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MIS Guidelines for Employment Law Programs in Poland

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MIS Guidelines for Employment Law Programs in Poland

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Prepared for:

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EXECUTIVE SUMMARY

This report proposes an architectural structure for the large scale Management Information System (MIS) intended to support decision making about labor market programs within the Polish system of labor offices (SOLO). The SOLO is headed by the National Labor Office (NLO) and includes 49 Voivod Labor Offices (VLOs) and about 520 Local Labor Offices (LLOs). With the current high level of unemployment in Poland, SOLO is now providing services for nearly 10 percent of the Polish population. The MIS systems proposed in this document is an enterprise-wide, open system, in an integrated environment.

This report proposes that the MIS for the SOLO in Poland be structured to have 11 major information systems federations and 7 enterprise-wide databases. The proposed system federations are organized into two major categories: labor program-oriented systems and institution administration-oriented systems. It is estimated that these MIS systems will require about 12,300 processors and terminals organized into client-server configurations. The configurations will be networked via 570 Local Area Networks (LANs) and a national Wide Area Network (WAN). With the latter to be phased in over several years as the telecommunications system in Poland improves.

The key success factors for implementation of the proposed MIS architecture are early staffing of the National Labor Office (NLO) Department of Organization and Informatics and appointing capable leadership for project development centers at 8 Voivod Labor Offices (VLO). To expedite the project, it is suggested that application software be developed by third-party software contractors who will work in close cooperation with the NLO and the 8 selected VLOs using Computer Aided Software Engineering (CASE) methods.

In order of priority, the project implementation milestones are: (1) release of request for proposals (RFPs) for third-parties to supply hardware and software, (2) review of proposals received and selection of contractors, (3) staffing, (4) enterprise-standardization (e.g. menus, interfaces), (5) system prototyping, (6) pilot installation, and (7) user training.

In the language of MIS architecture, a federation of information systems is a set of the same type of systems integrated throughout all the levels of an organization. The suggested sequence for developing the necessary system federations is as follows: (1) Office Automation Systems, (2) Program Information Systems Federation (ISF), (3) Labor Fund ISF, (4) Job ISF, (5) Training ISF, (6) Statistics ISF, (7) Complaints ISF, (8) Records Management System, (9) Directing ISF, (10) Executive ISF, and (11) Legal ISF.

In the context of the proposed MIS architecture it is reasonable to expect that the first systems federations could be implemented in 1994, with the whole MIS complex being implemented within 3 to 5 years. This schedule presumes that contracts for hardware and software are concluded in a timely fashion with competent vendors, financial and human resources are available within the NLO and SOLO, and the project is managed efficiently.

Section I. INTRODUCTION

A. Project Objective

This report provides guidelines for the design and implementation of a large scale Management Information System (MIS) to support decision making for the cost effective operation of labor market programs run by the System of Labor Offices (SOLO) in Poland.

The SOLO is headed by the National Labor Office (NLO) and includes 49 Voivod Labor Offices (VLOs) and about 520 Local Labor Offices (LLOs). The MIS will support decision making within the SOLO which has a staff of about 9,000 persons, and in mid 1993 was providing services to more than 2.6 million job seekers who were registered as unemployed. The services to unemployed and job seekers are delivered through eight main labor market programs. The MIS will produce periodic reports about program performance to inform administration and management.

The guidelines presented in this report propose an efficient architecture for structuring the huge volume of information flow necessary to manage and administer the several labor market programs operated by the SOLO. The proposal includes a recommendation for the sequence of events in developing the many parts of the system which exploits the latest technical and methodological possibilities, but recognizes the practical constraints of time and money.

At the heart of the proposed automated management information system (MIS) to support planning, evaluation, and budgeting for labor market programs in Poland is a set of performance indicators. These performance indicators are the main instrument for monitoring the effectiveness of the several programs. The use of performance indicators will allow a standardized assessment of program performance across voivods, local offices, and programs which is not provided by other methods of evaluation. A core data base for evaluation is recommended in an appendix to these guidelines for an MIS. The data base includes demographic data on clients, information on financial expenditures to operate programs, follow-up data on program participants and operators, and regional economic information. From this data base it will be possible to design an adjustment methodology to adapt national standards for performance indicators to local and voivod conditions, and to encourage targeting of clients to selected groups. Not only is comparison of program performance standardized using performance indicators, it is also timely so that results may be used in the annual planning and budget allocation process.

B. Principles Guiding the Work

The following principles guided work on the project:

1. To ensure long term practicality, solutions proposed should embody current "state of the art" methods and practices accepted as standard within the information systems profession.

2. The solution proposed should be immediately practical and incorporate existing "best practices" identified within SOLO. The proposed solution was developed in collaboration with experts in the Ministry of Labor and Social Policy, the National Labor Center, and the voivod labor centers in Kraków, Poznań, and Bydgoszcz. The proposed solution recognizes the methods and resources currently in use and recommends a natural transition to an improved enterprise-wide system which preserves the accepted best practices in SOLO.

3. The performance indicators adopted should be consistent with the goals for labor market programs. To ensure this the performance indicators were developed in collaboration with professional staff from the Ministry of Labor and Social Policy, the National Labor Office, and the Voivod Labor Offices in Poznań, Kraków, and Bydgoszcz.

4. The information systems to be developed should not only automate office and service routines, but should also informate action. That is, the systems should not only relieve the drudgery of processing standardized forms, but should provide both clerks and executives with new views of information which guide the SOLO to providing more effective service. A key part of the process of informating management is the establishment of a "performance indicators" system for the labor market programs.

5. The ideal SOLO information system would be an enterprise-wide, open and integrated system operating in an on-line environment. Meaning that employees of the SOLO would have immediate access to all information ranging from individual client records to summary financial reports.

6. The following principles of MIS architectural planning have been applied to assure reliability, quality, and efficiency of the MIS for the end-user:

a. Cybernetization - feedback and requisite variety
b. Systematization - goal-driven components and relationships
c. Cohesiveness - harmony of system components
d. Categorization - each component having a unique role
e. Primitiveness - generic elements and relationships
f. Completeness - set of possible components and relationships
g. Open-ended - providing room for future growth

C. Manner in Which the MIS Guidelines were Developed

The MIS Architect who was the lead author of this report is Prof. Dr. Andrew S. Targowski of Western Michigan University. The co-author and Project Director is Dr. Christopher J. O'Leary who is a Senior Economist at the W.E. Upjohn Institute for Employment Research. This report is the result of more than six months of collaborative work by a large project team. In addition to O'Leary and Targowski the project team included: Dr. Andrzej T. Mierzwicki, TOR 2 Coordinator for the NLO; Piotr Kołodziejczyk, Director of the

Voivod Labor Office in Poznań; Robert Jedynak of the Voivod Labor Office in Kraków; and Marek Nowicki of the Voivod Labor Office in Bydgoszcz. Also contributing to this report were members of the advisory and steering committees for TOR 2 with members from the National Labor Office (NLO) and the Ministry of Labor and Social Policy (MOLSP). Members of these committees are as follows:

TOR 2 Advisory Committee

Irena Wolinska, Director of Placement, NLO
Anatol Szurmak, Director of Legislation, NLO
Wojcieck Nagel, Deputy Chief Executive, NLO
Zbigniew Sadowski, Director of Labor Market Analysis
Jacek Stryczyński, Vice Director Department of Information, NLO

TOR 2 Steering Committee

Andrzej Mierzwicki, TOR 2 Coordinator, NLO
Irena Wolinska, Director of Placement, NLO
Maria Gajek, Employment Department, MOLSP
Malgorzata Kozyra, Employment Department, MOLSP
Tadeusz Olejarz, Vice Director of Employment Department, MOLSP

Work on the project was done both in Poland and in the United States. The project team worked together in person in March and July of 1993 when O'Leary and Targowski made month long working visits to Poland. The team also worked together for seven weeks in May and June of 1993 when Mierzwicki, Kołodziejczyk, Jedynak, and Nowicki participated in a fellowship study tour in the United States. During the study tour work on the project by the Polish side was complemented by their study of MIS architecture and English language at Western Michigan University, and their attendance at 13 seminars on practical methods for analyzing labor market problems and solutions at the W.E. Upjohn Institute for Employment Research. Taken all together, the project team worked together in person more than 15 weeks, with a total of over 52 man-weeks. During these contacts, many parts of the MIS solution were developed with and verified by the Polish side.

Discussions with representatives of the worldwide consulting firm of Coopers and Lybrand, contractor for TOR 3, added to the project development and approach.

The solution proposed was also influenced by information gathered during an ongoing review of MIS solutions for labor market programs used in other countries. This comparative information is being gathered to prepare a separate report to the NLO and MOLSP by the Upjohn Institute as part of the work for TOR 2.

D. Elements of MIS Guidelines

The MIS guidelines are provided in the following categories:

1. The legal and management solutions that should have critical influence on the MIS structure (The Organization View Section). This section includes the system of performance indicators.

2. The information systems strategy and architecture, which define the program and administrative support of the SOLO services for unemployed (The Information View Section).

3. The software view, which specifies the enterprise-wide and open system, integrated environment and standards (The Software View Section).

4. The resources view, which provides recommendations for the Information Resource Management organization and staffing, computer platform, networks matrix, and database constellation (The Resource View Section).

5. The systems implementation strategy which defines the process of developing and installing SOLO's large-scale MIS, naming major players, milestones, and priorities (The Strategy of Implementation Section).

E. Overview of the Strategy for Implementing the Proposed MIS

It is recommended that the MIS implementation be carried out according to the life cycle model for enterprise-wide system development. While a detailed description of the steps in the process is given in Section VI of this report, it is useful at the outset to review in outline style the following four phases which comprise the system development life cycle. The following outline summarizes the recommended steps for implementing an MIS for the SOLO in Poland.

I. Systems Planning Phase: Business Needs and System Strategy

● Analysis of Business Requirements
● Definition of Business Requirements
● Systems Strategy and Guidelines
         * Conceptual Architectural Planning
           - What and Why
           - Functions, Processes, Systems
           - Main Architecture of Applications and IT Resources
        * Strategy of Systems Implementation

II. Development Phase: IT Application

Definition Stage

- Information Technology Request For Proposal (RFP)
- Functional Solutions Definitions (after acceptance of proposals)
- Data Management and Administration Solutions (after acceptance of proposals)

Design Stage

- System/Subsystem Specification
- Program Specification
- Database Specification
- Test Plan I version

Prototyping and Programming Stage

- Applications Generation with CASE
- Program Maintenance Manual
- Operations Manual
- Users Manual
- Test Plan II version

Test Stage

- Test Analysis Report

III. Systems Implementation: Installation and Startup

Equipment Installation Stage

Tested Solutions Implementation Stage
- Pilot Installations
- System Installation
- System Integration

IV. Systems Operations: Management and Operations

- Completed project applied by users
- System Maintenance and Improvements
- System Re-engineering

The system development life cycle outlined above is applicable to an enterprise-wide implementation, a database design effort, as well as an application development project.

The System Planning Phase includes many preliminary activities necessary to set the goals for the system life cycle. The planning of the system strategy, architectures, and implementations are the subject of this document. These activities are enumerated as follows:

* Researching and translating the business into a language of information technology and management

* Inventorying the current environment

* Identifying the organizational and users' needs

* Establishing the system strategy

* Main systems architectures

* Information Resource Management (IRM) strategy

* Strategy of Systems Implementation

Results include:

- Consensus on business needs
- Consensus on systems strategy and architectures
- Effective working relationships
- Critical success factors
- Documentation of the planned solution

II. The Development Phase. During this phase, the requirements for the software are determined and the software is defined, specified, programmed, and tested. Documentation is prepared within this phase to provide an adequate record of the technical information developed. In the project structure it falls under the scope of TOR 3 activities.

III. Systems Implementation. During this phase equipment and systems are installed at user sites. In the project structure it falls under the scope of TOR 4 activities.

IV. Systems Operations: Management and Operations. During this phase, systems are operational, the software is maintained, evaluated, and changed as additional requirements are identified.

Section II.   ORGANIZATIONAL VIEW

A. National Economic Context of Labor Market Programs

During the late 1980s, the labor market in Poland was generally characterized by a shortage situation. In the years prior to 1990 there were usually many more vacancies than people looking for jobs. "In Poland in 1988, for example, vacancies outnumbered job seekers by 86 to 1."[1] Unfortunately, this shortage situation also extended to most other markets. Indeed goods usually were allocated by waiting time instead of price. Kornai (1980) has documented that in such "shortage economies" enterprises try to retain their existing workers and continually hire new workers to avoid the risk of any future labor shortage.[2] This practice frequently resulted in idle or underemployed staff within enterprises--a situation commonly known as "indoor unemployment." The associated aggregate inefficiency is exemplified by the late 1980s estimate that employment in Poland could have been reduced by 25 percent without materially affecting output.[3]

In an effort to improve the efficiency of the Polish economy, at the beginning of 1990 the Polish government initiated an effort to transform the economy from a planned one operating under command arrangements, to a competitive economy where markets perform the allocation function. The policies initiated to achieve this transformation were: (1) reform of the political system, (2) transfer of ownership of land, property and businesses from state to private control, (3) removal of subsidies from enterprises, and (4) relaxation of price controls on goods and services.

Similar reforms were being carried out by nearly all nations in the region during the same period. While not all countries started with the same degree of prior competitive market development all have suffered severe short term economic consequences. One of the first tangible effects of the new policy actions was the dramatic rise in unemployment. Analysts have argued that the main direct causes of the rising unemployment are: (1) the collapse of the former Soviet economy which was a major consumer of finished goods and supplier of energy and material inputs, (2) the breakdown of the COMECON system of managed trade within the eastern block, (3) restrictive government budget policies designed to reduce inflation, (4) privatization of enterprises, and (5) the general economic recession throughout Europe.

To place the present report in context we review the early results of economic and political reform in Poland. Summary statistics in Table II-1 list the values of several important labor market and economic variables for the years 1989 to 1992. In Poland where the

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[1] Commission of the European Communities (1992), Employment Observatory: Central and Eastern Europe--Employment Trends and Developments No. 1 (January), p. 15.

[2] Janos Kornai (1980) The Economics of Shortage, Amsterdam: North-Holland.

[3] Commission of the European Communities (1992), No. 1 (January), p. 3.

Table II-1

Labor Market and Economic Conditions in Poland, 1989-92
(figures are millions of persons unless otherwise indicated)

	1989	1990	1991	1992
Population	37.963	38.119	38.245	38.365
Working Age Population	23.157	23.278	23.402	23.539
Armed Forces	.492	.427	.366	.340
Civilian Labor Force	17.130	17.102	17.285	17.734
Civilian Employment	17.130	16.511	15.601	15.379
Agriculture	4.685	4.559	4.391	4.230
Mining	.578	.565	.459	.450
Manufacturing	4.173	3.947	3.657	3.561
Power-Water	.182	.137	.138	.135
Construction	1.321	1.243	1.065	1.131
Trade-Catering	1.515	1.626	1.530	1.780
Transport-Communication	1.222	1.056	.999	.787
Financial Services	.380	.327	.312	.285
Health-Education	1.950	2.002	2.039	1.850
Public Administration	.399	.387	.406	.432
Other Services	.725	.662	.605	.738
Civilian Unemployment	.000	.591	1.684	2.355
Self Employed	.412	.530	.601	.680
Civilian Unemployment Rate (%)	.0	3.5	9.7	13.3
Consumer Price Inflation (%)	251.1	585.8	70.3	43.0
Wage Inflation (%)	291.8	389.0	70.6	39.3
Real Wage Growth (%)	11.2	-27.4	0.2	-15.0
GDP Constant Prices (%Δ)	-	-11.6	-7.6	0.5
Industrial Output (%Δ)	-	-24.2	-11.9	4.2

population is over 38 million persons and steadily growing, the working age population and the civilian labor force have grown at an even faster rate than the population from 1990 to 1992. In the meantime the number of employed civilians and persons in the armed forces have steadily declined.

Employment figures for the 11 principal industry groups are also given in Table II-1. Over the period 1989 to 1992 only three industry groups recorded employment gains: (1) trade and catering (2) public administration, and (3) other services. Between 1989 and 1990 employment declines exceeding twenty percent were recorded in transport and communication, power and water, and mining, while employment declines of ten to fifteen percent were experienced in manufacturing, construction, agriculture. In agriculture, the largest employment sector in Poland, the ten percent employment decline meant a loss of some 425,000 jobs during the first three years of political and economic restructuring.

From Table II-1 we see that while there was officially no unemployment in 1989. The number of unemployed rose to nearly 600,000 persons in 1990, 1.7 million in 1991, and 2.4 million in 1992. By 1992 unemployment had reached 13.3 percent of the civilian labor force. So far in 1993 while the absolute number of unemployed continues to rise and is approaching 3 million, fortunately the rate of increase is falling.

One encouraging result of the reforms is that self employment rose by sixty-five percent from 412,000 in 1989 to 680,000 in 1992. Other achievements have been the dramatic lowering of price and wage inflation during the period, and the positive growth in gross domestic product (GDP) and industrial output for 1992. Furthermore, it is expected that GDP will register an even larger gain for 1993. There are hopeful signs for the future of the Polish economy, but there remains a great immediate need for government programs to support unemployed persons and aid reemployment of a tremendous number of able workers.

While the problem of unemployment is severe by historical standards throughout the country, it is still worse in some areas than others. Table II-2 lists unemployment rates for the years 1990, 1991, and 1992 for the nine major geograpic regions of Poland. While still severe, unemployment has risen less sharply in regions dominated by urban aglomerations such as the Capital (Stoleczny) district surrounding Warsaw, and the South (Poludniowy) district surrounding Kraków. It is notable that the South region has a relatively low rate of unemployment in spite of the large share of employment in mining and metal works. Unemployment is highest in the North and North East which is primarily agricultural, and the Central region where Lodz is a center for textiles, coal, and engineering. The regional distribution of unemployment is a guide for understanding the data processing burdens of the information system to be developed for the System of Labor Offices (SOLO).

