en la forma más conveniente, dentro de las opciones con que cuenta este Sub-módulo. Así mismo se encuentra una consulta para localizar el pago de un contribuyente por medio del N.I.T.

Sub-Modulo Informes Gerenciales. Este módulo esta formado por tres opciones las cuales se muestran en la figura 3.2:

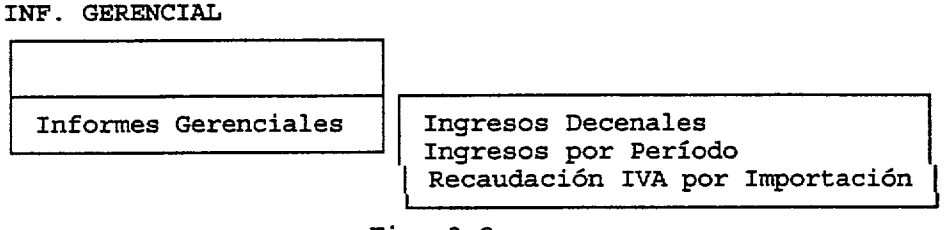


Fig. 3.2

En éste Sub-Módulo se encuentran tres salidas a impresora con las que se puede obtener la información de la Recaudación en forma Decenal y/o por Período, y por otra parte se puede obtener la Recaudación del Impuesto IVA cobrado únicamente por el impuesto de Importación.

Modulo Procesos. Este módulo esta formado por cuatro opciones las cuales se muestran en la figura 3.3:

PROCESOS

Verificación de Datos POS
Carga de Datos POS
Posteo
Transm. Recibidas

Fig. 3.3

Con este módulo se logra el procesamiento de todas las transmisiones realizadas automáticamente desde cada agencia bancaria, que incluye desde una verificación de integridad de las transmisiones, convertir los datos transmitido a formato .DBF y Actualizar estos datos para qué formen los registros de pago efectuados en cada agencia bancaria por los contribuyentes. Esto se efectúa con la opción de Posteo la cual además de lo anterior tiene la finalidad de actualizar los archivos donde se acumula la recaudación con los criterios de (Total por Impuestos) y (Total por Bancos). Por último la opción de "Transm. Recibidas" emite un reporte de las transmisiones realizadas con lo que se controla con cuales agencias bancarias se estableció la comunicación.

Modulo Utilidades. Este módulo esta formado por dos sub-módulos y tres opciones las cuales se muestran en la figura 3.4:

UTILIDADES

Mant. a Movimientos
Notas de Abono
Generar ingresos por Banco Impuesto Reconstruir Índices Chequeo de Integridad

Fig. 3.4

Con la opción de "Generar Ingresos por Banco Impuesto" se logra que el sistema automáticamente acumule los totales de la recaudación por Banco e Impuesto, tomando como base los datos provenientes de las transmisiones. Por otra parte la opción de "Reconstruir Indices" es la típica opción que todo sistema basado en archivos de ordenamiento tiene para mantener en buen estado la información y en forma ordenada. Por último la opción de "Chequeo de Integridad" efectúa un cruce entre los datos del detalle y los acumulados por Banco e Impuesto, con lo que se puede obtener datos acumulados confiables ya que si por algún motivo estos se descuadran existe dentro de el sistema la posibilidad de chequear y modificar este tipo de errores.

Sub-Modulo Mantenimiento A Movimientos. Este sub-módulo esta formado por cuatro opciones las cuales se muestran en la figura 3.5:

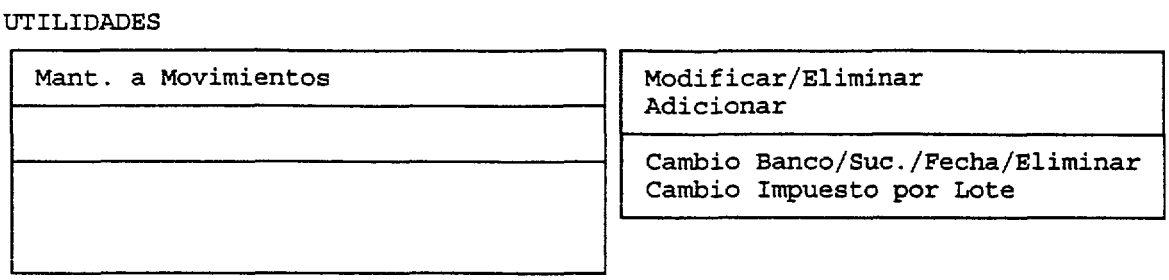


Fig. 3.5

En este Sub-módulo se encuentran cuatro opciones necesarias para incorporar y/o alterar los datos concernientes a las operaciones sobre el pago de impuesto, éste módulo es de vital importancia ya que con él se logra purificar los datos y mantener la base de datos completa.

Sub-Modulo Notas De Abono. Este sub-módulo esta formado por tres opciones las cuales se muestran en la figura 3.6:

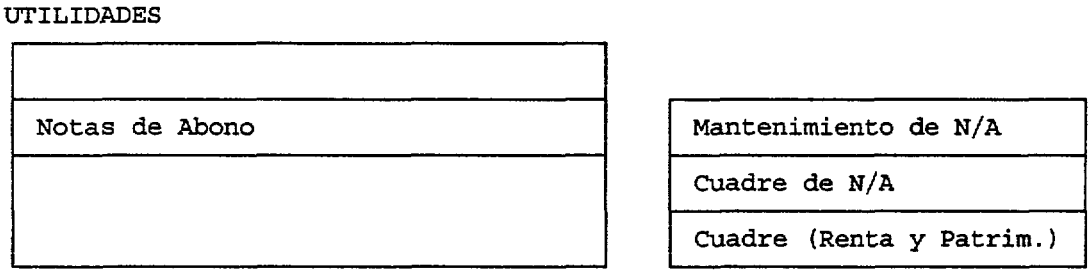


Fig. 3.6

En la opción "Mantenimiento de N/A" se incorporan y/o modifican todas las Notas de Abono provenientes del Sistema Bancario, con lo que se obtiene los datos necesarios para poder efectuar un Cruce de información. Este cruce se efectúa con la opción "Cuadre de N/A" quien es la encargada de chequear automáticamente las diferencias entre los datos transmitidos y los documentos físicos que reportan las agencias bancarias, en el caso que no exista ninguna diferencia en el cruce de información, el sistema automáticamente le asigna un estado de "Cuadrado" a los datos que se están procesando. La opción "Cuadre (Renta y Patrim.)" es similar a la anterior con la diferencia que es para los casos especiales de los impuestos Renta y Patrimonio ya que el cobro de estos dos impuestos se realiza en una misma operación en la agencia bancaria pero para el sistema significan dos operaciones separadas. Una vez que estas dos opciones han determinado automáticamente que no existen diferencias en los registros, estos pasan a ser las operaciones de Abono de la Cuenta Corriente.

