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SOME CONSIDERATIONS ON THE APPLICATION OF CORIS

FOR IMPROVING REGISTRY PERFORMANCE

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398

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CONTENTS

INTRODUCTION

Computerized Registry Information System (CORIS) has been designed as a tool for strengthening the major functions of technology transfer registry by providing technical means for more efficient data collection, storage and processing as well as by facilitating interlinkages with other computerized information systems either national, regional or international. Its advantages are particularly well demonstrated in case of large number of contracts registered resulting in the high density of information streams, which are difficult for manual handling. CORIS increases the speed of data processing, improves accuracy of information and provides a good base for non-routine inquiries.

The advantages of CORIS should be also seen in the context of rapid computerization of many other national, regional and international information systems. Thus the direct interflows of computerized information with relevant government institutions, technological information banks, investment promotion centres, investment and commercial banks, trade centres, INTIB, TIES and UN CTC might substantially contribute to the increased effectiveness of such operations. At the same time due to the broadening and enrichment of data at the registry disposal adequate conditions are created for the improvement and the thoroughness of the decision making process.

The present paper discusses conditions, ways and methods of using CORIS as a tool for performing major registry functions. The analysis concentrates on three broad subjects:

- expanding the scope of available data through linkages with other data bases;

- using CORIS in the course of contract evaluation and registration;

- disseminating information on technology transfer to the outside users.

The introduction of CORIS represents major breakthrough in the day-to-day registry activities by enabling easy access to the individual data and compilation of aggregated figures on technology transfer. In order to achieve full benefits of these new opportunities the potential recipients of information have to be aware of the system capabilities and willing to use the relevant data. The experience shows that this shall not be taken for granted especially during the first period of CORIS implementation. Let us take for example the internal users of information, i.e. management and the evaluating officers in the registry. The lack of required information or severe obstacles in getting access to it resulted in the routine procedures under which the major registry functions have been performed without data currently available from the CORIS system. The adjustment of the existing procedures can be quite difficult and time consuming and further aggreviated by the existing psychological barriers towards using computers. In view of the above it is necessary to promote the system, its capabilities and alternative applications to all registry staff. However the success in that field shall be measured not only by occasional requests for information but by the establishment of the standard, routine procedures of the

registry operations under which data from the system becomes indispensable in the process of performing major registry functions.

Equally important are the attitudes and experience of the external recipients of information, i.e. various government agencies, companies, mass media, university circles, etc. Due to major barriers in generating aggregated figures the registries were not disseminating such information to the outside users and the potential recipients are not aware that such data is currently available.

In the analysis presented below the examples are shown as how the outputs from CORIS might be used in order to improve the effectiveness of registry operations. Obviously, in the process of adjusting CORIS to the needs of a given registry additional outputs might be designed thus extending the scope of system applications.

I. EXTENDING THE SCOPE OF AVALIABLE DATA THROUGH LINKAGES WITH OTHER DATA BASES

1. Linking CORIS with other national information systems

In the recent period a worldwide tendency might be observed towards designing specialized computerized data banks for various applications. The existence of the growing number of such information systems also in developing countries opens new perspectives for CORIS application. The establishment of automatic linkages with other data banks may substa tially expand system capabilities. The information collected within the registry can be supplemented, matched and compared with those obtained from other data banks. On the other hand the scope of potential users of the CORIS system can be further extended by adding those recipients which may gain access to the information from CORIS indirectly, i.e. through other data banks.

The growing awareness of the role of computerization for accelerating socio-economic development in general and for the improving the functioning of the government in particular resulted in the establishment of the computerized data banks within the broadly defined government sector in developing countries. The establishment of automatic linkages between CORIS and other government-sponsored data banks shall be considered by the registry in the first place. As a initial step in that direction the registry shall carefully evaluate the existing computerized data banks including those currently implemented and/or sponsored by

the relevant ministeries, agencies, parastatals, etc. Based on such survey the economic, legal, technical and organizational implications of the potential linkages of CORIS with other national data banks shall be examined in detail before reaching final decision.

The overall situation with respect to the application of the various computerized information systems differs substantially among developing countries. Therefore only the most typical linkages of CORIS with other data banks and their implications are briefly illustrated below.

a) Linkages with technological data banks

A number of developing countries embarked on the establishment of technological information centres where the information on alternative technologies are collected and disseminated mostly to the business community, research institutes, universities, etc. The access to such information through CORIS might be useful for the registry especially in the process of technical evaluation of the contract as the purchased technology can be checked against available alternatives. On the other hand the typical users of the technological information will be anxious to learn on technologies actually acquired and on the real effect of their implementation.

b) <u>Linkages with the information systems on existing business establishments</u>