Table II-2

Regional Unemployment Rates in Poland, 1990-92

Year	1990	1991	1992
North-East (Polnocno-Wschodni)	9.5	16.4	18.6
Central-East (Srodkowo-Wschodni)	6.1	10.9	11.2
South-East (Poludniowo-Wschodni)	5.9	11.1	13.0
Capital (Stoleczny)	4.3	8.9	10.5
Central (Srodkowy)	7.9	14.9	15.9
South (Poludniowy)	4.0	8.3	9.7
North (Polnocny)	6.4	14.0	17.1
Central-West (Srodkowo-Zachodni)	6.7	12.8	14.9
South-West (Poludniowo-Zachodni)	7.3	13.9	15.7
National Average	3.5	9.7	13.3

B. Description of Labor Market Programs

The guidelines for an MIS presented in this report describe a system context for the management of eight particular labor market programs. The names of these programs are given in Table II-3. Rules governing the operation of the eight programs are specified in the Act dated October 16, 1991 on Employment and Unemployment (Dz. U. No. 106, item 457). In this section we briefly review the rules under which these programs operate. In the following, the Act dated October 16, 1991 on Employment and Unemployment (Dz. U. No. 106, item 457) is simply referred to as the Act. For several of the programs the rules have been revised since the Act was passed in 1991. In the descriptions given an attempt is made to give the most recent rules which are in effect.[4]

Table II-3
Labor Market Programs in Poland, September 1993

A.	Unemployment Compensation
B.	Placement Service
C.	Retraining
D.	Loans to the Unemployed for Small Business Start-up
E.	Loans to Employers for Job Creation
F.	Public Works
G.	Intervention Works
H.	Wage Subsidies for Hiring Recent Graduates

a.   Unemployment Compensation

Rules for unemployment compensation are stated in Articles 20-24, 28, 30, and 32-35 of the Act. Details about payment of unemployment compensation were issued as Order dated December 17, 1991 on Detailed Rules of Placement Services, Counselling, Registration of Unemployed and Job Seeking Persons, and on Qualifying for Services Specified in the Regulations on Employment and Unemployment (Dz. U. No. 122, item 541) by the Minister of Labor and Social Policy. Revisions were included in act dated 3 October 1992 on the change of the act on employment and unemployment (Dz. U. 78, item 394).

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[4]The descriptions of rules governing operation of labor market programs which appear in this section are based on English translations of acts and orders provided by the Polish Ministry of Labor and Social Policy. To check accuracy, the descriptions have been reviewed by Dr. Andrzej T. Mierzwicki of the National Labor Office and Mr. Robert Jedynak, Esq. of the Kraków Voivod Labor Office.

To be eligible for Unemployment Compensation (unemployment compensation) it must be the case that: 1) no job offers are available, no training or retraining is available, no intervention works or public works job is available, and no additionally created work places are available, 2) for 12 months preceding the date of registration the person was employed for at least 180 days or was covered by social insurance performing other than agricultural activity for a period of at least 180 days. The 180 day employment condition is not applied if the claimant was: laid off by the employer because of economic difficulties, is a graduate (a person is a graduate for 12 months from the day of leaving school), recently released from the military, recently receiving a recovery or disability allowance, recently released from a penal institution, reemployed after a period of collecting unemployment compensation but not for 180 days because of the economic difficulties of the employer, or for women who have taken a leave to bring up a child.

While the Act specified that monthly benefits would replace certain percentages of previous wages depending on the duration of unemployment, the act dated 3 October 1992 (Dz. U. 78, item 394) set the amount of the unemployment compensation allowance at a uniform nationwide level of 36 percent of an average salary. The act dated 15 February 1992 on the change of certain acts concerning employment and retirement provisions (Dz. U. 21, item 84) specifies that the President of the National Statistical Office shall announce the level of average monthly pay every three months in *Monitor Polski*.

Under the Act the amount of the monthly benefit varied for a number of reasons: the duration of being registered as unemployed, the occupation of previous activity, e.g. student, the industry of job, e.g. exports, the conditions of separation from the previous employer, e.g. without required advance notice or due to workers fault, or if vocational training for young people stopped. Presently there are only three circumstances in which the monthly unemployment benefit will differ from 36 percent of the average monthly pay.

> (1) Article 20, item 12 of the Act states that, "young persons employed in order to be trained, who have been made redundant due to economic difficulties of the employer, graduates from special schools (schools for disabled children), and disabled people within 12 months from the date they are qualified for performing certain jobs, persons seeking jobs for the first time are entitled to an unemployment benefit which amounts to 12 percent of the average monthly pay."

> (2) Persons covered by the regulations on special rules of dissolving contracts of employment due to economic difficulties of the employer are entitled to an unemployment benefit which amounts to 75 percent of the average pay, but only if a woman is 55 years of age and a man is 60 years of age and there is no suitable job offer for him/her and if he/she has worked for a period which qualifies him/her in the future for the old age pension.

> (3) The benefit for persons participating in training is 115 percent of the unemployment benefit.

Unemployment benefits become payable on the first day after benefits are claimed. The maximum duration is 12 months; entitlement is extended to 18 months for women having worked 25 years and men 30 years. If birth is given during the period of compensation an extension shall be granted. Under certain conditions, unemployment compensation will be extended for short periods up to the time of eligibility for the old age allowance. After completing an approved retraining program eligibility for benefits is extended for a period of training if the LLO has no placement available. The LLO issues eligibility decisions. Interest is payable by the LLO if eligibility is wrongly denied and benefits are delayed. The act dated 3 October 1992 (Dz. U. 78, item 394) states that unemployed graduates only become eligible 3 months after the day of registration and continue only until the end of the 12th month after graduating from school, so that the maximum duration for graduates is 9 months.

Unemployment compensation is denied or suspended for 1) failure to report monthly to the LLO, 2) refusal of a valid work offer, 3) unavailability for work because abroad or other reason, 4) quitting a job which resulted in the expiration of a contract for employment if the contract for employment was dissolved without termination through the fault of the employee 5) refusal of medical exams to assess readiness for work, 6) receiving a loan or a credit for starting economic activity, 7) being in detention awaiting trial, 8) earning in a month income exceeding half of the national minimum monthly pay, 9) during military service, 10) receiving a disability or survivors pension, 11) collects a child care allowance after the expiration of a contract for employment, 12) having a spouse with household income exceeding two times the average pay. The standard benefit denial period is 90 days. A claimant who has received an overpayment must repay the amount within 14 days after receiving notice from a LLO.

The period of collecting an unemployment benefit, from which social insurance premiums are paid through the relevant Local Labor Office, is included in the period of employment for the purposes of pension entitlement. Article 28 of the Act states that monthly unemployment compensation payments are rounded up to the next larger 1,000 zlotys. Article 30 of the Act grants the Council of Ministers the right to shorten or lengthen the duration of unemployment compensation in administrative regions (gminas) depending on the situation.

Unemployment compensation is available on special terms for unemployed farmers. Social insurance contributions shall be made for farmers who qualify for unemployment compensation. Transfers shall be made from the labor fund to support unemployed farmers who qualify for unemployment compensation. To qualify farmers must have worked at least 180 days in another establishment in the last year, been released due to business problems experienced by that establishment, and not be owners of more than 1 calculation hectare. The rules of benefit entitlement are set forth in the Act, while the Administrative Code of Practice (ACP) specifies the procedures themselves. The ACP states administrative procedures for operation of labor offices including the following: making administrative decisions, appeals of decisions, complaints to the Main Administrative Court, procedures and manner of deliveries, etc. Labor Offices are public administration bodies and operate (e.g., issue decisions, consider appeals, etc.) in accordance with the ACP.

b.   Placement Service

Rules governing operation of the public Placement Service are covered in Articles 11, 12, and 29 of the Act. To this day Placement Service continues to operate under these rules. Administrative procedures for the Placement Service were issued as Order dated December 17, 1991 on Detailed Rules of Placement Services, Counselling, Registration of Unemployed and Job Seeking Persons, and on Qualifying for Services Specified in the Regulations on Employment and Unemployment (Dz. U. No. 122, item 541).

The Placement Service is established to help unemployed workers and enterprises fill job vacancies. The services are provided free of charge to all and are based on the following principles: 1) available to all, 2) voluntary services, 3) equality of service to job seekers without regard to nationality, political or social orientation, gender, religion or other circumstances, 4) openness--all vacancies are publicly announced. Under the law, establishments are obliged to report to the nearest LLO all job vacancies and opportunities for vocational preparation, but there is no penalty if openings are not reported. LLOs have the responsibility to register unemployed and job seekers.

To retain eligibility for services of the SOLO, unemployed persons are obliged to report to an LLO at least once a month, as well as whenever called by the LLO to confirm their job readiness, to take a job, or to receive information on opportunities for employment, training, or retraining. The VLOs and LLOs shall provide vocational guidance, direction to a job, or direction to training. Medical, psychological, and pedagogic examinations should be administered by VLOs and LLOs to assess the job readiness of unemployed persons. The costs of these examinations may not be imposed on the unemployed persons.

The administrative procedures issued as Order dated December 17, 1991 on Detailed Rules of Placement Services, Counselling, Registration of Unemployed and Job Seeking Persons, and on Qualifying for Services Specified in the Regulations on Employment and Unemployment (Dz. U. No. 122, item 541) states procedures and regulations for the operation of placement departments within LLOs. Procedures covered include: (1) registration of unemployed people and job seekers, (2) keeping records of unemployed and job seekers, (3) providing aptitude testing and vocational guidance, and (4) soliciting and registering job vacancies.

c.   Retraining

Rules governing operation of training programs are covered in Articles 13-15 of the Act. To this day training paid for from the Labor Fund continues to operate under these rules. If there are no reemployment opportunities in a local area then LLOs may initiate training or retraining. The LLO should organize retraining particularly when 1) there is a lack of any vocational skills among the unemployed, 2) there is a need to change their qualifications due to the lack of job offers which would match their qualifications and the state of their health in the local area, 3) individual unemployed persons have lost the ability to work in their previous occupation.

A training benefit may be paid to an unemployed person who qualifies for the unemployment benefit. In any case, retraining should not exceed 6 months, and may not exceed 12 months. The training benefit amounts to 115 percent of the unemployment benefit. If unemployed persons are not eligible for unemployment compensation the training benefit is paid by the LLO. If a person quits training before completing a course of study they must reimburse the costs of training. If such a person is entitled to the unemployment benefit he/she does not have to reestablish benefit entitlement. After quitting training, he/she automatically reacquires this entitlement. If a trainee is otherwise eligible to receive unemployment compensation that person is also entitled to: 1) family and nursing allowances and death grants, 2) benefits due for job accidents and occupational diseases, 3) benefits of the health care system. Also, during periods out of work, social insurance contributions are made. Benefits are also paid for members of the family.

d.   Loans to the Unemployed for Small Business Start-up

.   Rules governing operation of the Small Business Start-up program are covered in Article 16 of the Act. To this day the Small Business Start-up program continues to operate under this law. Administrative procedures for granting and monitoring loans were issued as the Order of the Minister of Labor and Social Policy dated December 17, 1991 on the rules for granting loans from the Labor Fund (Dz. U. No. 122, item 539).

Local Labor Offices may grant loans in lump sums to unemployed workers for self employment. The loan may not exceed 20 times average pay. If self employment is continued for 24 months, 50 percent of the loan amount may be forgiven by the LLO. Loan contracts are made with the LLO at prevailing interest rates and under rules administered by the MOLSP. Lists of persons granted loans are public. The administrative procedures issued in the Order of the Minister of Labor and Social Policy dated December 17, 1991 on the rules for granting loans from the Labor Fund (Dz. U. No. 122, item 539) require certain elements in the business plan of the loan applicant, specify the rate of interest for payment on the loan, set the maximum term of the loan, and require immediate repayment if the agreed on business plan is not pursued.

e.   Loans to Employers for Job Creation

Rules governing operation of the Loans to Employers for Job Creation program are covered in Article 16 of the Act. To this day the Loans to Employers for Job Creation program continues to operate under these rules. Administrative procedures for granting and monitoring loans were issued as the Order of the Minister of Labor and Social Policy dated December 17, 1991 on the rules for granting loans from the Labor Fund (Dz. U. No. 122, item 539).

Local Labor Offices may grant loans to existing businesses to organize new places for employment. The amount of the loan may not exceed 20 times average pay per new work place created. New work places must be organized for at least 24 months. Loan contracts are made with the LLO at prevailing interest rates and under rules administered by the MOLSP. Lists of persons granted loans are public.

The administrative procedures issued as the Order of the Minister of Labor and Social Policy dated December 17, 1991 on the rules for granting loans from the Labor Fund (Dz. U. No. 122, item 539) require a loan recipient to have had stable employment levels in recent years, to have a specific plan for use of the job creation investment loan including a statement of the exact number of new job places to be created, to pay a specific rate of interest on the loan, to repay the loan within a certain number of months, and to immediately repay the loan if the agreed on job creation investment is not pursued.

f.   Public Works

Rules governing operation of the Public Works program are covered in Articles 18-19 of the Act. To this day the Public Works program continues to operate under this law. Administrative procedures concerning principles of organizing Public Works were issued as the Order of the Minister of Labor and Social Policy dated December 17, 1991 on the rules of intervention works and public works (Dz. U. 122, item 540).

Upon application of the organizer of a public works project, the pay and the social insurance premium for an unemployed person sent by a LLO and employed in a public works project are covered from the Labor Fund up to 75 percent of the average pay for each person sent and employed. Public works may be operated by municipal (gmina) authorities or by local representatives of national government administration. The Ministry of Labor and Social Policy has set forth the following general principles for organizing Public Works projects: (1) Public Works projects should be infrastructure investments like roads, forestry, communication and so forth, (2) Public Works projects should not compete with any existing business, (3) Public Works projects should recruit workers through the Local Labor Offices (LLOs), (4) proposals for Public Works projects should be sent by LLOs and VLOs to their employment councils for review, finally (6) contracts for Public Works projects must state the number of persons to be employed, the type of work to be done, the dates of work, the funding arrangements, and the LLOs who will refer workers. While not a requirement of the Act, it is a practice of the Ministry to give priority for Public Works projects to those areas with the highest unemployment rates. Indeed, the amount of funds allocated to projects in an area from the Labor Fund increases with the level of unemployment in the area.

g.   Intervention Works

Rules governing operation of the Intervention Works program are covered in Articles 18-19 of the Act. To this day the Intervention Works program continues to operate under this law. Administrative procedures concerning principles of organizing Intervention Works were issued as the Order of the Minister of Labor and Social Policy dated December 17, 1991 on the rules of intervention works and public works (Dz. U. 122, item 540). A minor revision of the Order of the Minister of Labor and Social Policy dated December 17, 1991 on the rules of intervention works and public works (Dz. U. 122, item 540) was issued as Order of the Minister of Labor and Social Policy dated 28 August 1992 changing the order on the organization of intervention works and public works (Dz. U. 69, item 348) which extended the restrictions on layoffs of

agencies granted projects to layoffs at affiliated establishments and to agencies (organizations) which are under liquidation or bankruptcy.

"A Local Labor Office reimburses to the employer part of his expenses connected with hiring an unemployed person within an intervention works project up to the amount of the unemployment benefit that person is entitled to, including the social insurance premium, for a period of six (6) months."[4a]The maximum length of an intervention works project is 6 months. The Ministry of Labor and Social Policy has set forth the following general principles for organizing Intervention Works projects: (1) Intervention Works projects may not compete with any companies, (2) Intervention Works may be undertaken only by companies which during the most recent 6 months did not lay off more than 10 percent of their workers, (3) Intervention Works projects may not be organized by political parties, trade unions, government agencies, churches, or foreign states (4) Intervention Works projects should recruit workers through the Local Labor Offices (LLOs), and (5) contracts for Intervention Works projects must state the number of persons to be employed, the type of work to be done, the dates of work, the funding arrangements, and the LLOs which will refer workers.

h.   Wage Subsidies for Hiring Recent Graduates

Rules governing operation of the Wage Subsidies for Hiring Recent Graduates program are covered in Articles 26-27 of the Act. To this day the Wage Subsidies for Hiring Recent Graduates program continues to operate under this law. Establishments that hire unemployed recent graduates are exempt from paying a tax contribution to the Labor Fund on wages paid to their employees for up to 9 months.[4b] Furthermore, a LLO may pay to the hiring establishment an amount equal to the unemployment compensation and social insurance contribution which the LLO would have disbursed had the person been unemployed. This payment can be made for a period for which a graduate could collect the benefit if the graduate is to be employed in this firm for longer than 12 months.

C. Goals for Labor Market Programs

This section reports and summarizes the goals for each of the labor market programs listed in Table II-3. These goals have been stated by the TOR 2 Advisory and Steering Committees. A clear statement of program goals is the first step in developing a management system which is geared toward achieving outputs rather than focusing on process. The program

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[4a]From Article 17 of the Act.

[4b]For recent graduates, the effective maximum duration of unemployment compensation entitlement is nine (9) months. A person who registers as unemployed immediately upon graduation, becomes eligible for compensation after three months if all attempts to find employment fail. Such a recent graduate then loses entitlement twelve (12) months after leaving school.

performance indicators presented in this report were selected to be incentive compatible with the goals for programs stated here.

a.   Unemployment Compensation/Unemployment Insurance:
   -   temporary benefits for jobless persons.
   -   motivating beneficiaries for reemployment.

b.   Placement Service:
   -   finding appropriate reemployment for job seekers.
   -   motivating registrants to search for jobs.
   -   maintaining a steady supply of job vacancy listings.

This task is implemented through: (1) winning over and precise recognition of job offers from employers, (2) matching of vacancies with job seekers, (3) assessing abilities, predispositions and expectations of job seekers, (4) supporting the conclusion of new employment contracts, and (5) providing assistance for the unemployed to actively find a job.

c.   Retraining:
   -   providing professional skills to persons having no profession,
   -   over the long-term, to adjust the skill structure of labor resources to the changing needs of the economy.
   -   getting trainees reemployed.

This aim is implemented through: (1) skills development, (2) providing new professional skills with better reemployment opportunities, (3) preventing layoffs due to skill deficiencies (on-site training), and (4) informing vocational schools of areas of existing or forecasted jobs.

d.   Loans to the Unemployed for Small Business Start-up:
   -   promoting development of small business,
   -   enabling the unemployed to gain reemployment through self employment,
   -   creation of new jobs,
   -   relieving the Labor Fund from payment of unemployment compensation.

e.   Loans Employers for Job Creation:
   -   promoting reemployment through creation of new jobs,
   -   supporting the expansion of local businesses,
   -   fostering privileged economic sectors (branches),
   -   relieving the Labor Fund from payment of unemployment compensation.

f.   Public Works:
   -   reducing long-term unemployment,
   -   developing local infrastructure to support creation of new jobs,
   -   providing workers with new skills,
   -   promoting reemployment by ensuring readiness to start work.

g.   Intervention Works:
-    reducing long-term unemployment,
-    creating the opportunity for permanent employment,
-    providing workers with new skills,
-    supporting the development of local businesses,
-    fostering privileged economic sectors (branches),
-    promoting reemployment by ensuring readiness to start work.

h.   Wage Subsidies for Hiring Recent Graduates:
-    facilitating employment of recent graduates,
-    supporting the acquisition of practical job skills by graduates thereby increasing their chances of finding permanent employment.