Modulo Reportes Este módulo está formado por trece opciones las cuales se muestran en la siguiente figura 3.7:

REPORTES

Informe de Caja
Pólizas Canceladas
Notas de Abono Nota de Remisión Ingresos por impuesto Movimientos del Día Detalle N/A Recaudacion diaria x banco Total de Documentos por Bancos Ingresos por Impuesto(Banco,Sucursal)
Verificación, Carga y Posteo Informe PRT Mensual Tarjeta antes de Cierre

Fig. 3.7

Este módulo permite por medio de sus opciones conocer la información sobre lo recaudado a través de Informes Impresos, los cuales sirven de insumo para los procesos posteriores de Consolidación de Ingresos.

Dentro de éste módulo se encuentra la opción "Verificación, Carga y Posteo", con la cual se controlan las transmisiones diarias que son afectadas por el módulo de Procesos descrito anteriormente. Con la Opción "Informe PRT Mensual" se obtiene un listado de lo recaudado por pago de impuesto de todos los contribuyentes catalogados como Principales Responsables Tributarios (PRT). Para finalizar, la opción "Tarjeta antes de Cierre" es un herramienta para la conciliación bancaria, ya que da una aproximación de abonos y saldos por cuentas bancarias que sirve para conocer el comportamiento de estos montos antes de cerrar todas las operaciones del mes.

Soporte Técnico y Capacitación

Actualmente se cuenta con un equipo de soporte técnico conformado de la siguiente manera:

- dos personas de la Unidad de Ingresos Bancarios que dan soporte a la zona central del país
- dos personas en Administración de Renta de San Miguel que dan soporte a la zona oriental.

- una persona en Administración de Renta de Santa Ana que da soporte al departamento de Santa Ana.

- dos Personas en Administración de Renta de Sonsonate que dan soporte al resto de la zona occidental.

Este equipo se encarga de capacitar personal, resolver problemas, distribuir material, y limpieza de pos.

Actividades Por Realizar

A la fecha el Sistema Control de Bancos se puede considerar terminado, quedando únicamente pendiente de elaborar el Informe de caja. Este informe será elaborado por los analistas programadores de la Dirección General de Tesorería (DGT). Cualquier otro requerimiento de información en un momento específico para usuarios específicos corresponderá elaborarlos también a los analistas programadores de la DGT.

Conclusiones Y Recomendaciones

El sistema de control de bancos cumple a cabalidad los objetivos para los que fue creado y permite tener información oportuna al día siguiente. Sin embargo, es necesario tener en cuenta las siguientes consideraciones:

1. El buen funcionamiento del sistema depende en gran medida del soporte técnico que el Ministerio de Hacienda brinda a los bancos. Debido a esto es importante que el equipo de soporte técnico conste con los recursos necesarios para poder prestar un servicio ágil, eficiente y oportuno. Estos son:

    - Transporte disponible en cualquier momento
    - Disponer de un stock permanente de accesorios para el POS tales como rollos de papel, cintas, cartuchos.
    - Estuche de herramientas simple tales como tenazas, desarmadores, etc.
    - Copias de manuales de operación

2. Debido a la alta frecuencia de rotación de personal en los bancos, la capacitación hacia ellos debe ser permanente y eminentemente práctica. Por otro lado, los bancos deben siempre disponer de los manuales de operación y capacitación actualizados, para que ellos mismos a su vez sean capaces de capacitar a sus empleados. Para poder realizar en forma adecuada la capacitación, debe disponerse de las facilidades didácticas necesarias tales como:

    - POS y extensiones eléctricas para poder efectuar las prácticas

- Manuales de Operación y de práctica
- Personal de Soporte Técnico para poder impartir la capacitación
- Material de apoyo tales como transparencias.

3. Es muy importante considerar el crecimiento en el volumen de transacciones para evitar la saturación del sistema. Para esto debe tomarse en cuenta lo siguiente:

   - La capacidad de almacenamiento de los POS.
   - La cantidad máxima de transacciones que cada agencia puede procesar diariamente.
   - La capacidad máxima de la Unidad de Ingresos Bancarios para poder procesar las transacciones.
   - El tamaño y crecimiento de la base de datos completa de bancos. Actualmente el la Base de datos del año 1994 consta de 240 Megabytes y crece a un ritmo aproximado de 25 Megabytes por mes. Debido a lo anterior es recomendable considerar el mantener en línea únicamente los registros de uno o a lo sumo dos años.

4. Para cualquier impuesto nuevo que se decida ser pagado en la banca debe considerarse cuidadosamente que su correspondiente día pico no coincida con otros días pico ya existentes, ya que podría llegar a ocasionar una saturación, tanto en la capacidad del sistema financiero como en la capacidad misma del Hardware instalado y podría hacer colapsar el sistema completo.

5. El Sistema de Control de Bancos tuvo como beneficios la eliminación de documentos redundantes, tales como el Recibo Único de Ingresos (RUI). Sin embargo, para garantizar un verdadero control en la recepción del pago es necesario que cada agencia bancaria entregue al contribuyente el detalle impreso del pago que genera el POS. Por otro lado hay que considerar que para algunas agencias que manejan grandes volúmenes de transacciones sería necesario proporcionar POS adicionales para efectos de agilizar sus operaciones.

6. Para un correcto funcionamiento del los POS, es necesario que éstos reciban un periódico mantenimiento preventivo por parte de personal especializado. Esto permite que los POS funcionen mucho tiempo si tener fallas.

7. Es necesario que la DGT estructure una unidad de Infórmatica con el fin de que sea ésta la que dé soporte al Sistema Control de Bancos así como al resto de los sistemas mecanizados de la DGT. Además deberá satisfacer los requerimientos informáticos presentes y futuros de la DGT.

8. El sistema de bancos fue diseñado e implementado como un sistema de control de recaudaciones independientemente del lugar en que éstas fueron recibidas. Para el caso se tiene POS instalados en diferentes bancos, diferentes agencias y también en las Colecturías PRT y Acajutla. Esto permite que se puedan adicionar al sistema tanto agencias como colecturías así como nuevos impuestos. Sin embargo en el caso de

colecturías es recomendable que éstas se adapten al esquema y controles ya existentes en el Sistemas de Bancos. De esta manera la incorporación de ellas sería fácil y rápida.

APPENDIX B
SISTEMA DE RENTA Y PATRIMONIO

Antecedentes

El Proyecto de Modernización del Sistema Tributario (MoST), en su área de sistematización, fue inicialmente concebido como un proyecto con tres componentes básicos, así : IVA, proyecto que se encargaría de diseñar, programar e implementar los Sistemas necesarios para un adecuado control del Impuesto al Valor Agregado; ADUANAS, proyecto, que al igual que el Proyecto IVA, se encargaría de diseñar e implementar sistemas para la Dirección General de la Renta de Aduanas, sistemas que apoyarían en la gestión de dicha Dirección, y finalmente el tercer componente del Proyecto MoST, era la identificación de Proyecto Pilotos que luego de su implementación fortalecerían la gestión del Ministerio de Hacienda.