The government agencies responsible for the implementation of the industrialization policies require detailed information on the business establishments operating in a given country. As a result such information is being already collected in a number of developing countries mostly within the framework of their centralized statistical systems. The automatic access to the basic data on the principal characteristics of the company applying for registration may have profound impact on the evaluation procedure as the information supplied by the recipient can be cross-checked with other sources. Simultaneously such linkages may open new perspectives for launching monitoring function by the registry. On the other hand the agencies responsible for co-ordination and monitoring of the industrialization programme (e.g. Ministry of Industry) can effectively utilize information from CORIS for their purposes.

c) <u>Linkages with statistical system for foreign trade</u>

The computerized statistical systems on import/export transactions based on customs documentation are currently implemented in a number of developing countries. Obviously such data can be utilized for the macro-monitoring and generating aggregated figures by comparing branch and geographic patterns of technology transfer with trends in commodity transactions. In the similar way this information can be used by the government agencies mo-

nitoring foreign trade operations. If, however, the data on
exports and imports can be broken down by exporting and importing
companies this can be extremely useful also in the process of
evaluation and micro-monitoring.

d) Linkages with data bases on direct foreign investment

The negative consequences of the activities of transnational
corporations for the socio-economic development resulted in
various measures aimed at imposing effective controls of the
operations of such corporations by the respective government
agencies in developing countries. The national data banks on
direct foreign investment are seen as the major tool for the
implementation of the relevant policies in that field.

It has to be reminded that substantial portion of technology
transfer is being conducted between equity-related partners,
typically between parent and subsidiary companies. In such case
the access to the information on the existing equity relation-
ships is of utmost importance in the process of evaluation, mo-
nitoring and generating aggregated statistics. It can be also
argued that matching data on direct foreign investment with those
on technology transfer is the precondition for the effective
control of transnational corporations.

2. Linking CORIS with international data bases

So far, the main emphasis has been given to the positive
effects of international exchange of data within TIES and regiona

networks such as SAIT, SELA, ASTIS and ARIES. The computerization may substantially improve the conditions and procedures for such exchange as well as facilitate access to other international data bases offering information being of interest for technology transfer registries. For the purpose of illustration only two systems operated by international organizations can be mentioned. The first one is the UNIDO's Industrial Technology Information Bank (INTIB). It is aimed at collection, storage and dissemination of available technologies which might be of interest to developing countries. The information is being disseminated through UNIDO series like Industrial Development Abstracts, Monographs on Appropriate Industrial Technology, UNIDO Guides to Information Sources and Development and Transfer of Technology Series. INTIB handles requests for specific information through Inquiry services In the recent period INTIB is undergoing significant changes affected, inter alia, by the recent PC revolution. It seems that the direction of evolution of TIES and INTIB is similar thus providing framework for closer links between two systems.

The information on the major suppliers of technology can be also obtained from the data bank operated by the UN Centre on Transnational Corporations. It is being provided on ad-hoc basis upon specific requests of governments. It is worth mention that TIES/CORIS can be directly linked with UN CTC data base through UN CTC Code in the Contract Card.

II. USING CORIS IN DAY-TO-DAY REGISTRY OPERATIONS

1. Using CORIS in the process of contract evaluation

The evaluation of technology transfer agreements is being usually conducted by comparative analysis of terms and conditions. In view of the above the evaluating officer shall have easy and immediate access to data on past experience of the registry with respect to the contract registration, evaluation and approval. Previously this has been achieved by the search of the registry files. The CORIS system enables generation of outputs on past registry experience with breakdown by final decision (approved or rejected), supplier, recipient, product and industry. Such information, often neglected in day-to-day registry activities, is of utmost importance during the evaluation process. For exa ple the information on contract already registered with a given recipient may provide some clues as to the real necessity of the new agreement if e.g. previously approved contracts are not implemented (LIST OF CONTRACTS REGISTERED/APPROVED/REJECTED WITH A GIVEN SUPPLIER)[1]. Similarly the outputs: LIST OF CONTRACTS REGISTERED/APPROVED/REJECTED WITH A GIVEN SUPPLIER shall help avoiding duplication of technology acquisitions by different local companies.

While reaching final decision the evaluating officer has to consider the past intensity of technology inflows in a given

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1) Herewith we refer to the standard CORIS output formats.

industry or product. In such case the outputs LIST OF CONTRACTS APPROVED WITH A GIVEN PRODUCT and LIST OF CONTRACTS APPROVED WITH A GIVEN INDUSTRY are very useful.

2. Using CORIS for the purpose of monitoring of implementation of technology transfer agreements.

The need for implementing a comprehensive monitoring is being widely recognized among the registries. However unsolved problems in the area of information collecting and processing are the major factors delaying the implementation of this essential function. The CORIS system makes the implementation of monitoring much easier; it has to be born in mind however that the monitoring function requires additional information inputs, i.e. progress reports regularly delivered by the recipient enterprise. One can distinguish between micro monitoring related to the individual agreement and macro monitoring where the aggregated effects of technology imports on the economy of a given country are being evaluated.