To give a systematic overview of the goals of labor market programs and to guide the specification of performance indicators (PI) which support these goals, Figure II-1 is provided below. The left hand side of Figure II-1 is presented as a pyramid to reflect the fact that there is a hierarchy in the goals for labor market programs. The right hand side of Figure II-1 gives of translation of the four levels in the pyramid into categories of PI.

The over-riding goal of the collection of labor market programs is to achieve reemployment of unemployed persons. This goal is represented at the top of pyramid in Figure II-1. Two categories of performance indicator measure the success in achieving this goal: r - rate of reemployment, and c - cost of reemployment. The second level in the pyramid summarizes the goal of providing transitional services which ease the transition from unemployment to reemployment. The categories of performance indicators measuring cost of achieving this goal are: a - administrative cost, and s - support cost.

In the pyramid of Figure II-1 the bottom two categories are separated from the top two by a double line to indicate a major distinction. The bottom two layers of the pyramid encompass goals which are more program specific. The third level is separated from the fourth because for some programs there are certain important legal spending limitations and loan recovery considerations. Categories of performance for this third level which regards maintaining efficiency in financing are: u - under spending limit, and l - loan recovery rate. The base of the pyramid is the variety of program specific goals, performance indicators for this category are labeled p - program specific goals. This is the base of the pyramid because it is the diversity in the array of programs which supports having a collection. The diversity is necessary because it is impossible to serve all needs with a single program.

Another part of the strategy in developing performance indicators is specify them so that comparisons across programs are possible. Certain of the PI across programs should be similar enough to allow this. Indeed for two pairs of programs nearly all PI within pairs will be identical. The two pairs are (1) Public Works and Intervention Works, and (2) Loans for Self Employment and Loans for Job Creation.

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r — Rate of Reemployment

c — Cost of Reemployment

a — Administrative Cost

s — Support Cost

u — Under Spending Limit

l — Loan Recovery Rate

p — Program Specific Goal:

Promote
Reemployment

Provide
Transisional Services

Maintain
Efficiency in Financing

A Variety of Other
Program Specific Goals
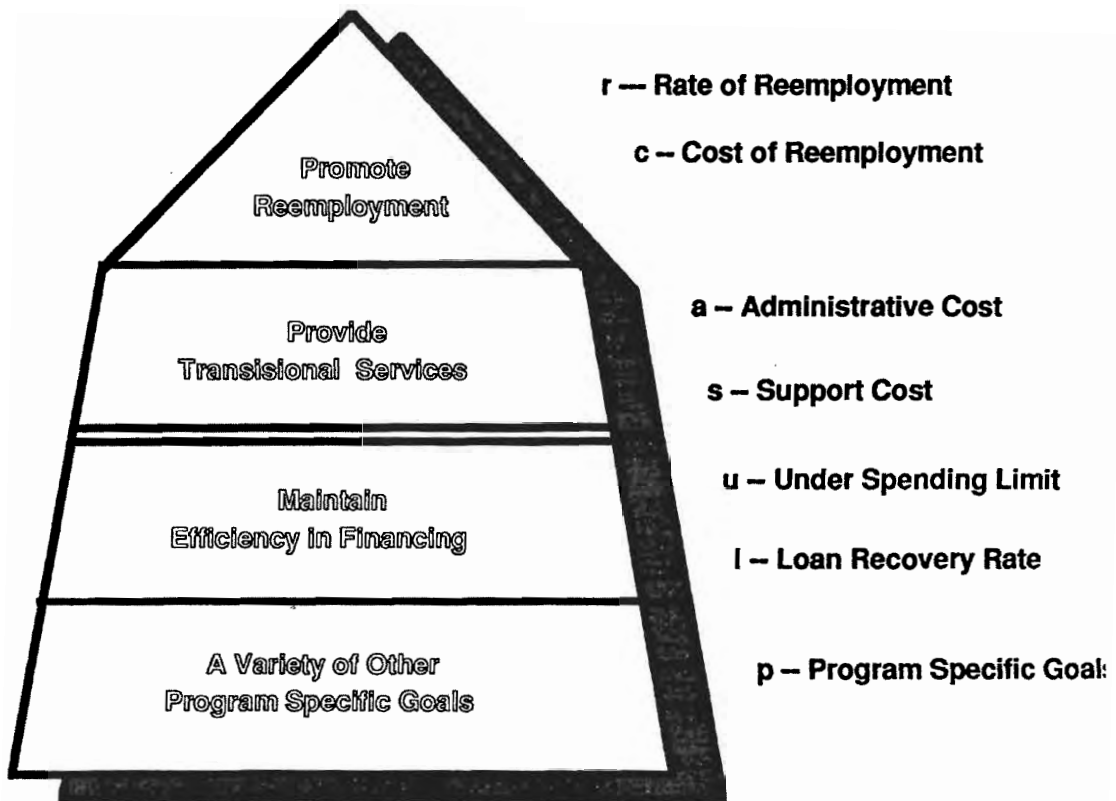
Figure II-1 Hierarchy of Goals for Labor Market Programs
Guided by Performance Indicators

D. Institutional Structure and Processes Supporting the Strategy of Labor Market Policy

In order to plan the optimum structure of the information systems, it is necessary to develop enterprise-wide functional models of the separate parts of SOLO: NLO, VLO, LLO. Based on these models, one composite model of the enterprise-wide functions can be defined. The composite model is presented in the Information View part of this report given as Section III.

1. National Labor Office (NLO)--Enterprise-wide Model

Figure II-2 illustrates the enterprise-wide functional model of the National Labor Office (NLO). Eighteen principal functions of the NLO have been identified and grouped into four areas:

* 6 General Management Functions
* 3 Labor Offices Functions
* 3 Economics Functions
* 6 Labor Market Functions

These functions can interact through the following networks:

* Local Area Network (LAN) at the NLO level
* Wide Area Network (WAN) between NLO and VLO levels
* Global Area Networks (GAN) between SOLO and foreign partners

2. Voivod Labor Offices (VLO)--Enterprise-wide Model

Figure II-3 depicts the enterprise-wide functional model for Voivod Labor Offices (VLO). Nine principal functions of the VLO have been identified and grouped into three areas:

* 4 General Management Functions
* 3 Economic Functions
* 3 Labor Market Functions

These functions can also interact via LAN, WAN, and GAN.

3. Local Labor Offices (LLO)--Enterprise-wide Model

Figure II-4 illustrates the enterprise-wide functional model for Local Labor Offices (LLO). Ten principal functions of the LLO have been identified and grouped into three areas. As for the VLO Model. Communications between functions pass via the same types of networks.

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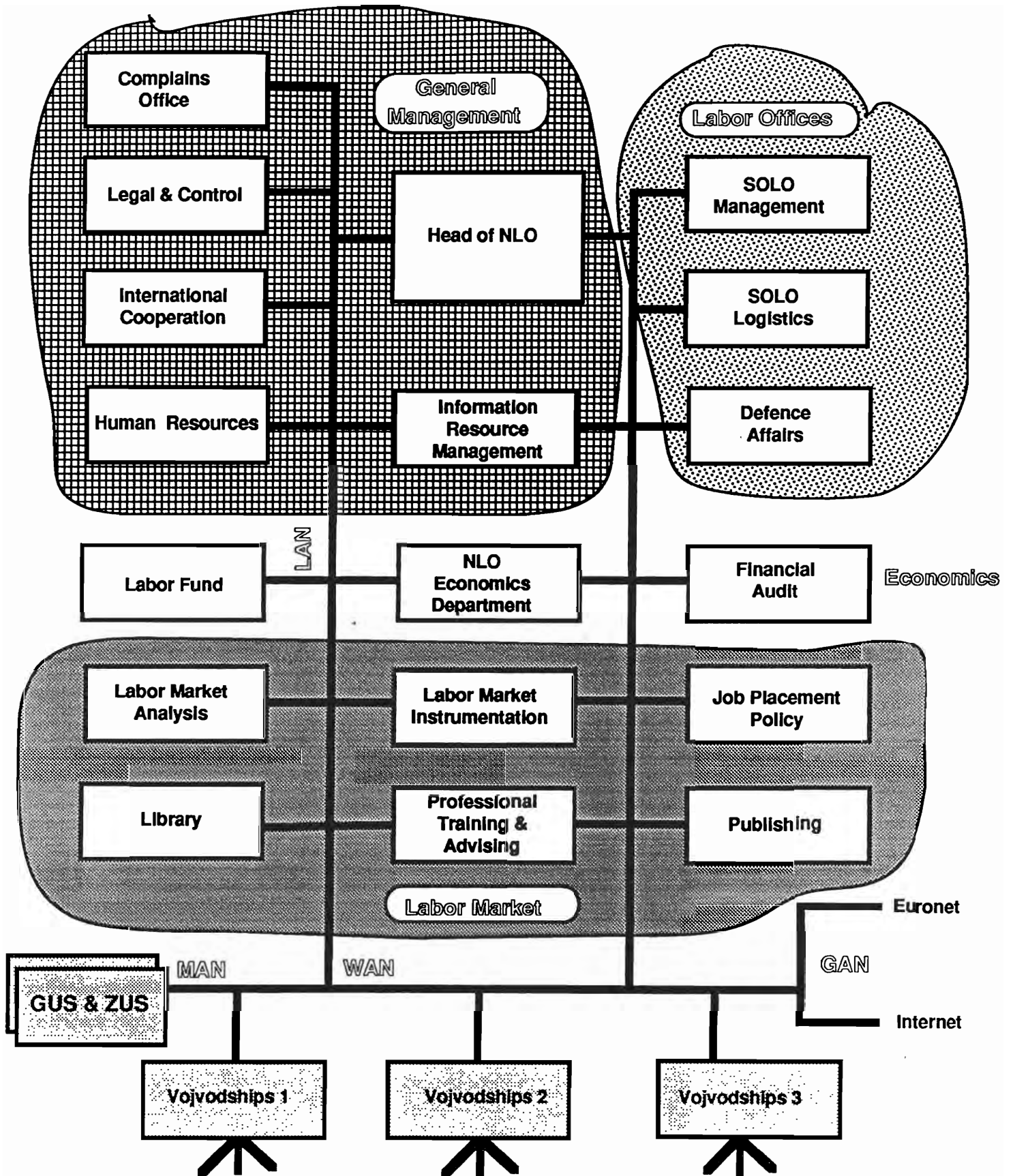
Figure II-2   Enterprise-wide Functional Model of National Labor Office (NLO)
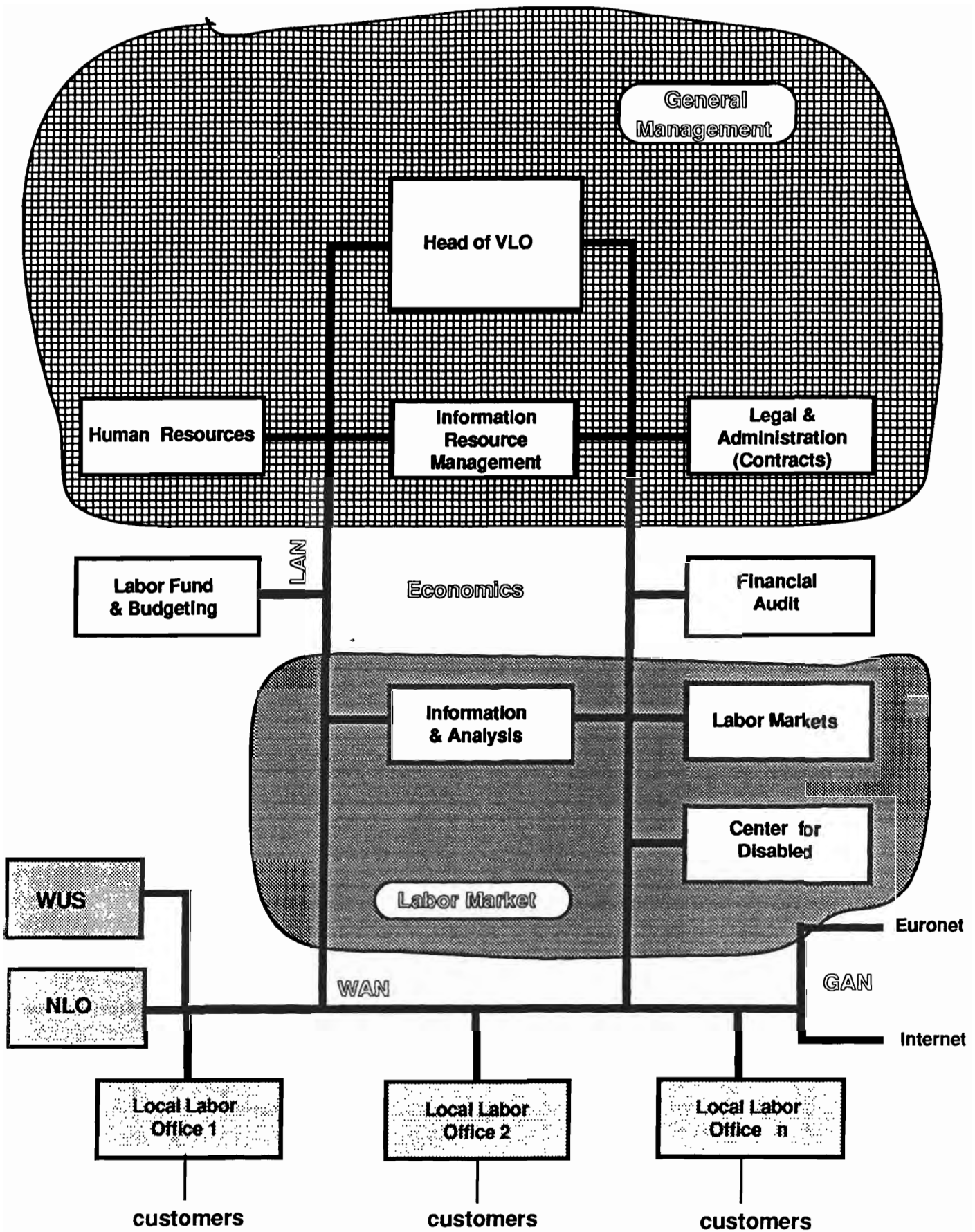
Figure II-3   Enterprise-wide Functional Model of Vojevodships Labor Office (VLO)
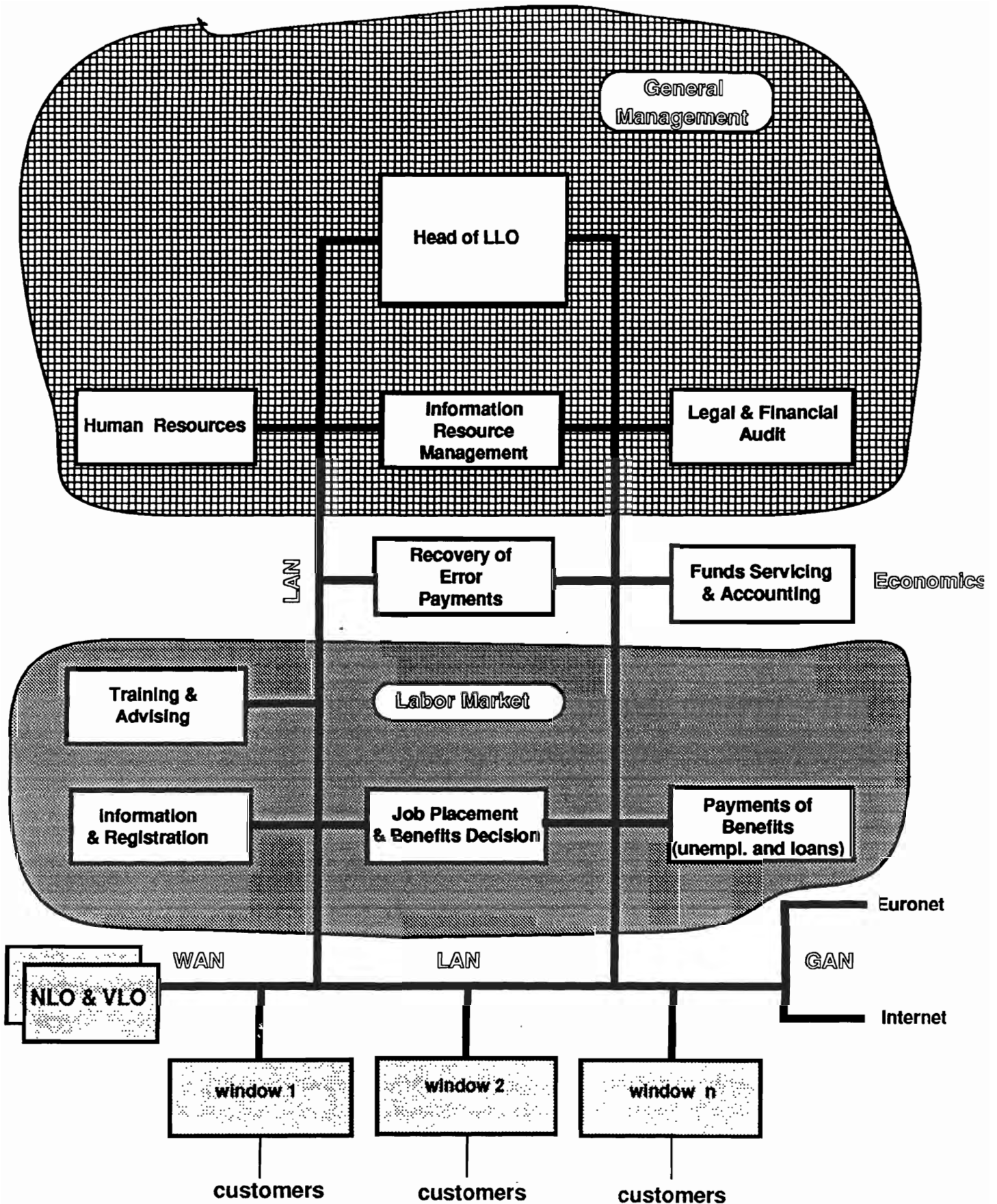
Figure II-4   Enterprise-wide Functional Model of Local Labor Office (LLO)

4. Enterprise-wide Business Architecture

Figure II-5 illustrates the aggregated architecture of the enterprise-wide businesses from the client's point of view. The Labor Fund and Programs provide opportunities for unemployed workers. The unemployed apply for job placement, unemployment compensation, referrals to training and other services provided by LLOs. Operation of these programs generates data which provides feedback allowing for analysis of program operation and audit of organization activities. The reemployment business activities of the LLO are guided by policy and legislation developed at the national level.