Con esto en mente, se formo el grupo de trabajo de Proyectos Pilotos e inicialmente se comenzó por realizar una investigación al interior de las Direcciones de Impuestos Internos y Tesorería. Producto de estos diagnósticos, se identificaron varios proyectos piloto potenciales para su mecanización. Entre los proyectos piloto identificados, se pueden mencionar:

- Sistema de Control de Recaudación Bancaria. Dirección General de Tesorería.
- Sistema de Control del Registro Fiscal de Vehículos. Dirección General de Impuestos Internos
- Sistema de Renta y Patrimonio. Dirección General de Impuestos Internos.
- Sistema de Registro Único de Contribuyentes. Dirección General de Impuestos Internos, entre otros.

Metas

El trabajo en el nuevo sistema del Impuesto sobre la Renta y el Patrimonio se inició en marzo de 1993. El proyecto ha sido un ejemplo del uso de la filosofía del desarrollo de aplicaciones que utiliza el Proyecto MoST. Los usuarios claves fueron identificados, un comite de usuarios fue creado y el usuario se ha visto involucrado en todo momento en el desarrollo del nuevo sistema. Creemos que el sistema refleja cuidadosamente los requerimientos definidos por el Usuario.

Dentro de las Metas fijadas para el Sistema de Renta, podemos mencionar:

- El Sistema de Renta y Patrimonio para el Ministerio de Hacienda, fue creado con la meta de mover la funcionalidad del sistema existente en el Mainframe a un ambiente de Redes de Computadoras, esto en lugar de reprogramar el sistema existente en el Mainframe para procesar las nuevas formas de declaraciones introducidas para el ejercicio 1992. Esta meta ha sido cumplida.

- Muchos años de experiencia con el Sistema de Renta desarrollado en el Mainframe, mostró que la digitación de las declaraciones de Renta llegaba a tomar hasta un año y medio de trabajo para lograr que las declaraciones del ejercicio pudieran estar completamente digitadas. El nuevo sistema basado en Redes de Computadoras ha permitido que la digitación de las declaraciones se completara en aproximadamente 7 meses para el Ejercicio 92 y se ha logrado reducir a 4 meses para el Ejercicio de 1993.

- La digitación de las declaraciones del ejercicio 1993 se realizó en un tiempo aún mucho menor, debido a que la digitación del ejercicio 1992 se realizó cuando los sistemas y los procedimientos estaban aún en desarrollo.

- En adición a la mayor celeridad en la entrada de datos, los usuarios claves ahora tienen la capacidad de especificar y recibir reportes que satisfacen a cabalidad sus requerimientos.

A continuación se presenta un cuadro en donde se comparan las cualidades del Sistema de Mainframe anterior y el nuevo Sistema basado en Redes de Microcomputadoras.

Característica	*Sistema Mainframe*	*Sistema Microcomputadoras*
Procesamiento Integral del Formulario	No	Si
Tiempo de procesamiento de Declaraciones	15 meses	4 meses
Procesamiento de 90,000 declaraciones de Renta al año	Si	Si
Procesamiento de 6,000 declaraciones de Pago a Cuenta mensuales	No	Si
Procesamiento de 6,000 declaraciones de Retenciones mensuales	No	Si
Procesamiento de 35,000 Mandamientos de Ingreso de Renta y Patrimonio	Si	Si
Confiablilidad de la Información	Baja	Alta
Módulo de Consulta Integrada	No	Sí
Desarrollo de nuevos requerimientos	Lento	Rápido
Documentación disponible y actualizada	No	Sí

El Sistema

A continuación, se enumeran y describen de manera breve los módulos con los que actualmente cuentan los Sistemas de Renta y Patrimonio/Mandamiento de Ingreso:

Módulo para la captura de Declaraciones de Renta y Patrimonio/Mandamientos de Ingreso/Declaraciones de Pago a Cuenta/Declaraciones de Retenciones. Este módulo es el que permite que la información reflejada en las declaraciones de Renta sea digitada en el computador. Cabe hacer mención que dicho módulo cuenta con la lógica necesaria para minimizar los errores cometidos por el digitador. A la vez, este módulo permite el ingreso de declaraciones modificatorias, sucesiones, extemporáneas, ejercicios especiales y declaraciones amparadas al decreto de Amnistía. El mecanismo de entrada de datos es similar al de otros sistemas ya desarrollados.

Módulos de Control de Calidad. Este módulo permite realizar un control de calidad a las declaraciones digitadas, detectando de esta forma cualquier tipo de error de digitación. Este control de calidad permite que la información a ser actualizada en la base de datos sea en lo posible una imagen fiel de la declaración presentada por el contribuyente.

Módulos de Actualización de la Base de Datos. Este módulo es el que efectivamente traslada la información de los lotes de digitación a la Base de Datos final. Este módulo cuenta con chequeos de integridad para verificar la consistencia interna de la Base de Datos.

Módulo de Consulta Integrada. Este módulo permite el acceso a las declaraciones procesadas por medio de diferentes llaves de acceso (número de folio, NIT, nombre). Esta consulta refleja tanto las declaraciones presentadas por el contribuyente, así como los pagos efectuados por este contribuyente en una sola consulta. Otros datos reflejados son los datos del cheque de devolución que el contribuyente ha recibido por parte de la administración.

Módulo de Cheques de Devolución. Módulo encargado de la generación de cheques de devolución de aquellas declaraciones que no presentan inconsistencias de fondo. A la vez este módulo procesa las devoluciones generadas por una declaración modificatoria y a la vez verifica que los cálculos de multas por presentación extemporánea hayan sido aplicados de manera correcta.

Módulo de Modificatorias En-Línea. Este módulo permite la corrección de errores cometidos por el contribuyente a la hora de llenar su declaración. Este módulo fue concebido a trabajarse de manera "en-línea", lo que significa que las correcciones a las declaraciones se efectúan en una ventanilla habilitada y con la presencia del contribuyente, con el objeto de aclarar o despejar cualquier duda en lo referente a la declaración del interesado.

Módulo de Reportes. Se ha efectuado la programación de una gran gama de reportes, que van desde reportes destinados a Contabilidad Gubernamental hasta reportes de carácter operativo a ser utilizados por la Dirección y los mandos medios. Cabe hacer mención de que el sistema cuenta con reportes orientados a cobranzas, en los cuales se reflejan aquellos contribuyentes que poseen algún pago pendiente del Impuesto Sobre la Renta. Esto se logra integrando la información del Sistema de Renta y la información del Sistema de Mandamientos de Ingreso.

Estas, entre otras, son las funciones que el Sistema es capaz de realizar a la fecha.

Capacitación

Una vez el Sistema de Renta fue finalizado, en su etapa de entrada de datos, se brindo la capacitación necesaria al grupo de digitadoras de la DGII. Dicha capacitación se ha venido realizando cada vez que nuevos módulos han ido adicionándose al Sistema.