Typically, the registry looks more closely into the implementation of agreements only in those cases where:
- the achieved results fell short of projected targets, or;
- achieved results substantially exceeded the projected earnings.

The outputs: LIST OF CONTRACTS APPROVED WHERE PROJECTED TARGETS WERE NOT REACHED and LIST OF CONTRACTS APPROVED WHERE PROJECTED TARGETS WERE EXCEEDED are the most suitable for that purpose.

3. Using CORIS for internal control

Especially in the larger registries the internal control of work of the evaluating officers can be performed by the head of the registry with the assistance of CORIS in the faster and more effective manner. In order to check the correctness of the proposed decision with respect to registration of a given contract the head of the registry may immediately receive the printout of a CONTRACT CARD. The experience shows that the major problem exist'ng in many registries is the backlog of contracts under evaluation. In order to monitor the speed of evaluation process the head of the registry may request the output: LIST OF CONTRACTS UNDER EVALUATION. The process of evaluation can be easily broken down by individual officer which is very important while reaching personal decisions (on promotion, dismissal, etc.). Under such situation the output SUMMARY OF OFFICERS INTERVENTIONS can be used. Similarly while evaluating the work of each department the head of the registry may request the output SUMMARY OF DEPARTMENTS INTERVENTIONS.

III. <u>DISSEMINATING DATA TO THE OUTSIDE USERS</u>

Although information on individual cases is often requested by
the outside users basically there is a strong demand for aggre-
gated figures. This is due to the following factors:

- in many developing countries technology transfer registry serves
  as a leading government agency responsible for the implemen-
  tation of the relevant government policies and such function
  cannot be performed without access to the information described
  above;

- the real effects of technology transfer in developing countries
  became nowadays a very hot issue and the relevant data is of
  special interest of the various government agencies, parliament,
  mass media, etc. It is obvious that the prospective recipients
  will demand such information in the first place from the re-
  gistry.

Typical qyestion the registry might be confronted with are
the following: What are the actual versus projected results of
technology transfer in a given year? The output format ESTIMATED
AND ACHIEVED ECONOMIC AND FINANCIAL EFFECTS can be very useful
for providing answer for such question. For the extended analysis
covering the 5 years period the output ACHIEVED ECONOMIC AND
FINANCIAL EFFECTS OVER LAST 5 YEARS can be taken. Alternatively
in the planning process the estimated results covering next 5
years can be provided from the output ESTIMATED ECONOMIC AND
FINANCIAL EFFECTS FOR THE NEXT 5 YEARS.

Closely associated with the issue of effectiveness of technology transfer is the evaluation of the results of registry intervention in a given period of time. The output STATISTICS ON REGISTRY INTERVENTION provides a background for the analysis of the effectiveness of control mechanism of technology transfer.

The factors described in the previous paragraph determine the need for generating aggregated figures reflecting the intensity structure and directions of technology transfer in a given country.

Let us consider first the overall statistics on technology transfer often requested by various government agencies, mass media, etc. We shall use the outputs: STATISTICS ON APPROVED TECHNOLOGY TRANSFER CONTRACTS, STATISTICS ON ECONOMIC EFFECTS OF CONTRACTS APPROVED, TOTAL CONTRACTUAL PAYMENTS and STATISTICS ON REGISTRY INTERVENTION for immediate dissemination among interested parties.

The relevant output formats include also basic information on the registered agreements with breakdown by collaboration type, supplier country, level of foreign holdings, contract duration, payment type, royalty rate and the total contractual payments.

For the illustration only we shall indicate that data included in the output: NUMBER OF CONTRACTS BY SUPPLIER COUNTRY is being often requested by the ministries coordinating foreign economic relations. On the other hand the information content of the output NUMBER OF CONTRACTS BY LEVEL OF FOREIGN HOLDINGS can be relevant for government agencies dealing with direct foreign investment.

The aggregated figures outlined in the previous and the consecutive paragraphs can be disseminated on the ad-hoc basis. However the data generated from the CORIS system enables the establishment of the regular channels for disserinating information on technology transfer to other government agencies, business and academic community, mass media, etc. A regular publication which might be called "Annual Review of Technology Transfer in ..." could be used as a main tool for such communication. The "Annual Review" may evolve gradually from the set of statistical tables distributed within the government administration to the full-fledged publication with in-depth analysis of the presented figures.

CONCLUDING REMARKS

The foregoing analysis leads to several important conclusions. First, the implementation of CORIS may substantially improve the operations of technology transfer registries in developing countries. Moreover it may expand the overall framework of registry activities. With the assistance of CORIS registries might be able to gain access to additional sources of data through computerized networks as well as widely disseminate relevant information to other government agencies, business community, mass media, etc. However CORIS shall always be seen only as a tool and its effectiveness depends primarily on the knowledge and capabilities of users. Consequently sensitization and training of the whole staff with the emphasis on the new opportunities offered by CORIS shall constitute a crucial element of the registry computerization programme.