Figure II-6 illustrates the institutional view of labor market programs operations at the level of the VLO and LLO. The VLO provides planning and funding for labor programs, and subsequently the LLO executes these plans and contracts in the interest of unemployed.

E. A SYSTEM FOR EVALUATION, PLANNING, AND BUDGETING

The following is a description of each of the separate parts of the system for evaluation, planning, and budgeting of labor market programs in Poland. The final subsection in this part describes how all the separate parts relate to each other.

1. Performance Indicators

The approach to monitoring the effectiveness of labor market programs focuses on timely measures which can be readily implemented and should become a natural part of the management system. These measures are called performance indicators (PI).

Naturally, the set of performance indicators (PI) should be selected to guide program operations toward the goals of the programs, but the most fundamental principle governing the development of performance indicators is that outcomes rather than process is emphasized. This is particularly important to bear in mind when instituting such a system within government agencies where planning and building of organizations was up until recently the main objective.

To be manageable and useful the performance indicators should be few in number. Particularly during the present period of exceedingly high unemployment in Poland, it is important that the system for monitoring cost effectiveness of labor market programs not impose an excessive administrative burden on voivod and local labor offices where the first priority should be service to clients. The list of PI proposed suggests no more than eight measures for any program. To compute the performance indicators follow-up surveys of program users are required. The follow-up surveys needed to compute the performance indicators should ask no more than ten questions. By limiting performance measurement to a small number of indicators, the follow-up surveys may also remain simple. This should increase the reliability of data gathered, increase the response rate, and increase the likelihood that the system should survive over time thereby yielding valuable information on how programs perform over time.
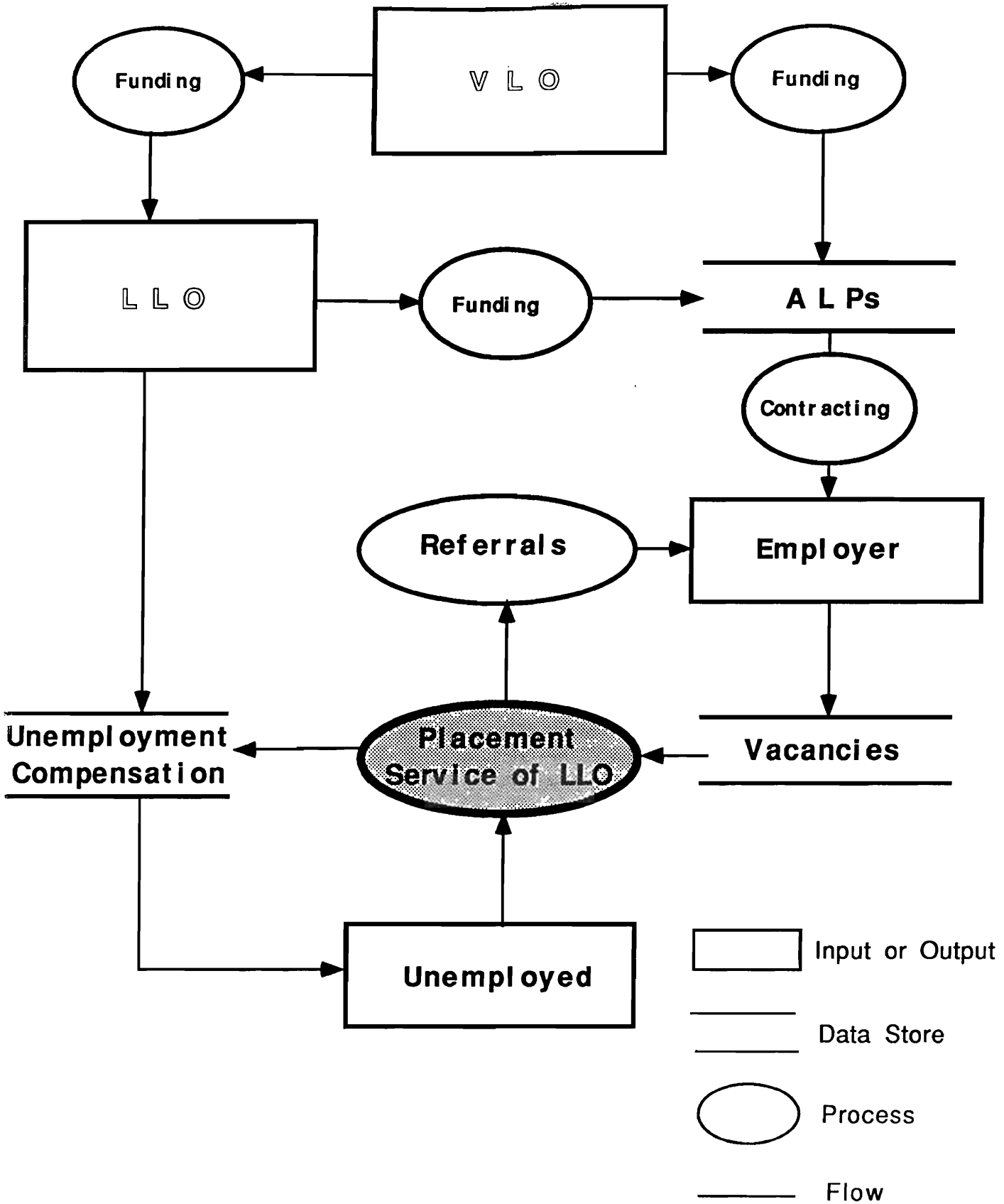
Figure II-6   The Institutional View of Labor Market Programs
(Data Flow Diagram)

Incentive compatibility is another important consideration. In specifying PI for labor market programs it is important that the intermediate goals which result from the PI are consistent with the overall goals stated for the programs. Excellence in program management as measured by the PI should not be associated with unintended negative results. Using the notation introduced in the above discussion of the hierarchy of goals for labor market programs given in Section II.C the PI presented in Table II-4 are each classified as to which goal they reinforce. Following the name of each PI in Table II-4 is a letter denoting the category of performance.

Reviewing the list of performance indicators (PI) for all eight program we can see that the PI specified allow monitoring of how well the goals of the programs are met. A matrix describing this coverage is given as Table II-5. The matrix shows that all the active labor market programs (all programs excluding unemployment compensation which is a passive program) can be compared using PI in terms of "rate of reemployment" (r) and "cost of reemployment" (c). Unemployment compensation and placement service are compared in terms of "administrative cost" (a). All programs except the placement service, where no income support payment is granted, can be compared in terms of "support cost" (s). A type of administrative compliance, whether or not spending is below allowable levels, can be checked for five programs using an "under the spending limit" (u) measure. The net inflow of loan money can be examined for the two programs where loans are made using "loan recovery rate" (l) performance indicators. Finally, because there are unique goals of each program which cannot be achieved using other programs, performance indicators of "program specific goals" (p) are included for each program.

The matrix of Table II-5 shows that the system of performance indicators allows comparison across programs and voivods. So that performance indicators information can both be used within voivods to select the optimal mix of programs and by the National Labor Office to allocate funds.

Since the voivods vary in their industrial mix and economic strength and the programs vary in their duration and scale, most PI proposed are stated in relative terms. The exceptions are PI for earnings. In the section below on data for computing performance indicators it is recommended that in addition to data on regional characteristics, data should be gathered on the demographic characteristics of the individuals served by the programs. This should allow the targets for performance indicators to be adjusted to account for differences in the difficulties of achieving reemployment and differences in the populations served in the various regions. The adjustment methodology can be used to encourage targeting of service to the hard to employ by giving extra weight for service to target groups with particular barriers to employment such as the long term unemployed.

Table II-4

Performance Indicators for Labor Market Programs

A.   Unemployment Compensation

A.1   Administrative cost per recipient (a)
A.2   Average compensation for a month unemployed (s)
A.3   Average duration as a proportion of entitled duration (d)
A.4   Average days receiving unemployment compensation (p)
A.5   Average earnings replacement rate (p)

B.   Placement Service

B.1   Referrals per person reemployed (r)
B.2   Average cost of finding reemployment for one person (c)
B.3   Average cost per employment exchange visit (a)
B.4   Average number of days until a vacancy is filled (p)
B.5   Average cost of gaining one new job vacancy listing (p)

C.   Retraining

C.1   Proportion of course completers employed at follow-up (r)
C.2   Average cost per course completer employed at follow-up (r)
C.3   Average cost per training program entrant (s)
C.4   Proportion of entrants completing training course (p)
C.5   Average monthly earnings of course completers working at follow-up (p)
C.6   Proportion of employed course completers working in occupation of training at
         follow-up (p)
C.7   Proportion of course completers still employed at firm of training at follow-up (for
         retraining of employed) (p)
C.8   Average cost per course completer still employed at firm of training at follow-up (for
         retraining of employed) (p)

D.   Small Business (Loans to the Unemployed for Start-up)

D.1   Proportion of persons still self-employed at follow-up (r)
D.2   Amount of money granted per person still self-employed at follow-up (c)
D.3   Average amount of money granted per loan (s)
D.4   Proportion of the maximum allowable amount of money given on the average loan (u)
D.5   Loan repayments received as a proportion loans given (l)
D.6   Additional persons hired per person still self-employed at follow-up (p)

Table II-4--continued

E.   Job Creation (Loans to Employers)

E.1   Proportion of persons still employed at follow-up (r)
E.2   Loan amount per person employed at follow-up (c)
E.3   Average loan amount per new job place (s)
E.4   Average loan as a fraction of maximum allowable amount (u)
E.5   Loan repayments received as a proportion loans given (l)
E.6   Proportion of promised new job places actually created (p)

F.   Public Works

F.1   Proportion of workers gaining regular employment (r)
F.2   Cost of subsidy per employee gaining regular employment (c)
F.3   Average cost of subsidy per employee (s)
F.4   Proportion of unemployed refusing to take part (n)
F.5   Proportion of maximum allowable amount of money spent on the average public works project (u)
F.6   Fraction renewing eligibility for unemployment benefit (p)

G.   Intervention Works

G.1   Proportion of workers gaining regular employment (r)
G.2   Cost of subsidy per employee gaining regular employment (c)
G.3   Average cost of subsidy per employee (s)
G.4   Proportion of unemployed refusing to take part (n)
G.5   Proportion of maximum allowable money spent on the average intervention works project (u)
G.6   Fraction renewing eligibility for unemployment benefit (p)

H.   Graduates Subsidies (Wages for recent graduates)

H.1   Proportion of participants in regular jobs at follow-up (r)
H.2   Cost per participant in regular job at follow-up (c)
H.3   Average monthly cost of wage subsidy (s)
H.4   Average duration of subsidy as a proportion of maximum allowable duration (d)
H.5   Proportion of all registered unemployed graduates participating in the program (t)
H.6   Average monthly wage subsidy as a proportion of maximum allowable cost (u)
H.7   Average duration of subsidy per subsidized employee (p)

Table II-5
Performance Indicators Coverage of Categories of Performance from the Hierarchy of Program Goals

Program Name	Categories of Performance						
	r	c	a	s	u	l	p
A. Unemployment Compensation			x	x			x
B. Placement Service	x	x	x				x
C. Retraining	x	x		x			x
D. Small Business	x	x		x	x	x	x
E. Job Creation	x	x		x	x	x	x
F. Public Works	x	x		x	x		x
G. Intervention Works	x	x		x	x		x
H. Graduates Subsidies	x	x		x	x		x

r - Rate of Reemployment
c - Cost of Reemployment
a - Administrative Cost
s - Support Cost
u - Under Spending Limit
l - Loan Recovery Rate
p - Program Specific Goals

2. Data for Computing Performance Indicators

The data system which evolved for labor market programs in Poland through the early 1990s was designed to guarantee payment of benefits, it was not designed to yield adequate information for assessing program effectiveness. Indeed, during the beginning of this decade reliable administration of labor market programs was a central part of government policy to ensure social stability and confidence during a period of great social and economic uncertainty. As the rate of growth in unemployment is gradually declining, and the demands on the central budget are growing, reliable information to document the degree of effectiveness of labor market programs is essential.

Proper assessment of the effectiveness of labor market programs requires person level data on a variety of characteristics of program participants. Since the majority of labor market programs are entered after registration with the placement service, to economize on data storage requirements it is recommended that basic demographic data be stored only once--at the time of placement service registration. This is a workable solution provided the data is stored in a relational data base management system (RDBMS) as recommended elsewhere in this report.

An attempt should be made to completely register with the placement service all persons seeking services, no matter how casual the use of the placement service. Demographic data on: age, gender, and education; and previous job information on: skill level, wages, hours, and industry type; should be recorded in the placement service register with a similar data entry mechanism used for employed participants who use programs designed to prevent unemployment such as work sharing and retraining of the employed. The person level data on characteristics allows examination of program results by group. It also allows the development of a methodology for adjusting performance indicators, and may allow quasi-experimental net impact evaluations of programs.

For many programs, an attempt should be made to gather information on the reemployment job (or out of the labor force status) at the time a client leaves labor market program services. Part of this could be gathered by the job referral slip used by the placement service. To develop a follow-up data base for most programs a simple mail questionnaire which is accompanied by a stamped return envelope, and a brief cover letter requesting the assistance of former program participants in evaluation, should be mailed to program participants three months after their most recent labor market program contact. The questionnaire should involve only about ten questions and mainly attempt to get information on: (1) current employment status, (2) the level of earnings if employed, and (3) the occupation if employed--to check the occupational relevance of training.

Appendix A to this report presents twenty lists of data which ideally should be accessible through some type of relational data base management system (RDBMS) such as Oracle or Ingress. The twenty lists are given as if they were variables in the tables of an RDBMS which would be accessible for production of reports using the structured query language (SQL). The twenty lists include variables for person level data on individual program

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participants, variables for data on particular projects, loans, or courses provided by an enterprise, and variables for data on voivod and local labor offices. It is proposed that the data base be structured by primary and secondary keys in the tables. The primary key is the personal identity number which is maintained for the individual by the PESEL organization; the secondary keys are the local labor office number, the voivod labor office number, the training course number, the public or intervention works project number, and the loan number.

The data requirements are presented in separate lists so that the sufficiency of the data for producing the performance indicators may be easily confirmed. Appendix B to this report presents a list of explicit formulae for computing the performance indicators. The first five lists of data are needed for evaluating all programs. By gathering this data once, redundancy is reduced in the system and storage requirements are thereby minimized. The first three of these data lists regard information on the individual program participants: (1) demographic and previous job information--which should be available from the placement service registration form, (2) person level data at program exit--from a survey to be filled out upon finishing a program, and (3) person level data from a follow-up survey--administered three months after program exit. The next two lists call for information from the labor office level: (4) the local labor office, and (5) the voivod labor office. It should also be mentioned that much of the data called for in the data lists given below should not be used to directly calculate the PI, but rather to develop an adjustment methodology to account for the varying economic conditions in the areas and to improve targeting of services. In addition to the adjustment methodology, the demographic data on age, gender, education, occupation, and industry allows examination of program results by group, and should allow a variety of quasi-experimental net impact evaluation of programs in the future.

3. The Voivod Labor Market Programs Master Plan

The Voivod Labor Market Programs Master Plan serves as the long-term agreement between the National Labor Ofice and a voivod on basic matters of operations, management, and evaluation. A suggested outline for the contents of a Voivod Labor Market Programs Master Plan is given as Appendix C to this report. Once there is agreement between a voivod and the National Labor Office on a Master Plan, it would be in effect indefinitely. However, it should be updated periodically as important details change.

The master plan fosters a unified view of labor market programs and allows a minimum of redundancy in the annual plan which covers individual labor market programs. The master plan establishes procedures for things which are relevant to several different labor market programs. Since the master plan identifies goals for labor market programs, the substance of the master plan is to be determined before an attempt is made to finalize the content of the annual plan. That is to say, a clear statement of general Labor Market Programs goals should be made before specific short term targets can be specified for individual labor market program activities.

4. The Voivod Labor Market Programs Annual Plan

The Labor Market Programs Annual Plan serves as the official agreement between the Voivod and the National Labor Office on how the specific labor market programs should be operated in the coming year. A suggested outline for the contents of a Voivod Labor Market Programs Annual Plan is given as Appendix D to this report.

The annual plan gives details concerning program management and monitoring. It also presents annual reports on program activity and PI. The annual plan establishes an activity forecast which is a prediction concerning the volume of clients to be served. The annual plan also sets voivod performance targets, and provides a forecast of direct costs for each program.

The annual plan presents a unified financial plan which considers the direct costs of all labor market programs as well as related administrative costs. This financial plan also includes a unified budget estimate and a funding request for the coming year.

5. The Voivod Quarterly Reports

Voivods should be required to file reports on activity in each funded Labor Market Program on a quarterly basis. These reports should be brief including mainly summary statistics on the volume of program activity. A brief narrative describing employment conditions in the voivod should be prepared by the voivods and included in the quarterly report.

6. The National Labor Office Labor Market Programs Master Plan

The National Labor Office Labor Market Programs Master Plan should start with a statement of the relevant laws and ministerial decrees governing labor market programs. This should be followed by a clear statement of National Labor Office goals for Labor Market Programs. The nature of the relationship between voivod and local employment center offices should also be clearly stated. In addition to laws and decrees governing labor market programs, the National Labor Office Labor Market Programs Master Plan should specify all other labor laws to be explicitly observed by parties using money allocated for Labor Market Programs.

Just as for the voivod master plan, the National Labor Office's Labor Market Programs Master Plan should cover matters of operations, management, evaluation, and finance--including the algorithm to be recommended to the Main Employment Council for the annual budget allocation process.[5] Since the National Labor Office wishes the voivods to consider the collection of labor market programs as a unified set of services which should be used collectively to address program goals in a cost effective fashion, the National Labor Office should administer labor market programs to the voivods in a consistent and uniform way. The National Labor

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[5]The Main Employment Council is a tri-partite body with representatives from business, labor, and government which makes general recommendations to guide labor market policy.