Además, de la capacitación brindada al personal operativo del Sistema, se ha brindado capacitación al Personal Técnico de la Unidad de Informática de la Dirección General de Impuesto Internos. Dicha capacitación consistió en destacar uno de los técnicos de la Unidad de Informática durante 3 meses a las instalaciones del Proyecto MoST y que dicho técnico se incorporara a la labor de mantenimiento y desarrollo del Sistema.

Producto de dicha capacitación ha sido que actualmente la DGII cuenta con personal de su propio staff que está en capacidad de dar mantenimiento y desarrollar nuevas aplicaciones relacionadas con el Sistema de Renta.

Documentación del Sistema

Actualmente, el Sistema de Renta cuenta con un Manual Completo del Usuario, en donde se describe todas y cada una de las opciones del Sistema. Dicho manual ha sido elaborado en medio magnético con el objeto de facilitar su periódica actualización. Además, se cuenta con la documentación del Modelaje de la Base de Datos en donde se detallan todos y cada una de las entidades involucradas en el Sistema. Dicho modelaje ha sido realizado utilizando la herramienta CASE Visible Analyst. Además se ha incorporado a este modelo el estándar de verificación de integridad de Base de Datos generado por técnicos del Proyecto MoST.

Por último, se cuenta con un Manual de Referencia Técnica en el cual se describe el Sistema a nivel de menúes y se describe de forma gráfica los principales procesos que el Sistema desarrolla.

Actividades Por Realizar

A la fecha, se encuentra listo para su aprobación el nuevo juego de formularios para la declaración de Renta. Actualmente, existen 4 tipos formularios distintos para la declaración del Impuesto de Renta: Formulario 1, para Personas Naturales, Formulario 2, para Personas Naturales con Rentas Diversas, Formulario 3, para Personas Jurídicas y el Formulario 8, o Solicitud para la Devolución del Impuesto sobre la Renta. Se ha diseñado, por parte de un comite conformado por Asesores del Proyecto MoST y personeros de Impuestos Internos el Formulario Único de declaración de Renta que combina los 4 formularios mencionados anteriormente. Dicho formulario presenta varias cualidades, a saber:

- Se elimina la sección de Patrimonio, debido a la derogación del Impuesto.

- El formulario podrá ser completado por el Contribuyente de una manera más sencilla que los formularios anteriores

- Su presentación y distribución es mucho más amigable para el Contribuyente y para la digitación del mismo. Se espera que dicho formulario reduzca significativamente el tiempo de digitación.

- Se ha diseñado un anexo digitable, en donde el contribuyente declarará las rentas percibidas en concepto de Utilidades Gravables obtenidas por un socio de una empresa

- Se ha diseñado un anexo digitable, en donde el agente retenedor deberá declarar un detalle del monto total de retenciones efectuadas a sus empleados en el ejercicio.

El cambio en el formulario y la creación de los dos anexos descritos, implica realizar las siguientes actividades:

- Mantenimiento al Módulo de Captura de Datos y Validación

- Modificación a los programas actuales de consulta de la información de la Base de Datos.

Estas actividades son de gran prioridad, ya que de no estar preparados a principios del siguiente año, podría esta ser causa de un retraso significativo en el procesamiento de las declaraciones del Ejercicio 1994. Además, existen otras dos grandes actividades todavía pendientes del Sistema de Renta, siendo estas:

- Implementación de un Módulo de Fiscalización el cual será el encargado de generar información para alimentar los diferentes planes de fiscalización que la Dirección de Impuestos Internos generará a partir de la información registrada en el computador. Este módulo debería considerar la generación de informes en base a parámetros fijados por los Usuarios (ej.: índices por sector económico, inconsistencias entre montos declarados en Pago a Cuenta/Retenciones, planes de omisos basados en información recopilada de los distintos formularios, cruces con IVA/Aduanas, etc.)

- Implementación del Módulo de Cuenta Corriente, módulo que consistirá de Reportes/Consultas que contemplen las diferentes transacciones que sobre el Impuesto de Renta se realizan, por ejemplo, tasaciones, multas, informes de morosos, pagos a plazo del Impuesto, etc.)

Conclusiones y Recomendaciones

Para finalizar, en base a la experiencia que hasta la fecha se ha tenido con el Sistema de Renta y Patrimonio, se hace necesario enumerar las conclusiones y recomendaciones que a nuestro juicio deberían ser implementadas.

1. Como ya se mencionó anteriormente, el Sistema de Renta y Patrimonio es uno de los de mayor importancia dentro de la Administración. Por lo tanto, se hace necesario seguir brindando el mismo apoyo decidido por parte de los mandos medios y superiores que hasta la fecha se ha dado a este sistema.

2. De la experiencia del Ejercicio 1992/93, se hace necesario brindar mayor atención a las áreas que se han detectado podrían experimentar algún tipo de mejora. Estas áreas a nuestro criterio son las siguientes:

   - Despacho de información al área de digitación. En la actualidad se efectúa una revisión y codificación de la declaración a la hora de recepción de la misma en las sucursales bancarias designadas para la recolección de las declaraciones. Posteriormente estas declaraciones son enviadas a la Unidad de Registro y Control de la DGII, en donde nuevamente son revisadas por personeros de la DGII y finalmente paqueteadas para su envío a digitación. Esta última revisión, genera un retraso en el envió de información a digitación, por lo que fuertemente sugerimos que esta segunda revisión sea eliminada o en todo caso agilizada con el objeto de evitar el "cuello de botella" de la revisión.

   - Digitación de la declaración. Si bien es cierto el volumen de digitación combinado (IVA, Renta) es elevado, creemos que debería realizarse un estudio concienzudo a objeto de minimizar el número de declaraciones de Renta y Patrimonio "pendientes de digitar".

   - Agilización del proceso de Posteo y Cheques. En la actualidad, el área de operación de Informática DGII cuenta con las herramientas para efectuar posteos y emisión de cheques. Por lo tanto, sugerimos que dichas actividades se realicen de manera periódica (1 vez a la semana), con el objeto de generar cheques de devolución a la brevedad posible.

APPENDIX C
SISTEMA DE CONTROL FISCAL PARA LA CIRCULACION DE VEHICULOS

Introducción

Este anexo presenta una descripción de las actividades desarrolladas en el análisis, diseño e implementación del sistema de Control Fiscal Para la Circulación de Vehículos, así como el estado actual del sistema, su operatividad y los logros alcanzados con su implantación. También se describen las actividades que quedan pendientes por realizar, para garantizar la estabilidad permanente del sistema.

Antecedentes

Registro Fiscal de Vehículos (RFV), es el departamento de la Dirección General de Impuestos Internos encargado de administrar el control del impuesto de los derechos de circulación de vehículos. Este departamento estaba ubicado en las oficinas del Ministerio de Hacienda conocidas como las Galeras.