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Office Labor Market Programs Master Plan should detail the processes for review of the Voivod Labor Market Programs Master Plans and modifications, the Voivod Labor Market Programs Annual Plans, and the Voivod Labor Market Programs Quarterly Reports.

The importance of clearly specifying authority for decisions about Labor Market Programs, and the processes for review of Labor Market Programs materials from the voivods cannot be overemphasized. For the voivod and local employment offices to operate efficiently and consistently, they should receive efficient and consistent treatment in their interactions with the National Labor Office on matters concerning Labor Market Programs.

The National Labor Office Labor Market Programs Master Plan should also specify procedures for making announcements to the voivod and district employment center offices about changes in legal statutes affecting the operation or funding of labor market programs. Dates should be set for filing of reports and plans by the voivod and response from MOLSP. The calendar of these dates should be specified and the schedule should be strictly maintained.

7. The National Labor Office Labor Market Programs Annual Plan

The National Labor Office Labor Market Programs Annual Plan should cover three important matters. First, procedures for review of voivod annual plans. Second, revision of Labor Market Programs performance indicators (PI) and performance targets. And third, development of the annual budget allocation algorithm for Labor Market Programs.

The calendar for preparing and reviewing the voivod annual plans is established in the National Labor Office Labor Market Programs Master Plan, the details of the review process should be specified in the National Labor Office Labor Market Programs Annual Plan. This plan should also include a description of the procedures for reviewing achievement of performance targets by the voivods for the previous year.

In the annual plans submitted by each voivod a unified financial plan is presented. These should be evaluated and used in preparing the Labor Market Programs annual financial plan which is the basis for (1) budget requests from parliament, and (2) budget allocation of money for Labor Market Programs among the Voivods.

8. Implementation of the Planning and Evaluation Process

The following are the sequential steps in the unified evaluation and planning process:

(1) Starting from the Employment Law decrees, the National Labor Office in consultation with the Main Employment Council, specifies labor market programs goals. These goals are included in the National Labor Office Labor Market Programs Master Plan, and are announced to the voivods in the Guidelines for Preparing a Voivod Labor Market Programs Master Plan.

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(2) After considering the Labor Market Programs and National Labor Office goals, voivod labor administrations set their Labor Market Program goals in consultation with their Voivod Employment Council.[6] The voivod goals for labor market programs are stated in the Voivod Labor Market Programs Master Plan, which also details the relationship between the voivod and the National Labor Office on Employment Law program matters.[7]

(3) The National Labor Office estimates the "Number of job seekers registered with the placement service" for the planning year for each voivod. The estimate on job seekers is the voivod basis for estimates of activity in other labor market programs. These items are communicated to the voivods in the Guidelines for Preparing a Voivod Labor Market Programs Annual Plan.

(4) The Voivod Labor Market Programs Annual Plan summarizes program activity and achievement of performance targets. It describes the management, monitoring, and planning procedures used in the voivod. Voivods consider the National Labor Office estimate of the "Number of job seekers registered with the placement service," and other details of their economic situation and specify performance targets for each Labor Market Program for the coming year. Voivods also prepare a financial forecast of the cost associated with planned activities. All of this is included in the Voivod Labor Market Programs Annual Plan submitted to the National Labor Office.

(5) The National Labor Office reviews the annual plans submitted by the voivods and prepares a summary report for the Ministry of Labor and Social Policy (MOLSP) which, in addition to a summary of the voivod reports, includes the National Labor Office estimates for the coming year. The Employment Programs Planing department in the MOLSP receives and reviews the annual plans from the voivods and the summary report from the National Labor Office and prepares a MOLSP Labor Market Programs Annual Plan which is the basis for the Employment Law budget request from Parliament and recommendations for allocation of funds for Labor Market Programs.

(6) The MOLSP reviews voivod performance on the previous year's PI and specifies national performance targets and adjustment weights for the coming program year.

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[6]The Voivod Employment Council is a tri-partite body with representatives from business, labor, and government which makes general recommendations regarding the direction of voivod labor market policy.

[7]A one day conference or seminar will be held annually with the planning representative from each voivod in attendance to review the Guidelines for Preparing a Voivod Master Plan.

The MOLSP informs voivods about funding available for their labor market programs for the coming year.

(7) The voivods solicit training, job creation investments, public works, and intervention works proposals and prepare for the process of proposal review and project award.

(8) The voivods submit reports to MOLSP on program activity quarterly.

This sequence is appropriate for the first year of planning and evaluation under the new system. After Voivod Labor Market Programs Master Plans are in place, only steps three through eight should be repeated annually. Any revisions to Voivod Labor Market Programs Master Plans should be agreed on by the National Labor Office and the voivods as circumstances change.

Section III.   INFORMATION VIEW

   A. Choice of an Information Management Paradigm

   Solutions for the Labor Programs Information Management Systems (LP-IMS) should
be selected using an information management paradigm. A paradigm is "a pattern," "model,"
or "collection of accepted examples" of current practice, which include law, theory, application
and instrumentation together. In information management, a shift occurs when the "rules"
change and therefore the means of success also change. In information management (IM), a
shift in the IM paradigm introduces a new era of IM. The IM discipline may be divided into
the following eras:

era	period	paradigm	solution
I	1950-60s	wave-driven	routines
II	1960-80s	data-driven	applications
III	1985s	self-reliance	end user computing, CASE
IV	1990s	system-driven	systems
V	1993s	technology-driven	networks
VI	1995s	enterprise-driven	multi-system integration

   The IM paradigm for LP-IMS proposed is "*enterprise-driven.*" This means that some
previous paradigms such as "self-reliance," "system-driven," and "technology-driven" will be
included. However, the "*enterprise-driven*" paradigm means that the systems development will
be a mixture of top-down and bottom-up architectural planning, which reflects the present state
of the professional art.

   B. Choice of Information Management Goals and Target Results

   Specifying the goal of LP-IMS involves key choices about the strategic role of computer
information processing in SOLO operations. The are four general categories of IM goals from
which to select. They are:

   *   Support Goal--information systems operations are not "vital" to critical business
          operations and are not included as part of future strategic decisions.

   *   Factory Goal--information systems operations are vital to the successful
          functioning of well defined, well accepted company operations. However,
          information systems are not a part of future strategic operations.

   *   Strategic Information Technology (IT) Goal--IT operations are critical to the
          current strategy and to the future strategic IS direction of the institution. IT
          advanced systems applications are part of any new strategic direction.

Strategic Information Systems (IS) Goal--IS operations are critical to the current strategy and to future strategic directions of the institution. IS applications are a part of any new strategic directions.

We propose for SOLO operations a combination of two goals: Factory and Strategic IS. This means that IS have to be very reliable because they are fundamental to the strategy for the institution's future. The SOLO IS should focus on the following results:

- Improved LP performance (Service and Operations IS)
- Improved organizational performance (Administration IS)
- Improved executive decision-making (End-User Computing)
- Information quality (concept generation via Control Systems)
- Improved Information culture (Office Automation Systems)

The achievements of these results will depend upon the priorities of the systems development and installation. This is provided in Section VI which is entitled Strategy for Implementing the MISs.

C. Choice of Information Management Strategy

A master IM strategy normally should indicate:

1. *Target results and systems goals.* The criteria SOLO will use to measure the success of its information systems, and the expected level of achievement?

2. *The nationwide SOLO strategy* and its influence on systems strategy.

3. *The strategic systems domain* sought. That is, what Information System (IS) is critical for the SOLO mission?

4. *Differential advantage in information tools delivery and computer services (IT systems)* within the strategic systems domain. On what information infrastructure will the SOLO seek an advantage over competitors (private sector information vendors) in providing its' services?

5. *Necessary strategic thrusts and their appropriate timing* for the SOLO to move from its present systems logic integration position to some other desired position established by steps two and three in the master IM strategy.

These key systems strategic composite aims for SOLO are presented in Figure III-1. The IM creed and mission are more fully explained in Section V which is entitled Resource View. The national strategy is to promote reemployment using programs established by governmental acts and ministerial decrees so as to advance development of a market economy. The target results are identified and monitored within the system strategic domain which focuses on the Service and Operations IS, Administration IS, and Office Automation Systems. Differential advantage can be achieved through the establishment of Strategic Planning, and Maintenance and Data Centers in a networked environment, composed of interconnected WAN and LANs. The latter support the client-server architecture.

Figure III-2 illustrates the guidelines for the development and implementation of the MISs. Strategic systems planning will be based on custom made architectures based on chosen IM aims. Planning of the Program-oriented MISs will be undertaken first, this will be followed by planning of the architecture for Administration-oriented MISs. In order to avoid an information archipelago or development of unconnected islands of automation, we propose a Bill of Systems Processor for the MIS Complex. Based on the federated systems methodology the architectures of enterprise-wide MISs Environment will be offered to emphasize the ideas of the chosen IM paradigm.

D. Information Systems Planning

1. Enterprise-wide Functional Model and Control Systems

Figure III-3 illustrates the Enterprise-wide Functional Model, in which each function is divided into processes in order to select different types of information control systems. The following 12 control information systems have been identified:

Legal Control System (LCS)
Purpose: To store and retrieve legal documents and administrative guidelines.
Processes: Queries, analysis, and extracts.
Frequency: On demand.
Input: Official acts and administrative guidelines.
Output: Queries and reports.

Fund Control System (FCS)
Purpose: To store, calculate, allocate, analyze and retrieve financial information.
Processes: Accounting, means allocation, and control.
Frequency: Periodic and on demand.
Input: Official funding documents.
Output: Queries, reports, and analysis.

IM Creed
Create a chance

IM Mission
1. To provide the best info services in the country for unemployed and government
2. Automate office workers routines and facilitate executive judgment

National Strategy
Promote Reemployment

IM Paradigm & Goal
Enterprise-driven

Target Results
1. LP performance improved
2. Organizational perf. improved
3. Decision-making improved
4. Information quality
5. Information culture

System Strategic Domain
Service & Operations IS
Administration IS
Office Automation

Differential Advantage
Strategic Planning
Maintenance & Data Centers
WAN & Client - Server

System Strategic Thrust
Systems diversification & proliferation

Systems Strategy

Figure III - 1 Composit Systems Aims for SOLO

SOLO Systems
Composit Aims

SOLO Mission

Program Goals

SOLO Strategy

Tor 2

I M Creed Mission Goal

System Strategy

Program MIS Architecture
Administration MIS Architecture
Enterprise-wide MIS Environment Arch
Computers Platform Architecture
Networks Matrix Architecture

Strategy-oriented Systems Development

Tor 3

IRM Development

Tor 4
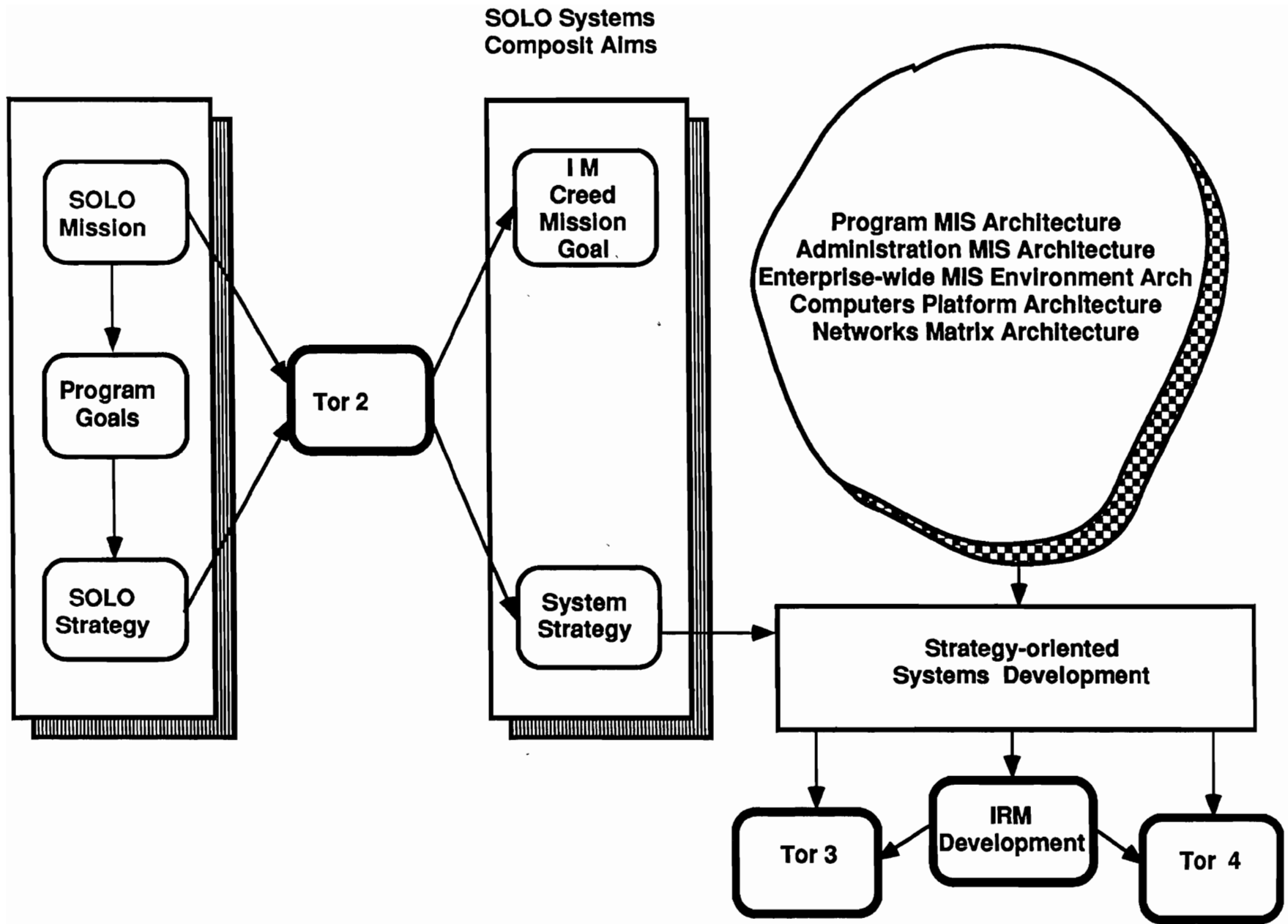
Figure III - 2 Guidelines for the Development and Implementation of MIS(s)
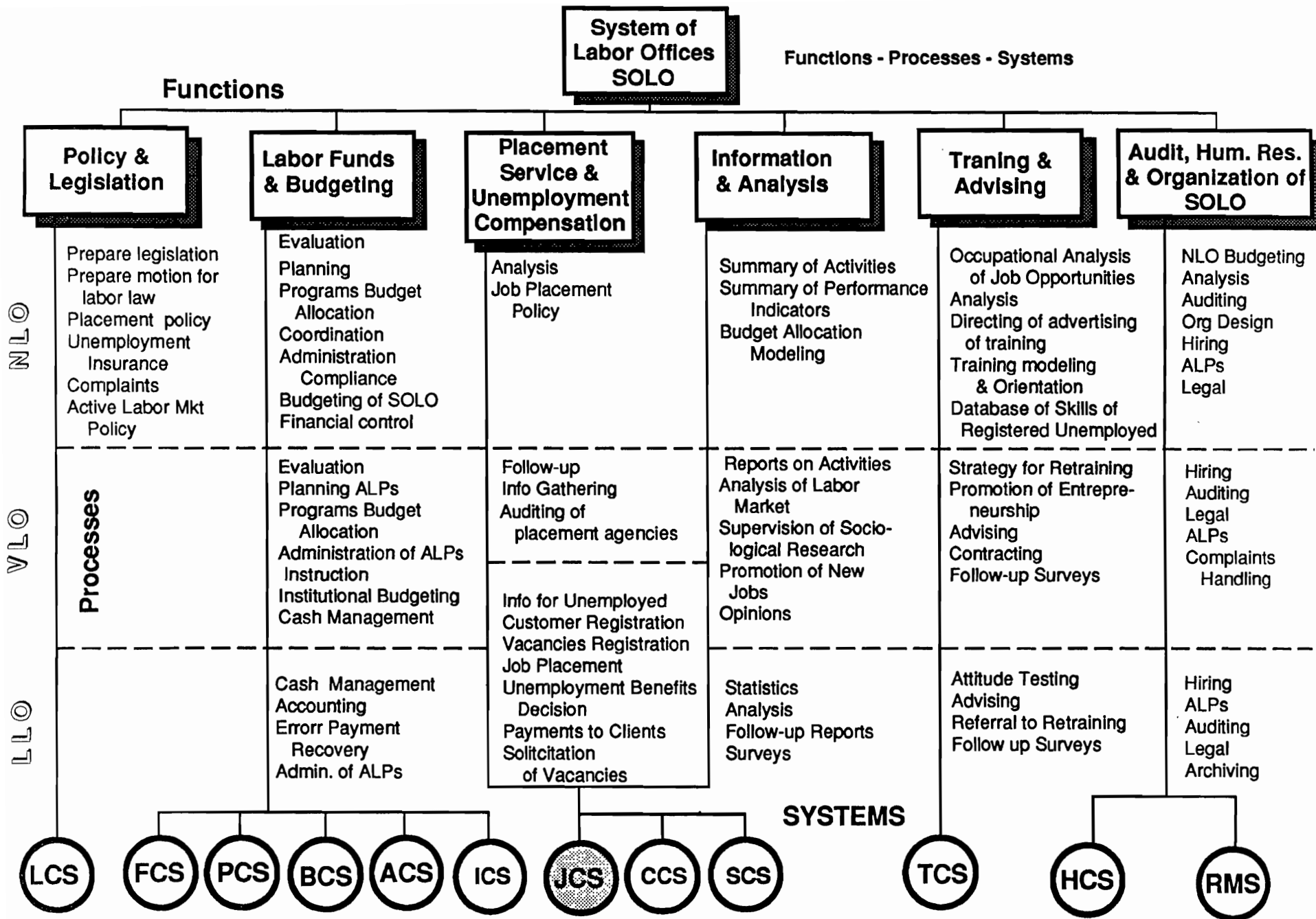
Figure III -3   The Enterprise-wide Functional Model (without Audit & Organization and IRM processes)

Program Control System (PCS)

        Purpose: To store, plan, analyze and retrieve Active Labor Programs benefits and performance indicators.

        Processes: Planning, allocation, registration, control, statistics, and analysis.

        Frequency: Periodic and on demand.

        Input: Plans, indicators, administrative procedures, official program documents, and contracts.

        Output: Queries, reports, and performance indicators statistics.

Budgeting Control System (BCS)

        Purpose: To manage SOLO's institutional budget.

        Processes: Planning, allocating, controlling, and analyzing.

        Frequency: Periodic.

        Input: Official documents.

        Output: Queries and reports.

Accounting Control System (ACS)

        Purpose: To calculate institutional budget, and costs.

        Processes: Accounting, cost control, and payroll.

        Frequency: Periodic and on demand.

        Input: Official documents.

        Output: Queries, reports, and indicators statistics.

Institutional Statistic Control System (ICS)

        Purpose: To compute institutional statistics.

        Processes: Storing, computing, analysis, and retrieving.

        Frequency: Periodic and on demand.

        Input: Performance outcomes from other administrative IS

        Output: Official statistic reports, and queries.

Job Control System (JCS)

        Purpose: To register unemployed and match APLs benefits

        Processes: Registration, storing, updating, matching informing, and retrieving.

        Frequency: On demand.

        Input: Client, SOLO and employers data.

        Output: Compensation, benefits, information, and statistics.

Complaints Control System (CCS)

        Purpose: To register, react , and handle customer complaints.

        Processes: Storing, distributing, analyzing, retrieving.

        Frequency: On demand.

        Input: Customer information.

        Output: Official replies, queries.

Statistical Control System (SCS)
> Purpose: To compute APLs statistics.
> Processes: Storing, computing, analysis, and retrieving.
> Frequency: Periodic and on demand.
> Input: Performance outcomes from other program IS.
> Output: Official statistic reports, and queries.

Training Control System (TCS)
> Purpose: To compute institutional statistics.
> Processes: Storing, computing, analysis,and retrieval.
> Frequency: Periodic and on demand.
> Input: Performance outcomes from other administrative IS.
> Output: Official statistic reports, and queries.

Human Resources Control System (HCS)
> Purpose: To manage hiring, promotion and firing of SOLO personnel (9000 workers).
> Processes: Registration, performance analysis.
> Frequency: Periodic and on demand.
> Input: Application and performance data.
> Output: Official reports, and queries.

Records Management System (RMS)
> Purpose: To archive institutional documents.
> Processes: Storing and retrieval.
> Frequency: On demand.
> Input: APLs and institutional records.
> Output: Storage and queries.

2. Architecture of Program--oriented MISs

Figure III-4 illustrates the architecture of program-oriented MISs which consists of a set of 5 databases and 7 control systems. The following databases are planned:

* Service Database (SDB)--supplying data for Legal Control System and Fund Control System
* Operations Database (ODB)--supplying data for Program Control System and Training Control System
* Complaints Database (CDB)--supplying data for Complaints Control System
* Placement Database (PDB)--supplying data for Job Control System
* Programs Statistics Database (PSB)--supplying data for Program Statistics Control System
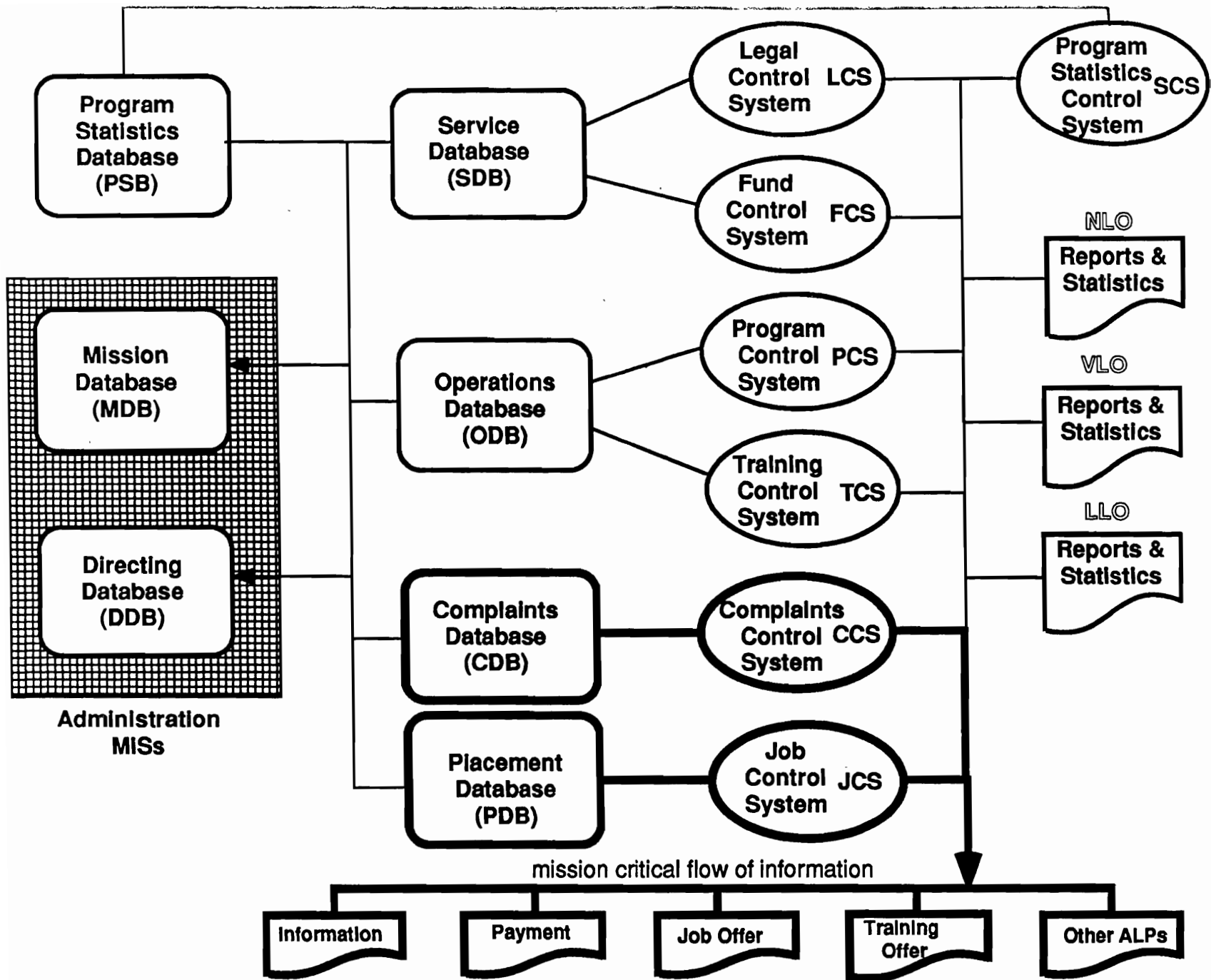
Figure III - 4   The Architecture of Program-oriented MISs

This set supports management of 3 to 5 million unemployed in Poland. It supplies data and information to a set of administration-oriented MISs. It is hierarchical and enterprise-wide.

3. Architecture of Administration--oriented MISs

Figure III-5 illustrates the architecture of administration-oriented MISs supporting the operations of SOLO's 9,000 workers. This set of systems contains 3 databases and 6 control systems. It is a hierarchical, enterprise-wide system. There are the following 2 additional control systems:

Executive Control System (ECS)
> Purpose: To inform executives on mission performance
> Processes: Storing and retrieving aggregated data, information, and concepts.
> Frequency: Periodic and on demand.
> Input: Supplied by all program and administration-oriented systems.
> Output: Official statistic reports and queries.

Directing Control System (DCS)
> Purpose: To inform executives on institutional performance.
> Processes: Storing and retrieving aggregated data, information, and concepts.
> Frequency: Periodic and on demand.
> Input: Performance outcomes from other administrative IS.
> Output: Official statistic reports and queries.

Such administrative systems as HCS, BCS, ACS, ICS have been described in Section III.D.1. Other administrative systems are:

Office Automation consisting of such systems as:
> Electronic Mail at each SOLO level and among these levels.
> Bulletin Boards System (BBS) a communications vehicle for computer conferencing at each level and among levels.
> Word Processing
> Time Management

End-User Computing:
> Spreadsheet Computing
> Database Retrieval
> Presentation Management
> Statistic Analysis
> Notes Management
> Other
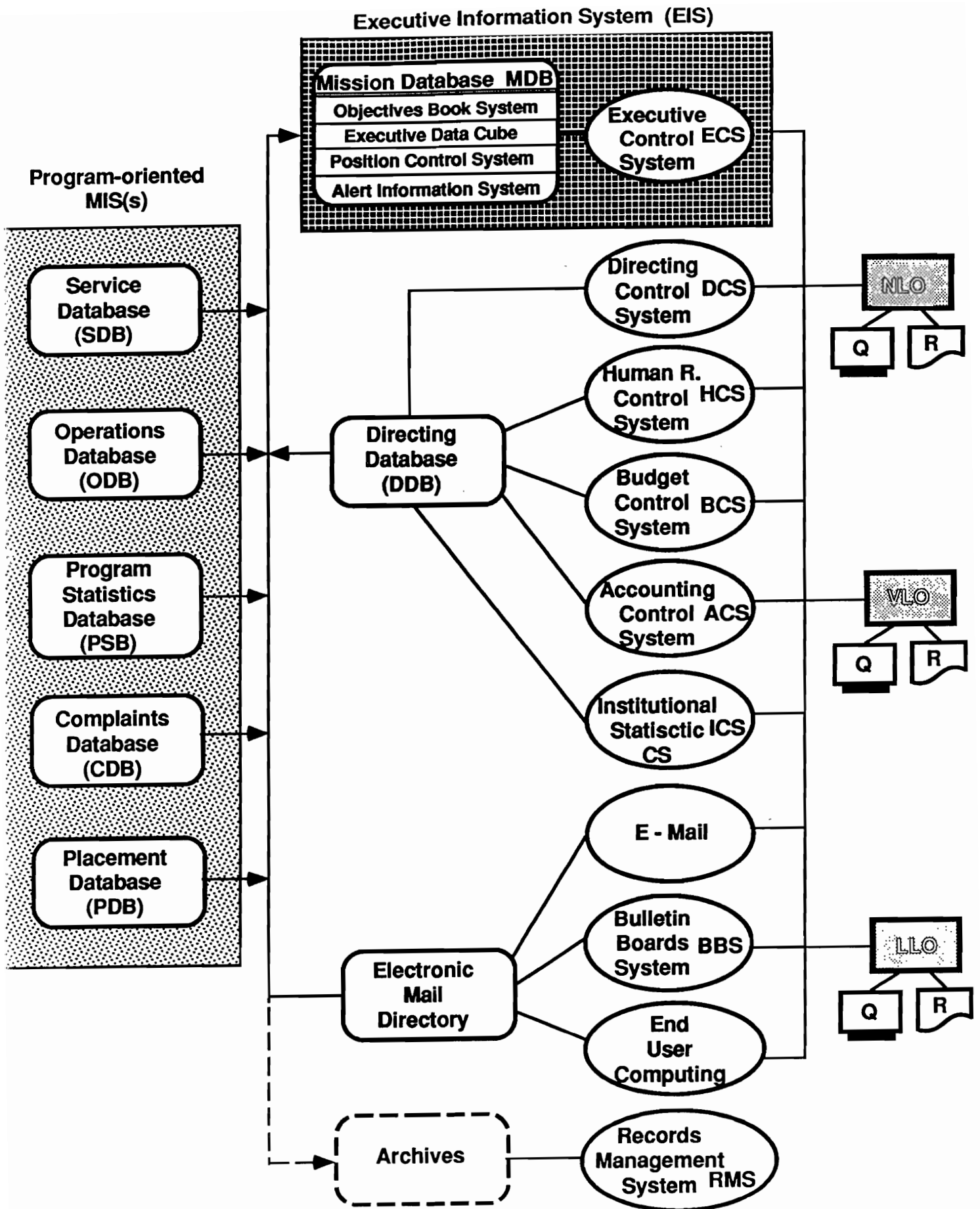
Figure III-5   The Architecture of Administration-oriented MIS(s)
(Q - query,   R - reports)

Records Management System (RMS)
      defined in D.1.

The following databases will support the Administration-oriented MIS:

* Mission Database (MDB) supporting the Executive Control System

* Directing Database (DDB) supporting DCS, HCS, BCS, ACS, ICS

* Electronic Mail Directory (EMD) supporting about 7200 user accounts

E. Bill of Systems Processor and Decomposition of Enterprise-wide MIS Environment

    1. Bill of Systems

The SOLO MIS complex can be expanded into a hierarchy of information systems entities. This hierarchy is a Bill of Systems Processor (BOSP), an analogy to the Bill of Material Processor (BOMP). Figure III-6 illustrates components of the MIS enterprise-wide environment. Each of the components will be described below.

    2. Enterprise-wide Labor MIS Complex.

    a. Program IS Processor

Figure III-7 illustrates The Bill of Program-oriented Information Systems that create a subset of the Labor Programs MIS Complex. This subset is called the Program IS League. This is composed of:

    *   Service IS Union
    *   Operations IS Union

Each System Union is composed of System Federations. The Federation is a set of Information Systems of the same type but integrated through all the levels of SOLO. A level-oriented IS is a set of a databases and a control system.

    b. Administration IS Processor

Figure III-8 illustrates the Bill of Administration-oriented IS Processor. The rules of this Bill are similar to those of the Program IS Processor.

Users (Labor Offices' Workers)