El departamento contaba con infraestructura inadecuada para desarrollar sus labores: poca ventilación, no ofrecía seguridad alguna para el equipo de cómputo instalado, área de atención al público reducida, etc. El departamento se auxiliaba con un sistema computarizado de información, el cual ya no cumplía con las demandas de RFV.

El Ministerio de Hacienda, a través del proyecto MoST, comenzó a finales de 1993 la modernización de su sistema de Control Fiscal para la Circulación de Vehículos. MoST presentó una propuesta de un prototipo básico operativo a la Jefatura de la División de Registro y Control. Dicha propuesta fue aprobada y se comenzó el desarrollo del sistema.

El prototipo seria desarrollado en tres etapas principales:

- Refrendas (San Salvador e Interior del País)
- Matrículas en Aduana Terrestre
- Trámites en Registro Fiscal de Vehículos

La propuesta inicial contemplaba la implantación del módulo de Trámites en Registro Fiscal a finales de marzo de 1994, pero se estimó de conveniencia iniciar con el módulo de Matrículas. Este debería de contemplar además la mayoría de los otros trámites que se consideraban en el módulo de Trámites en Registro Fiscal de Vehículos.

Debido a problemas de tipo administrativo, la implantación de este prototipo en la Aduana Terrestre se hacía dificultosa, ya que monitorear el comportamiento del sistema se volvía

complicado, debido a la distancia que se encuentra la Aduana Terrestre de las Tres Torres. Considerando todos estos inconvenientes, se decidió instalar este primer prototipo de matrículas en Las Tres Torres, y posteriormente instalarlo en la Aduana Terrestre.

El módulo comenzó a operar a principios de abril 1994, como se había planeado, y posteriormente con la experiencia ganada, se procedió a refinarlo y completarlo con el objetivo de trasladar en julio 1994 todo el departamento de Registro Fiscal de Vehículos a las Tres Torres.

Sistema Anterior

Registro Fiscal de Vehículos contaba con un sistema mecanizado para el desempeño de sus funciones. Este sistema fue desarrollado para Mainframe en lenguaje CSP/SQL. El sistema operaba de forma BATCH; es decir, el procesamiento de documentos se hacía en forma diferida a la presentación del trámite. Se contaba para ello con una unidad de procesamiento de datos. Esta unidad empleaba aproximadamente a 7 digitadoras, las cuales realizaban todas las labores de operación del sistema. Se realizó una investigación sobre la funcionalidad y confiabilidad del sistema, detectándose una serie de problemas, los más significativos pudiéndose resumir así: el sistema no tenía una administración confiable de accesos a las diferentes opciones del mismo. Se encontró que las digitadoras tenían capacidad a nivel de accesos de modificar características de un vehículo. De hecho, se comprobó que en algunos casos se valía de esto para realizar operaciones fraudulentas en el sistema.

La capacidad de procesamiento, de la unidad con que contaba RFV, no permitía generar un tiempo de respuesta aceptable a los tramites solicitados por los contribuyentes, el tiempo promedio de respuesta era de 3 meses, fomentando esto el fenómeno de la corrupción. Además la burocracia administrativa, la falta de control de documentos, contribuían al atraso en la resolución de los tramites.

Existía un atraso en la grabación de pagos de la refrenda mensual, atraso de hasta un año y medio en la digitación de estos, en algunas ocasiones el atraso fue tan grande que se decidió "botar" los documentos que correspondían a un periodo de refrenda de un año para lograr avances en la digitación del periodo siguiente.

Había una desactualización en la base de datos de RFV de los vehículos vendidos por las casas distribuidoras. Este fenómeno se generó debido a que la DGII delegó en las casas distribuidoras la asignación de números de placa, y además entregó las especies correspondientes (Placa y Tarjeta de Circulación) para vehículos nuevos, debido al mal servicio que RFV brindaba. RFV asignaba a cada casa distribuidora un lote de números de placa y un lote en igual cantidad de tarjetas de circulación para que ellos las administraran. La documentación de matrícula para estos vehículos llegaba a RFV a veces con atraso de un mes después de vendido el vehículo, y si consideramos los problemas de procesamiento de RFV, se hacia imposible el poder procesar esta información, llegando a haber hasta 5,000 vehículos nuevos sin registrar.

Metas

En la etapa de análisis del sistema, el equipo de trabajo del Proyecto MoST, en conjunto con los usuarios de la DGII, trataron de definir los requerimientos que debería de cumplir el nuevo sistema. Sin embargo, es importante destacar que los usuarios directos del sistema no tenían claro los requerimientos específicos del nuevo sistema, siendo una tarea dificultosa el determinar el alcance operativo de la nueva aplicación. No obstante, sí se lograron identificar claramente los objetivos básicos que debería cumplir el sistema. Estos se detallan a continuación:

1. Seguridad En El Acceso Al Sistema: El sistema que se utilizaba en el Mainframe carecía de una seguridad mínima para su operación, no existiendo un módulo de que permitiera administrar los diferentes accesos de operación del sistema.

2. Mejorar el tiempo de Respuesta al contribuyente: Bajo el sistema de Mainframe, el tiempo de respuesta al contribuyente era de 2 y hasta 3 meses para resolver un tramite.

3. Eliminar la corrupción generalizada en RFV: La falta de controles tanto administrativos como informáticos, era la causa que propiciaba este fenómeno.

4. Control de Especies (Tarjetas de Circulación y Placas): Otra de las deficiencias graves del sistema Mainframe era la falta de control de las tarjetas de circulación emitidas y la asignación de números de placa.

5. Incorporación de Vehículos de Distribuidoras y Las Motocicletas (80 % no estaban registradas).

Sistema Actual

En Registro Fiscal de Vehículos (RFV), se encuentran básicamente tres tipos de tramites los cuales comprenden la actividad de este departamento. El sistema ha sido desarrollado para cumplir con este requerimiento. La descripción de ellos se presenta a continuación:

- **Refrendas:** La refrenda se define como el impuesto anual de derecho de circulación de un vehículo.

- **Matrículas:** Es el registro inicial de un vehículo, en el Departamento de Registro Fiscal de Vehículos.

- **Modificaciones:** Cualquier trámite que implique cambiar las características o el propietario de un vehículo (Traspasos).

El sistema actual comprende tres etapas básicas de operación, las cuales permiten atender los tipos de trámites mencionados anteriormente:

- Recepción de Trámites
- Revisión y Verificación (Aprobación o Rechazo)
- Entrega de Tarjeta

Etapa de Recepción:

La etapa de recepción comprende la atención al contribuyente con un sistema en línea. Cada ventanilla de recepción cuenta con un computador PC conectado a una red. Además, cuenta con un impresor para generar mandamientos. De esta forma, es posible dar ingreso al sistema a la solicitud de trámite, que el contribuyente presenta.

Etapa de Revisión y Verificación:

Esta comprende la revisión de los documentos presentados por el contribuyente. Esta revisión es apoyada por una consulta en el sistema para la verificación de los datos del vehículo que el contribuyente desea tramitar. Este proceso permite la aprobación o el rechazo de un trámite de manera más ágil, ya que el sistema cuenta con la información necesaria de un vehículo como para determinar si un trámite puede ser fraudulento o no.

Etapa de Entrega:

El proceso de trámite termina con la entrega de la tarjeta de circulación respectiva. El contribuyente se presenta a la ventanilla con su mandamiento pagado. El encargado de ventanilla consulta en su terminal si el trámite ya ha sido aprobado; si es así, procede a imprimir la tarjeta y ésta es entregada al contribuyente.

Existen también otros procesos intermedios. Uno es la digitación de un nuevo registro, que se efectúa posterior a la recepción del trámite de matrícula y antes de la Etapa de Revisión y verificación. Otros procesos y herramientas de apoyo a las tres etapas mencionadas son la grabación de pagos de la Refrenda masiva, la entregada en las Administraciones de Renta en el interior del país, pantallas de mantenimiento a los registros del sistema, el proceso de emisión masiva de la refrenda mensual, la consulta de características de un vehículo, así como de su cuenta corriente, y el procesamiento de trámites en forma "BATCH", como medida de contingencia para atender al público si el sistema sufre una caída. La idea es recibir las solicitudes de trámite y procesarlas posteriormente, cuando se haya restablecido el sistema.

A continuación se presenta una breve descripción de las opciones con las que cuenta actualmente el sistema:

Configuración de Arranque y Acceso al Sistema

El arranque inicial del sistema muestra una pantalla en la que se describe información general para verificación del usuario. Los datos que se muestran son:

- Fecha y Hora de Server
- Cola de Impresión y Server
- Usuario y Hora de Conexión

Una vez se confirma los datos mostrados, el sistema sincroniza fecha y hora de la estación con el server y solicita verificación de clave de acceso. Esta clave es la misma que el usuario utiliza para iniciar sesión en Netware. Al verificar el clave de acceso, si después del tercer intento no se ha digitado la clave correctamente, el sistema finaliza.

Selección de Impresor

10 LOCAL MANDAMIENTO 1 => VENTANILLA 1
11 LOCAL MANDAMIENTO 1 => VENTANILLA 2
12 LOCAL MANDAMIENTO 1 => VENTANILLA 3
13 LOCAL MANDAMIENTO 1 => VENTANILLA 4
14 LOCAL MANDAMIENTO 1 => VENTANILLA 5
15 LOCAL MANDAMIENTO 1 => VENTANILLA 6 (ASISTENCIA)
16 LOCAL MANDAMIENTO 1 5
20 LOCAL TARJETAS
21 TARJETAS No 1

Como parte del acceso inicial al sistema, se solicita la selección del impresor a utilizar. Esto está relacionado con el puesto de trabajo desde donde se está accesando el sistema.

El sistema controla su propio grupo de impresores. Cada tipo de impresor posee funciones propias de control, tales como la ubicación, el control de secuencia de números de formulario que imprime y el tipo de formulario que imprime.

Se definen tres grupos de impresores:

a) Mandamiento
b) Tarjeta de Circulación
c) Varios

Esta pantalla solo es presentada al usuario si tiene accesos necesarios en su perfil de seguridad.

El Menú Principal/Módulos

TRAMITES
REGISTRO

MANTENIMIENTO
EMISION
CONSULTAS
PROCESOS
UTILIDADES
FIN

La pantalla principal del menú del sistema muestra los diferentes módulos con los que el sistema cuenta. La descripción general de cada uno de ellos se describe a continuación:

- **Trámites**. Dispone de las opciones necesarias para completar el ciclo de entrada y salida y que comprenden: recepción/emisión de mandamientos, aprobar/rechazar trámites, efectuar cambios, y emitir tarjeta de circulación.

- **Registro**. Diferentes opciones para la incorporación de registros, incluyendo el ingreso de datos para un vehículo que se registra por primera vez, el ingreso de datos de vehículos de los cuales no existe registro debido a deficiencias del sistema anterior, la eliminación y reasignación de placa, etc.

- **Mantenimiento**. Comprende diferentes opciones de mantenimiento a las diferentes tablas del sistema (Movimientos, Combustible, Pertenencia, etc.), así como a datos genéricos de características, inventario de placas (disponibilidad), personal autorizado para revisión y verificación, etc. Este módulo comprende también la administración especializada de la matriz de requisitos. Esta matriz implica un manejo de varios requisitos para cada tipo de placa, dependiendo del tipo de trámite. También considera el manejo de excepciones, en caso que exista, cuando se combinan varios trámites en una solicitud. Por ejemplo, "Fotocopia de tarjeta de circulación" es requisito para "Traspaso", pero es excluyente cuando la solicitud incluye "Matrícula" y "Traspaso", no así el caso del requisito "Documento de compra/venta".

- **Emisión**. Permite la emisión de diferentes documentos, como: Tarjeta de Circulación, Certificación de Características, Reposición/Eliminación de mandamientos, Recibo de devolución de placas, etc.

- **Consultas**. Opciones de consulta que incluyen una consulta de toda la información relacionada con el vehículo (Póliza, Cuenta Corriente, Histórico de Modificaciones, etc.), permitiendo el acceso por medio de diferentes criterios (Placa, NIT, Nombre/Apellido de Propietario, Razón Social, Número de Motor, Número de Chasis). También incluye consultas a las diferentes tablas del sistema y del archivo general de registro de contribuyentes (RUC).

- **Procesos**. Contiene diferentes procesos elementales como auxiliares al sistema, en los que se incluyen: manejo del sistema en modalidad diferida (Batch), tanto para emisión de mandamientos como para emisión de tarjetas, grabación de pagos de

refrenda efectuados en el interior del país, herramientas de control del atraso generado en el sistema anterior, etc.

- **Utilidades.** Son opciones consideradas como soporte al sistema e incorporan opciones orientadas a usuarios considerados como administrador, la selección de impresor (si se imprimirá en diferente formulario), la administración del perfil de seguridad para cada usuario, la modalidad de conversación en pantalla con otro usuario, etc. Las opciones para el administrador incluyen: modificaciones a la cuenta corriente, monitoreo diario de producción por emisión y revisión (por usuario). También se incluye la administración de seguridad sobre vehículos relacionada con robos, casos pendientes en juzgados, franquicias, etc.

- **Fin.** Opción para finalizar el uso del sistema de Registro Fiscal de Vehículos.

Características del Sistema

Es importante señalar que debido a la mejora en el tiempo de respuesta del sistema, los contribuyentes, entre ellos tramitadores y personas particulares, generaron una demanda de operación nunca antes vista en RFV. Considerando este fenómeno, se tuvo que incrementar el número de ventanillas de atención al público, así como el personal de operaciones internas del departamento.