MIS Software
Library

MIS Complex

Network Matrix

Computer Platforms

Data & Knowledge
Bases Constellation
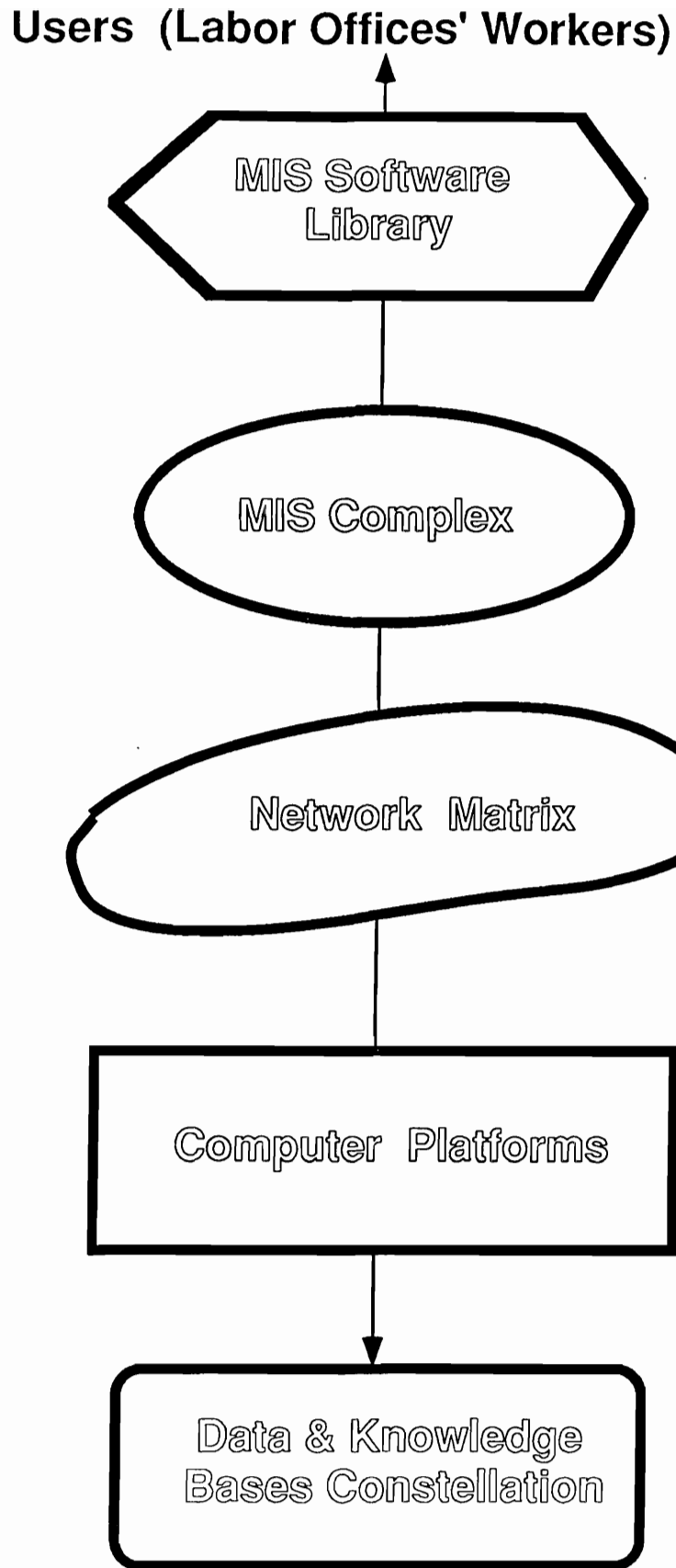
Figure III-6   Components of the MIS Enterprise-wide Environment
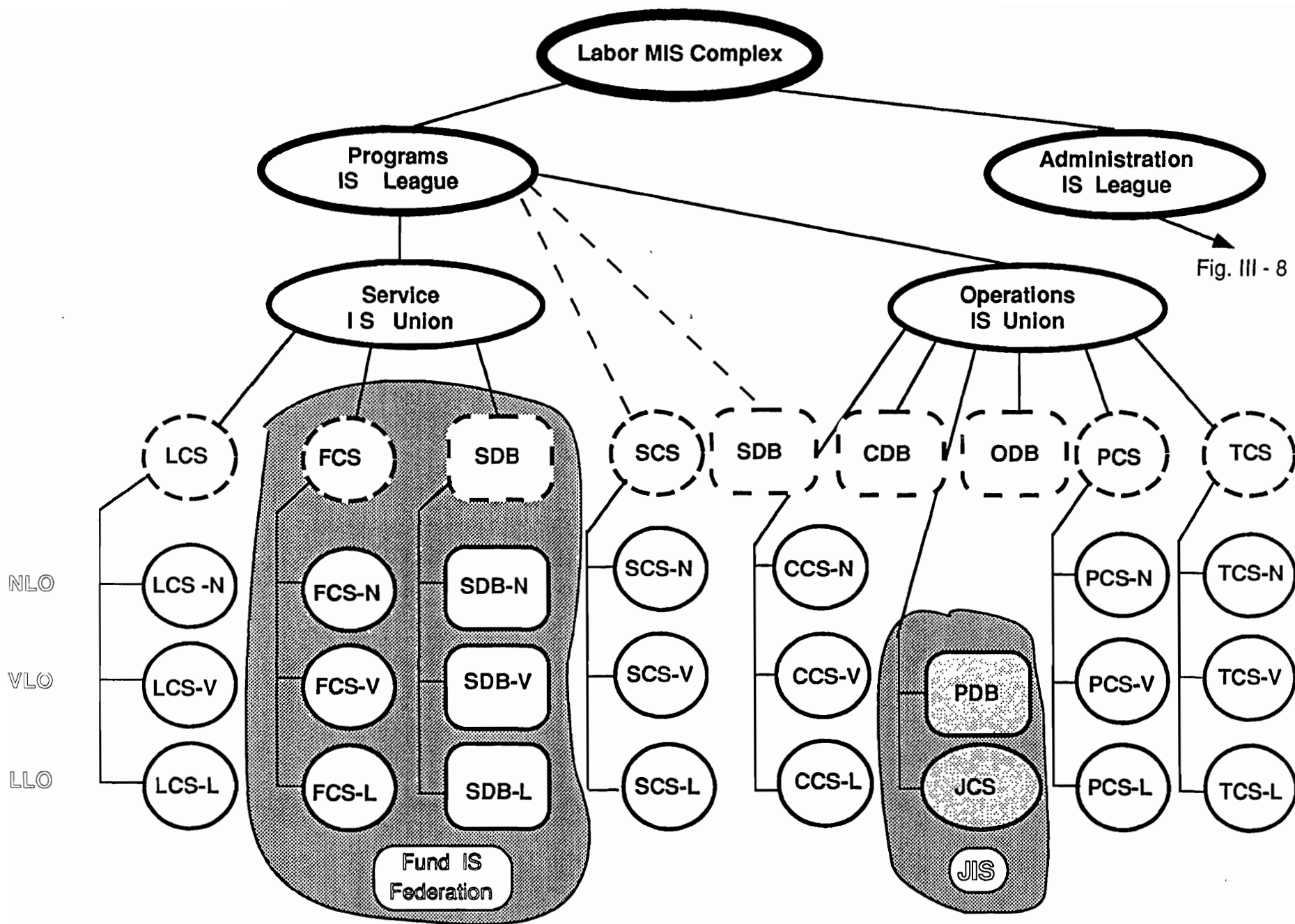
Figure III - 7   Bill of Programs-oriented Information Systems Processor
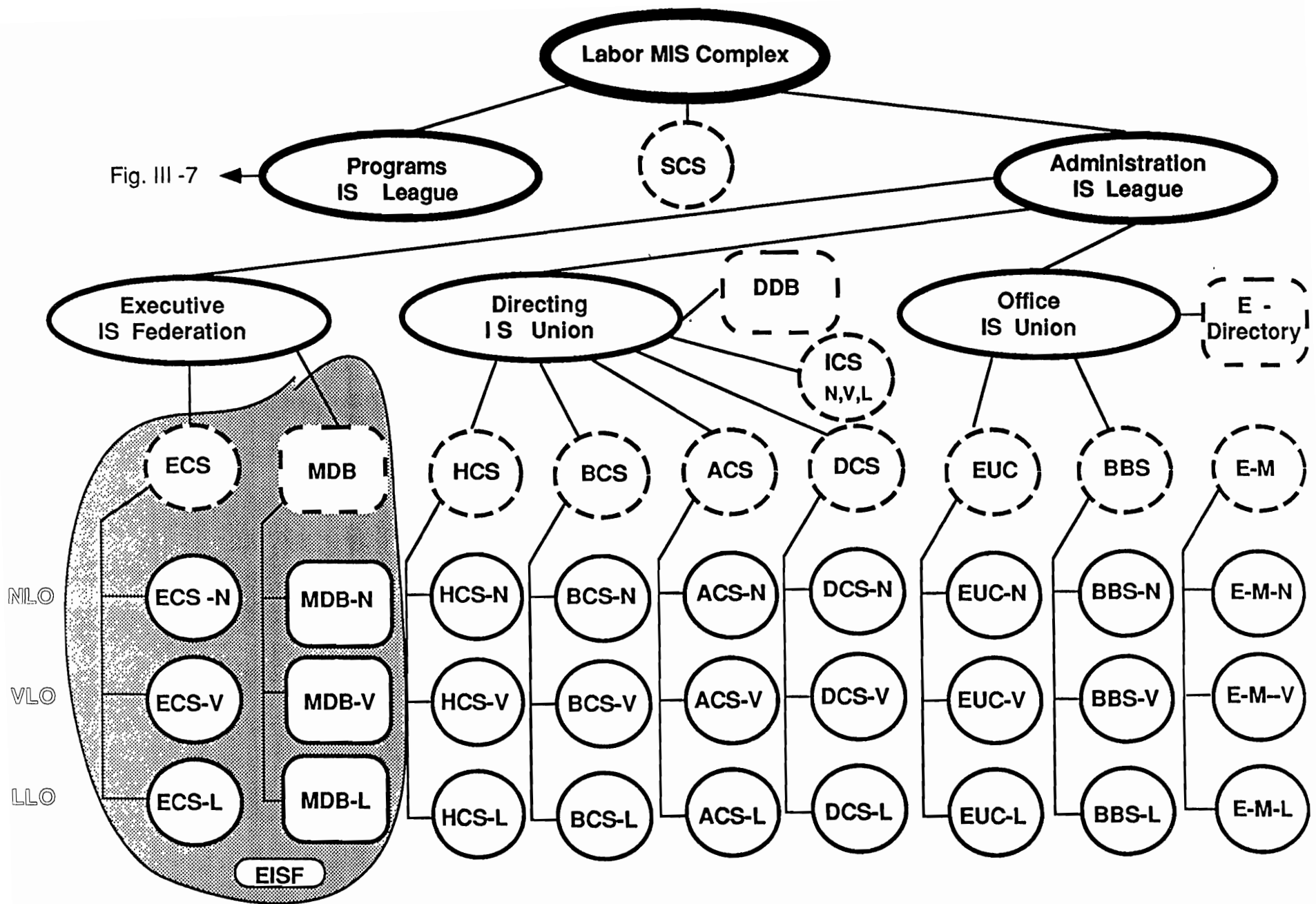
Figure III - 8   Bill of Administration-oriented Information Systems Processor

3. Decomposition of Systems for Unified Design

Since the MIS complex is a hierarchical one it is necessary to design each IS for each SOLO level as a subset of the same enterprise-wide system for all SOLO levels.

4. Index of Systems Environment

Figure III-9 depicts the structure for an index number for MIS components that should be applied in numeration of the set of components. The following system for numeration is recommended:

Environments (position 1):

0 --
1 -- Information Systems Complex
2 -- Data & Knowledge Bases Constellation
3 -- Software Library
4 -- Computer Platform
5 -- Networks Matrix
6 --

IS Leagues (position 2):

0 --
1 -- Program IS League
2 -- Administration IS League
3 --

IS Unions (position 3):

0 --
1 -- Service IS Union
2 -- Operations IS Union
3 -- Office IS Union
4 -- Directing IS Union
5 -- Executive IS Union
6 --

IS Federations (position 4):

0 --
1 -- Legal IS Federation
2 -- Fund IS Federation
3 -- Statistical IS Federation
4 -- Complaints IS Federation
5 -- Program IS Federation
6 -- Training IS Federation

Information Systems (positions 5 and 6):

00 --
01 -- Legal IS
02 -- Funds IS
03 -- Programs IS
04 -- Training IS
05 -- Job IS

10 --
11 -- Human Resources IS
12 -- Budgeting IS
13 -- Accounting IS
14 -- Institutional Statistic IS
.
21 -- Directing IS
.
30 -- Executive IS
.
40 -- Electronic Mail
41 -- Bulletin Boards System
42 -- Time Management
43 -- Word Processing
44 -- Spreadsheet
45 -- Data Management
46 -- Statistical Package
47 -- Computer Graphics Package
48 --

Management Levels (position 7):

N -- NLO
V -- VLO
L -- LLO

The remaining digits of the index number which denote subsystem, activity, function, and program should be developed by the NLO as needs and experience dictate.

F. Architecture of Hierarchical Enterprise-wide MIS Environment

Figure III-10 illustrates the static enterprise-wide architecture of the MIS Environment. It provides a big-picture systems view for all of the SOLO systems.

Figure III-11 depicts the networked architecture of the enterprise-wide MIS complex as a dynamic environment.

Figure III-12 illustrates the aggregated hierarchical architecture of the enterprise-wide MIS environment with goals for each level and category of Information System.

G.   Architecture of Transaction Processing System-Job Control System (JCS).

The Job Control System (JCS) is the core system of the enterprise-wide MIS complex. It serves the unemployed directly providing such services as:

* Registration
* Job matching
* Unemployment compensation
* Referral to ALPs
* Labor market information
* Other information

The JCS system provides feedback to many systems, including:

* Fund Control System
* Program Control System
* Statistic Control System
* Executive Control System
* Other systems
* Other databases

Figure III-13 illustrates the architecture of the JCS. This system currently has several versions implemented throughout the SOLO--see Section VI.B.2 which lists COBRA, RUBIKOM, SOWETO and others which currently operate--with experienced users and developers. The Placement Database should be accessible throughout the SOLO.

LAN - WAN - GAN

Executive Info Systems
Directing Information Systems
Statistics Information Systems

Service IS

Legal Control Systems
Fund Control Systems

Service Database

Office IS

Operations IS

Job Control Systems
Program Control Systems
Training Control Systems

Operations Database
Placement Database

Electronic Mail, Bulletin Board Systems
Time Management, Word Processing
Records Management Systems
E-Mail Directory
Other

Interorganizational IS

Employers
MOLSP
GUS, WUS
ZUS
Other

International IS

Internet
Euronet
DOL-USA
ILO
EC
Other

System Strategy IS

Future IS

End User Computing

NLO VLO LLO

Servers

Workstations

Shared I - O

Figure III - 10   The Enterprise-wide Architecture of MIS Environment
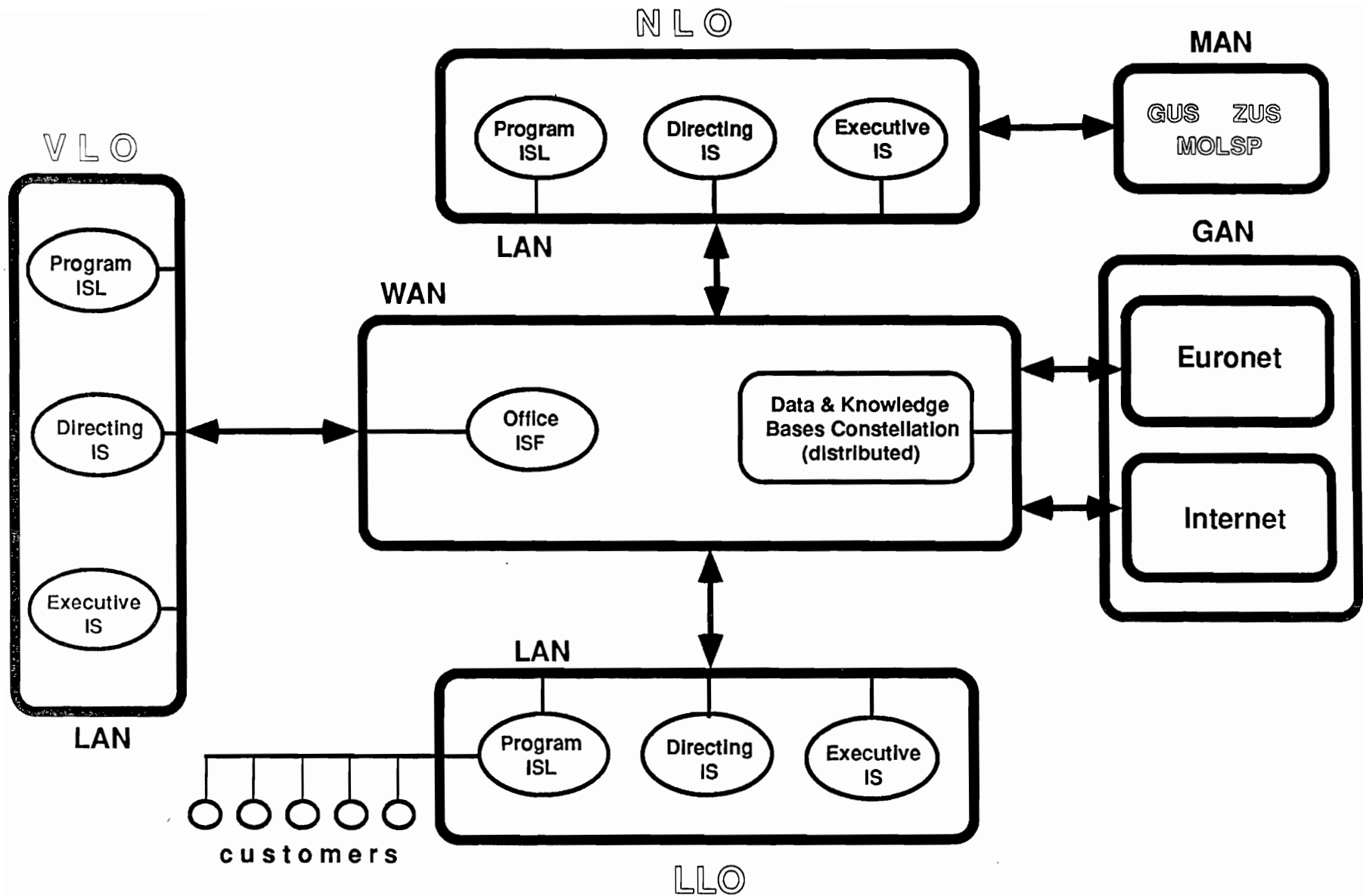
Figure III - 11 The Networked Architecture of Enterprise-wide MIS Complex
(limited to main systems)

NLO
VLO
LLO

Mission Performance Supportive System — Executive IS

Institution Performance Supportive System — Directing IS

Programs Performance Suportive Systems — Program ISL / Service IS | Operations IS

End User Computing

Productivity Supportive Applications — Office IS

Communications Supportive Infrastructure — LAN - WAN - GAN

Servers, Workstations, Shared I - O Resources

Figure III - 12   The Aggregated Architecture of Enterprise-wide MIS Environment
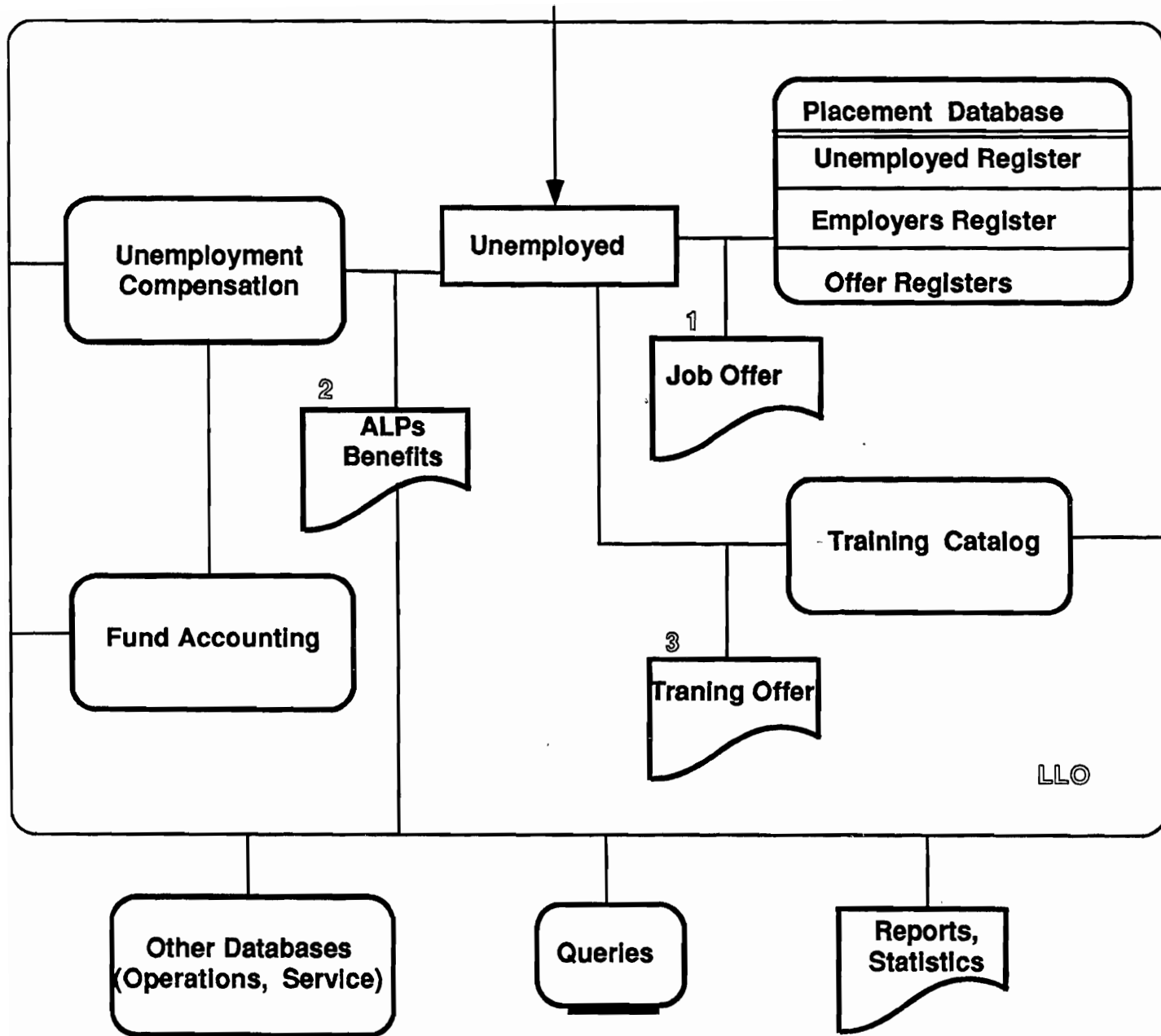
Figure L III - 13 The Architecture of Job - Transaction Processing System

Section IV. SOFTWARE VIEW

A. Graphical User Interfaces (GUI)

Graphical User Interfaces (GUI) became popular with the introduction of the Apple Macintosh system in 1984 (though they had been available to some degree for several years prior to that). GUIs featuring "user friendly" input-output facilities became popular very quickly. GUIs were the primary reason for the success of the original Macintosh, and have greatly influenced the development of subsequent products offered by all hardware and software firms in the computer industry.