Debido al volumen de transacciones diarias realizadas por RFV y la importancia de garantizar la integridad de las bases de datos, se dotó al nuevo sistema con un control transaccional de operaciones. Este se conoce como TTS (Transaction Tracking Sistem), el cual es soportado bajo la plataforma de desarrollo actual (Novell NetWare). Este sistema de control permite que el sistema sea autorecuperable ante una caída de la red o del sistema mismo. Esto significa que, en el momento que esto suceda, el sistema es capaz de arrancar nuevamente en el estado anterior, previo a la caída del sistema. Considerando los problemas que RFV tuvo con el cableado de la red, fue de mucha utilidad, pues en varias ocasiones los datos del sistema han sido autorecuperados por el mismo, valiéndose de TTS, el cual se activa en cada actualización que se efectúa en la base de datos de RFV.

Otra herramienta que proporciona NetWare para tomar copias de respaldo de la base de datos, es el sistema de BackUp, el cual se efectúa a diario después de finalizadas las labores de RFV. Esto significa que en el peor de los casos, sólo se perdería un día de trabajo si se generara un daño irreparable en la base de datos. El sistema de BackUP también permite trasladar el sistema a otro servidor de archivos, en el caso de que él de RFV se dañara, por lo que sólo bastaría restaurar la cinta de BackUp en cualquiera de los otros Servidores con los que cuenta el Ministerio de Hacienda.

Ninguna de estas ventajas de contingencia contra caídas del sistema era posible en el sistema Mainframe, ya que este sistema no estaba diseñado para cubrir eventualidades de este tipo, y dotarlo de ellas era significativamente caro.

Datos Generales del sistema

Actualmente existen 12 ventanillas atendiendo al público. Estas se distribuyen así:

Tipo de Ventanilla	Tramitadores	Particulares	Total
Recepción de Tramites/Mandamientos	3	2	5
Entrega de Tarjetas	2	2	4
Información y Resolución de Problemas	2	1	3
Total de Ventanillas	7	5	12

Tomando datos promedio, la capacidad de procesamiento diario del sistema nuevo, comparada con el sistema Mainframe, se presenta en la siguiente tabla:

Tipo de Ventanilla	Casos	
	Mainframe	Red De Microcomputadora
Recepción de Tramites/Mandamientos	400	1,035
Entrega de Tarjetas	350	1,000
Información y Resolución de Problemas	No Disp.	150

(Los promedios se determinaron tomando como muestra las operaciones realizadas en los meses de julio, agosto y septiembre).

Otro dato importante, es la incorporación de las casas distribuidoras de vehículos a la operación del sistema. Anteriormente a las casas distribuidoras la DGII les proporcionaba tanto las placas como las tarjetas de circulación para dar un mejor servicio a su clientela, ya que se quejaba del mal servicio que RFV les brindaba bajo el sistema Mainframe. Como consecuencia, RFV perdió el control de las especies que entregaba a las casas distribuidoras ya que éstas manejaban las especies sin ninguna o poca supervisión de RFV. Otra consecuencia fue la falta de actualización de la base de datos de RFV. La asignación de números de placa por parte de las casas distribuidoras generó un atraso en la incorporación de los vehículos nuevos en el sistema anterior. El atraso fue tan grande que existían cerca de 5,000 vehículos que no estaban registrados.

La aplicación instalada para este caso posee un tiempo de respuesta mucho más ágil y controles y niveles de seguridad sumamente confiables lo que ha permitido que las casas distribuidoras efectúen directamente sus trámites. Esto significa que las casas distribuidoras han proporcionado personal a RFV para operar el sistema con los trámites que a cada una corresponden. Además, utilizan sus propios equipos (Computadores PC e Impresores) para sus labores dentro de RFV.

RFV cuenta ahora con un control total sobre las operaciones de matricula, que las casas distribuidoras realizan. Además, se garantiza la actualización de la base de datos diariamente. Actualmente, hay 6 casas distribuidoras haciendo uso directo del sistema y los resultados han sido excelentes. Las casas distribuidoras que no tiene un volumen de trámites significativo son atendidas por el personal de RFV, siguiendo los procedimientos normales que cualquier contribuyente efectúa, aunque cabe hacer notar que estas casas distribuidoras son atendidas fuera de la cola del público en general.

Beneficios Indirectos Proporcionados Por el Diseño del Sistema

Actualmente, el sistema es capaz de integrarse con el sistem de Valoración de Vehículos y de Registro de Pólizas que existe en la Aduana Terrestre, ya que se consideró que en algún momento el sistema de aduanas podría alimentar de información al sistema de vehículos. Es decir, el sistema de vehículos captura información de la póliza de importación del vehículo. Esta información incluye los datos que son considerados la llave principal de una póliza en el sistema de aduanas. Esto permite localizar fácilmente una póliza almacenada en su base de datos.

Otro beneficio consiste en el control de la placa extranjera de los vehículos usados que ingresan al país. En el sistema queda registrado el número de la placa del vehículo, según la póliza de importación. Esta información podría ser útil para los organismos de investigación de robo de vehículos. Considerando que al país ingresan en su mayoría vehículos provenientes de los Estados Unidos, el Gobierno de El Salvador podrá proporcionar información sobre estos vehículos a los organismos internacionales o locales que la soliciten para investigaciones oficiales.

Capacitación

La implantación del nuevo sistema se realizó con una capacitación previa al personal de RFV. Si bien es cierto que el sistema maneja seguridad por módulos u opciones, todo el personal de RFV fue capacitado para poder utilizar todo el sistema, con el propósito de poder en cualquier momento hacer una rotación del personal. Se hizo énfasis en capacitar especialmente al personal de supervisión de actividades en las diferentes áreas de trabajo que componen RFV, con el objeto de generar agentes multiplicadores en la capacitación de nuevos usuarios del sistema.

Otro factor importante en la capacitación es el área técnica. Como el Proyecto MoST iba a finalizar sus labores en el Ministerio de Hacienda, era necesario hacer entrega de su trabajo a los técnicos que quedarían a cargo de la nueva aplicación. Considerando este factor, se tomó como medida de capacitación incorporar al equipo de trabajo del MoST un técnico de la DGII, el cual participó directamente en el desarrollo del prototipo. Con esto se logró que el técnico de la DGII conociera a cabalidad todas las áreas desarrolladas en el nuevo sistema, facilitando así el traslado de éste a la Unidad de Informática de la DGII. No dudamos que por la capacidad mostrada por el técnico, a éste se podrán incorporar otros técnicos de la DGII para efectuar labores de mantenimiento a los programas desarrollados y completar además cualquier otro requerimiento que surja en RFV para un mejor desarrollo de sus labores.

Documentación Del Sistema

Al entrar en el proceso de entrega del sistema a la DGII, tanto los usuarios como el MoST desarrollaron labores conjuntas para efectuar esta transición. Una de las tareas involucrados en este proceso fue la documentación del sistema, que fue elaborada por técnicos del MoST bajo los estándares de documentación que se han utilizado en los otros sistemas desarrollados por el proyecto. La documentación comprende el Modelaje de la Base de Datos, Manuales de Usuario, Manuales de Referencia Técnica y los Programas Fuentes documentados adecuadamente para su posterior mantenimiento.

Actividades Por Realizar

Si bien es cierto la labor del Proyecto MoST ha sido realizada, el sistema aún debe ser complementado y soportado, tanto administrativa como técnicamente. Dentro de las labores que esto conlleva, podemos mencionar:

- La incorporación de un modulo de control del flujo de documentos, es decir, no existe en este momento un control de papeles, por lo que constantemente estos se pierden, generando problemas tanto a la administración como al contribuyente. Sobre este módulo, el grupo del Proyecto MoST ya definió el marco conceptual del trabajo y el técnico de la DGII está trabajando en la programación del modulo. El avance realizado en este trabajo fue del 30%al terminar el Projecto.

- Reportes de Control de las operaciones que cada usuario realiza diariamente, ya que actualmente el control de operaciones por usuario se realiza consultando una operación específica en el sistema (por ejemplo, quién emitió el Mandamiento #XXXX, o quién emitió la tarjeta al vehículo placas P-XXXX, etc.). Es decir, el sistema es capaz de responder a interrogantes puntuales. Estos reportes permitirían realizar una labor de auditoria mucho más fácil, en cualquier momento. El requerimiento ha sido comunicado a la Unidad de Informática de la DGII, y se trabajará en ello al terminar el modulo de control de documentos.

- Trabajar en la valoración de los vehículos. Actualmente existen 5,000 vehículos cuyo valor no ha sido incorporado al sistema. Esto genera problemas en el momento de aplicar la ley, ya que el cálculo del impuesto de refrenda se efectúa sobre el valor del vehículo. Este problema debe ser resuelto cuánto antes, porque la administración tendrá que cargar con el grave problema de que el sistema no puede trabajar sobre estos vehículos si no existe este dato.

Conclusiones y Recomendaciones

La Importancia Del Trabajo Efectuado, Tanto Administrativo Como Técnico, Ha Sido Evidenciada En los resultados obtenidos a la fecha. El sistema puede considerarse como exitoso; sin embargo, todavía existen algunas deficiencias que cubrir, unas de tipo técnico y otras administrativas. Consideramos que el desarrollo en el área técnico alcanzó mucho más de lo esperado, dejando instalado un sistema con capacidad para soportar una carga de trabajo que supera las expectativas iniciales.

El sistema posee un módulo de seguridad eficiente. Este permite controlar el acceso de los usuarios a los diferentes módulos de operación y un mejor control por parte de la jefatura de RFV sobre el personal operativo. Debido al módulo de seguridad y los controles implementados en el sistema, se ha reducido significativamente las operaciones fraudulentas en el sistema de vehículos. El fenómeno de la corrupción puede ser detectado fácilmente debido a estos mismos controles.

Se ha logrado registrar exitosamente a todos los vehículos vendidos por las casas distribuidoras; es importante mantener este control, ya que se ha logrado garantizar la actualización diaria de la base de datos. Podemos concluir que el procedimiento utilizado ha sido acertado, ahorrándole a RFV un trabajo que le hubiese requerido más personal y equipo.

El tiempo de respuesta de un trámite es de 10 días. Esto significa que la atención al contribuyente, en cuanto al tiempo de respuesta, ha mejorado notablemente y puede mejorar mucho más. Si consideramos el tiempo de respuesta del sistema Mainframe (de 2 a 3 meses), el sistema ha cumplido la meta inicialmente planteada. Este período de tiempo se puede reducir drasticamente, una vez se logre estabilizar el sistema. Esto implica superar problemas como la valoración de vehículos, incorporación de motos, reasignación de números de placa a vehículos nacionales, control de documentos, etc.

Recomendaciones

El sistema ahora está en marcha y no se maneja solo. Requiere de un fuerte apoyo administrativo y es de suma importancia no perder de vista este detalle. El sistema Mainframe estaba virtualmente olvidado por la administración, lo que genero los problemas que en él

existían. Actualmente se cuenta con la experiencia necesaria como para tomar las medidas correctivas en los puntos que han generado inconvenientes y que requieren vital atención:

- Existe una desorganización preocupante en la asignación de accesos al sistema. Hay personas que se les cambia sus funciones pero no se le eliminan los accesos a sus opciones anteriores, por lo que estas personas, en un momento dado, podrán tener acceso a las opciones de las tres etapas más importantes del sistema, desvirtuando así los controles de acceso mencionados anteriormente. Esto puede ser superado si se implementa un buen control administrativo en la asignación de accesos al sistema. Esto podría significar designar un administrador del sistema, no a nivel técnico pero si a nivel operativo.

- Hace falta más comunicación entre la jefatura, mandos medios y el personal operativo. En muchos casos el personal no sabe o no conoce alguna nueva disposición administrativa, lo que crea confusión entre el personal. Es importante que la jefatura de RFV mantenga una comunicación más eficaz con su personal, ya sea con reuniones informativas o con memorándums dirigidos a todo el personal cuando existan medidas administrativas que afecten de alguna manera las operaciones de RFV.

- La valoración de vehículos debe ser tomada con más seriedad. Desde que el proyecto MoST identificó este problema (a finales de 1993), se le comunicó a la administración de los problemas que esto generaría, se les dotó de una herramienta informática para atacar el problema y, sin embargo, aún no trabajan en ello.

- La demanda de los contribuyentes hacia el sistema se ha incrementado notablemente. Sin embargo, éste ha logrado soportar tal demanda. Es importante analizar alternativas de descentralización que permitirían dar un servicio aún mejor a los contribuyentes. Esta descentralización podría ser a nivel regional.

- Implementar el módulo mecanizado del control de documentos. Esto es de suma importancia, ya que otro de los problemas más graves es la pérdida de documentos, ocasionando atrasos e incomodidades a los contribuyentes.

- Depurar la tabla de Marcas y Tipos. Actualmente existe una tabla de marcas y tipos que está plagada de duplicaciones e inconsistencias. Debe de crearse una herramienta informática que permita a los usuarios depurarla más fácilmente, ya que esta tabla contiene 8 mil registros.

- Unificar la tabla de colores. El sistema actualmente maneja dos tablas de colores heredadas del sistema Mainframe. Estas tablas deben unificarse para corregir los problemas técnicos en el manejo de ambas tablas.

- Otro punto importante es el mantenimiento del equipo, así como el contar con un STOCK para responder a las eventuales fallas de los mismos y no debilitar la atención al contribuyente. Hay que tomar en cuenta, además, el mantenimiento preventivo de los mismos, el que debe de ser constante. El punto más importante son los impresores; en estos se ha detectado que, debido al alto grado de trabajo que desempeñan, necesitan limpieza más frecuente de lo normal. Esta podría ser cada dos días, o algo similar. También deben de buscarse alternativas para poder utilizar algún otro tipo de impresor en la impresión de las tarjetas de circulación.