GUIs are important to enterprise computing for several reasons. First, there is a transitive property between GUIs and enterprise computing. GUIs are an important aspect of client/server computing, and client/server computing is critical to enterprise computing, therefore, GUIs are important to enterprise computing.

Second, and more importantly, GUIs allow user interface functions to be separated from procedural code and supporting functions (e.g., communications APIs). User interfaces are a service category peer to data, communications, printing, and mail.

Third, it is far easier for end users to move among even dissimilar GUIs than among character cell-based interfaces that require non-standard use of function keys, control and "alt" keys, and other terminal-specific control mechanisms. Since a basic premise of enterprise-wide computing is portability of applications across heterogeneous platforms, such ease of portability on the user end is just as critical as portability of the applications themselves.

For the SOLO systems the OSF MOTIF screens are recommended, since the Open System Foundation (OSF) is specializing in UNIX system based products.

B. Application Programming Interface (API)

Application Programming Interface (API) is a set of public interfaces through which application programs can communicate with various types of services. APIs should be used in client/server computing within enterprise computing to allow components of one environment to be available in other environments.
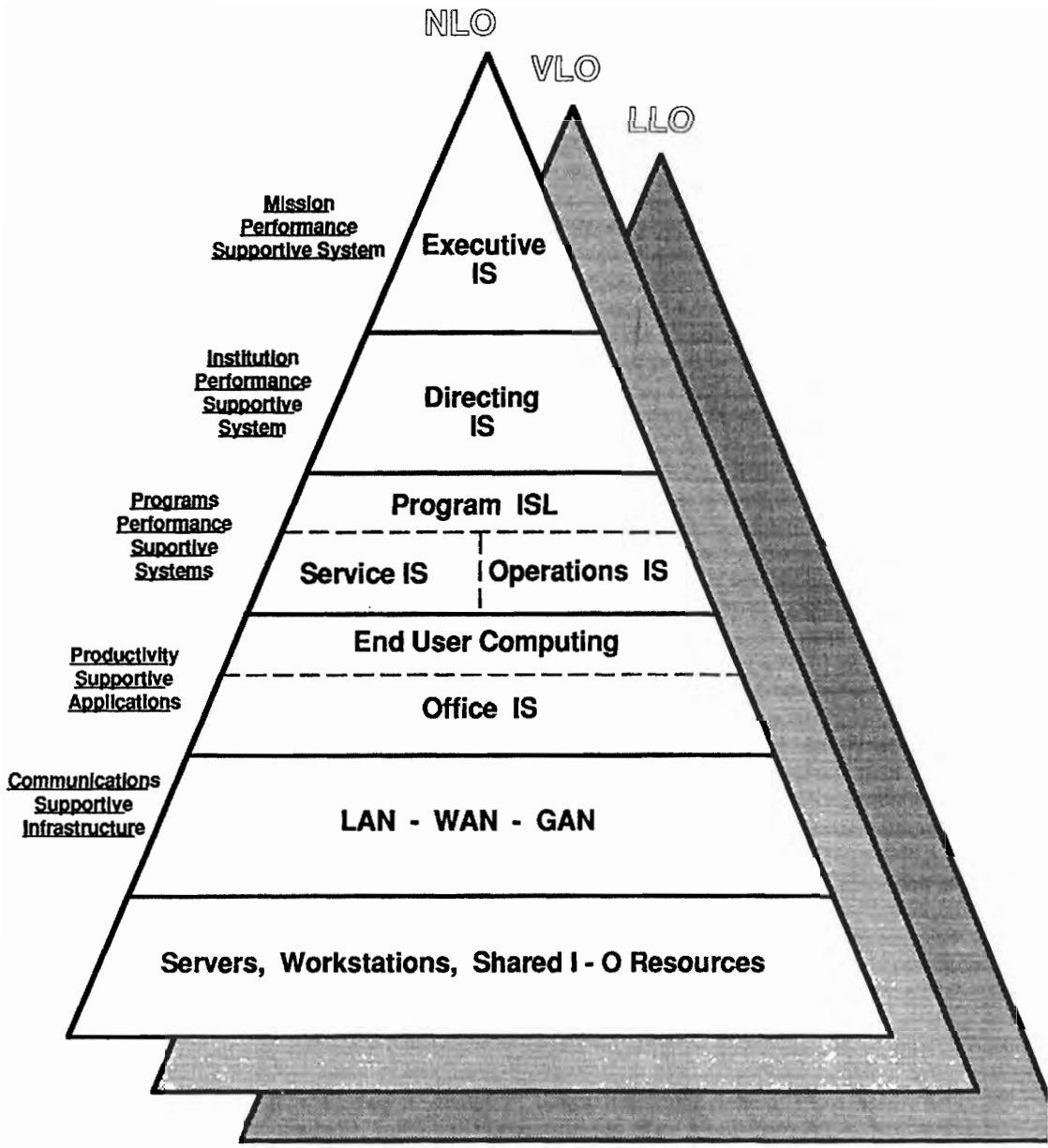
In the simplest form, an API is logically the same as any other standardized programming interface in a computing environment. A simple example of an API is when a COBOL program calls an operating system memory management routine or a runtime library function to perform data and time management. These resources are accessed through published, standard interfaces with appropriate parameters, result return mechanisms, and exception handling.

APIs are functionally identical to basic routines, except that they are on an enterprise-wide scale rather than being system specific. Assume that the SOLO uses SQL/Services--A Digital Equipment Corporation product--to perform client access from PCs to Rdb/VMS-based databases in the enterprise. PC applications make calls to the SQL/Services API to access data and otherwise control the system. For example, the following call:

sqlsrv_set_transport_type

is used to set the type of network transport used (AppleTalk, DECnet, or other), while the API call:

sqlsrv_fetch_many

is used to retrieve multiple rows from a table. Additionally, there are many other API calls used for the other SQL/Services functions and capabilities. In this particular case, all *client* applications in the enterprise that will utilize SQL/Services will make these and similar calls to the API.

The Client/server environment is typically heterogeneous. That is, the hardware platform and operating systems of the client and server are usually different. A well-defined set of standard APIs and remote procedure calls (RPC) allows these heterogeneous systems to communicate.

The power available on the desktop will allow layering of software through APIs so that the underlying platform hardware and software from the developer are invisible to the user. APIs show the developer a single-system image across a heterogeneous network of processors. Platforms will be selected for their cost effectiveness in meeting a particular business need rather than as upgrades to existing installed equipment. Hardware and software vendors will compete based on their ability to provide the platform that best meets the need. The real competition will revolve around who provides the best user/developer productivity, with effective application maintenance and enhancement being the primary criteria for product selection.

The SOLO Network Operating System (NOS) should have published APIs to enable third-party developers to write applications that augment the network operating systems' native services. The NOS should also support remote procedure calls programming tool kits as a way to ease the development of applications that run across a multitude protocols. Novel, Microsoft, and Banyan have published their APIs and support RPCs in third-party products.

C. Application-to-Application Communication

One of the fundamental keys to developing and using "enterprise literate" applications is the utilization of robust, flexible methods to send control information and data among applications throughout the enterprise. The following solutions are recommended for SOLO systems:

1. A Message Queuing Service, an example of which is DECmessage--used in Digital's NAS Enterprise Architecture. By using a "higher level" messaging service, applications are not required to support a multitude of system-level communications services. A common API should be used across multiple operating systems and computer/software configurations.

2. Remote Procedure Calls (RPCs). On the surface, applications that utilize RPCs are very similar to local applications. Architecturally, a distinction is made between RPC servers and RPC clients. The RPC interface is used to provide interaction "across system and through time," to use the words of the OSF DCE. The SOLO systems should use a universal unique identifier (UUID) to provide uniqueness across an enterprise. RPC interfaces should exist independently from specific applications. This should assure that clients from different applications can call the same interface and servers from different applications, and that the same interface is available to other entities within the enterprise.

D. Applications Design/Programming Automation with CASE

In order to most effectively function in an enterprise computing framework, computer-aided software engineering (CASE) should be used for the development and maintenance of the SOLO systems. The following guidelines are recommended:

1. Applications development should feature an integrated framework through which all stages of the project life cycle can be represented by tools, with the data and metadata under control of the tools which are integrated with one another.

2. The system should be capable of generating and managing both client and server components of applications.

3. The system should support multiple levels of modeling, from conceptual to logical to implementation-specific. All these levels should have an enterprise "flavor" to each of their tools.

4. The system should be capable of supporting the many different individual areas found in enterprise-oriented applications--GUIs, DBMS, data definition and manipulation languages and transaction management, repository interfaces, and so forth. Additionally, the required interoperability and connectivity components and code should be able to be generated and maintained as well.

5. The system should be compatible with the selected computer platform, DBMS, and MOTIF (user GUIs).

E. Software Development Documentation Standards

The planning, development, implementation, and operations of computer programs and automated information systems represent a considerable investment of human and automated resources. To maximize the return on this investment, and to provide for cost-effective and smooth operations, the revision and maintenance of sufficient documentation is needed at each stage of the system development life cycle.

Documentation provides information to support the effective management of IRM and to facilitate the interchange of information. It serves to:

- Provide managers with technical documents to review at significant development milestones, to determine that requirements have been met and that resources should continue to be expended.

- Record technical information to allow coordination of later development and use/modification of software.

- Facilitate understanding among managers, developers, programmers, operators, and users by providing information about maintenance, training, changes, and operation of the software.

- Inform other potential users of the functions and capabilities of the software, so that they can determine whether it will serve their needs.

This section names and states the purpose for the various types of system and software documentation required. They are:

1. Functional Solutions Definitions or Functional Requirements Document. To provide documentation so that both users and designers will understand and have a reference manual to use the new software. The manual should describe the requirements, operating environment, and development and implementation plans.

2. Data Management and Administration Solutions or Data Requirements Document. To provide a description of the data and technical information about data collection requirements during the definition stage of software development.

3. System/Subsystem Specification. To specify for analysts and programmers the requirements, operating environment, design characteristics, and program specifications for a system or subsystem.

4. Program Specification. To specify for programmers the requirements, operating environment, and design characteristics of a computer program.

5. Database Specification. To specify the identification, logical characteristics, and physical characteristics of a particular database.

6. Users Manual. To sufficiently describe the functions performed by the software in non-computer terminology, such that the user organization can determine its applicability and when and how to use it. It should serve as a reference document for preparation of input data and parameters and for the interpretation of results.

7. Operations Manual. To provide computer operations personnel with a description of the software and the operational environment so that the software can be run.

8. Program Maintenance Manual. To provide the maintenance programmer with the information necessary to understand the programs, their operating environment, and their maintenance procedures.

9. Test Plan. To provide a plan for the testing of software, including detailed specifications, descriptions, procedures for all tests, and procedures for summary of test data and evaluation criteria.

10. Test Analysis Report. To document the test analysis results and findings, present the demonstrated capabilities and deficiencies for review, and provide a basis for preparing a statement of software readiness for implementation.

The SOLO systems documentation should be prepared with the use of CASE tools, such as jMAPS developed by Wojciech Jaworski (Concordia University, Montreal).

Section V. RESOURCE VIEW

A. Mission, Goals and Strategy for Labor Information Resource Management
(LP-IRM)

"Business as Usual" no longer works for most organizations. While some managers merely seek a workable information system, others are searching for distinctly different ways to improve their sources of reliable management information. Some simply try to squeeze more useful information from their existing systems. Others have taken a more global approach by attempting to define a central and strategic business role for the IT manager. The later group is seeking to shape information technology organizations which are relevant and contribute value.

Historically, information technology and information technologists have focused on cost reduction. The leading new approach places an equal emphasis on creating additional value. Growing the business and reconceptualizing the business has become the new arena. Today's information technology managers face two critical challenges:

- Increasing the contribution of IT
- Changing the role of the IT organization in an environment of complex and rapidly changing technologies.

To begin to develop the Information Resource Management (IRM) creed a through understanding of the mission and goal is required in the proactive planning of system strategy. An IRM creed is a philosophy guiding IRM operations. It could be summarized in a simple catchy slogan such as "create a chance"--czyli "stwarzaj szanse"--for the unemployed.

The IRM mission for SOLO could be structured as follow:

Part I. IRM's core mission:

" To provide the best information services in the country for both unemployed persons and potential employers."

Part II. IRM's supportive comment:

"Automate routine tasks of workers in labor offices so as to facilitate creative decision making and improve their assistance to job seekers."

Part III. The IRM goal could be stated:

"To plan, maintain, operate and manage a networked enterprise-wide information system and technology throughout the organizational units of SOLO-- NLO departments, VLO departments, and LLO sections-- regardless of their geographic location.

Figure V-1 depicts the organization for information tools delivery within the SOLO. This strategy can be defined as follows:

1. One deputy of the NLO Head should be made director of the whole information business and be appointed as Chief Information Officer (CIO).

2. A National Information Management Steering Committee should be established to advise the CIO on matters of systems development, implementation, and operations. This committee should be a forum for the exchange of ideas, issues, problems and solutions among system users, system developers, and executives.

3. The Department of Organization and Informatics at the NLO level should be in charge of:

a. System Strategic Planning (directions) and System Tactical Planning (budget allocation among SOLO organizational units and projects).

b. Support of all systems for NLO users, including maintenance and operations.

4. The Informatics Departments at the VLO level should be in charge of:

a. maintenance of all systems for NLO and LLO users.

b. operation of all NLO systems.

5. Voivod Information Management Steering Committees should be established to advise the VLO Head on matters of systems development, implementation, and operations. This committee should be a forum for the exchange of ideas, issues, problems, and solutions among system users, system developers and executives within the voivod.

6. The Informatics Sections at the LLO level should be in charge of operations of all LLO systems.

7. The development and installation of systems should be out-sourced to independent subcontractors (vendors).
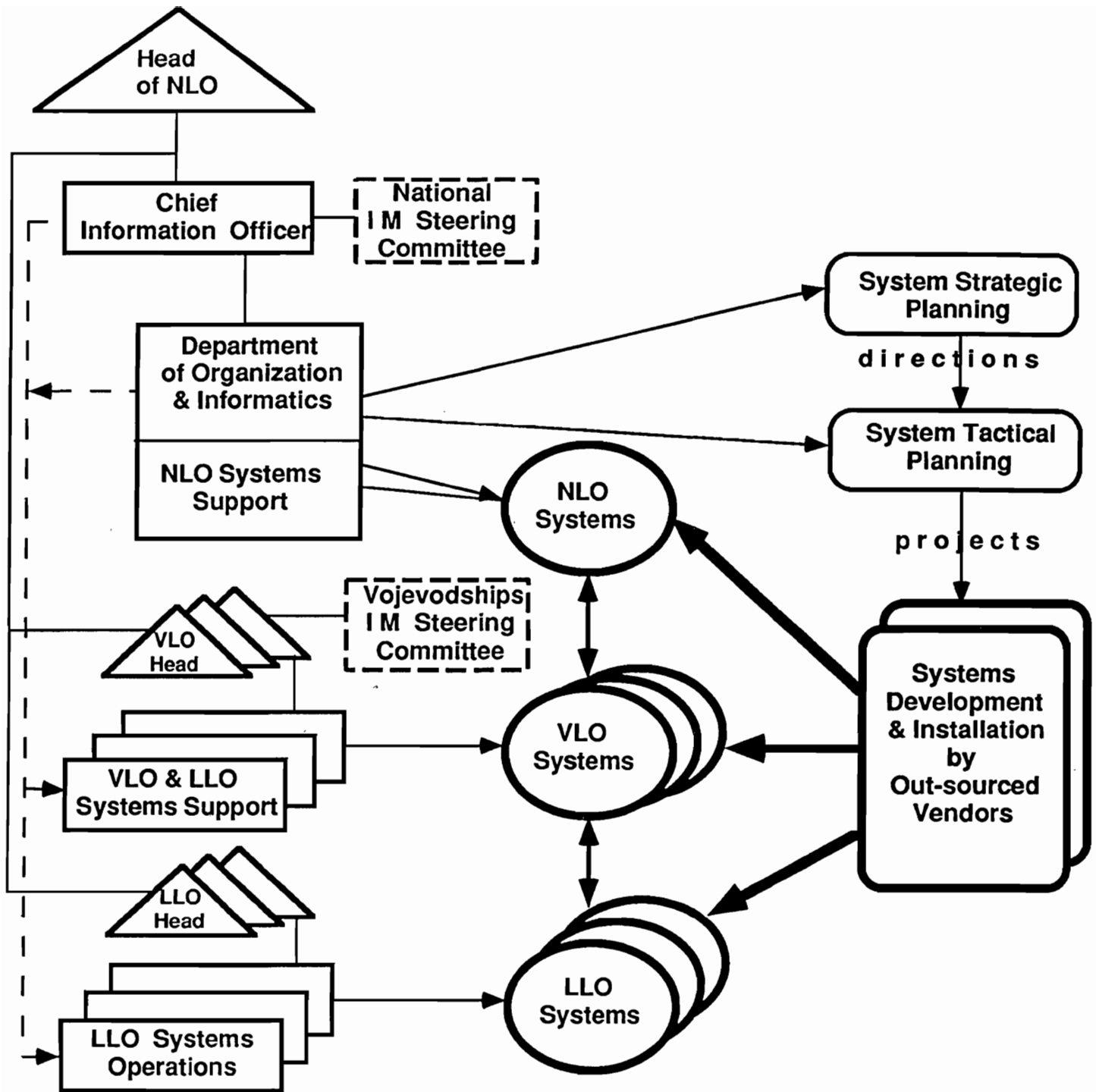
Figure V - 1 The Organization of Information Tools Delivery within the SOLO

B. Organizational Chart of Labor IRM (Human Resources)

Figure V-2 depicts the organizational chart of SOLO's Information Resource Management organization. Just as networks significantly affect the way that users deal with information, LANs, WANs, and telecommunications have affected the way that IRM (MIS) is organized. In the newer model, the once independent groups of host, PCs, networks, and telecommunications are being integrated. This is reflected in the NLO IRM Deputy Director's area of responsibility, which contains: applications, networks, tools and methods (hardware, software, and training). This focus is repeated at the VLO level, and limited to applications at the LLO level.

At the NLO level there are areas of strategic planning and systems acquisition encompassing SOLO in its entirety. The informaticians from the VLO should coordinate and support the implementation at the LLO level.

Table V-1 states minimum staffing requirements for the IRM organization.

Table V-1
The Minimum Employment in SOLO's IRM organization

IRM Level	Informaticians	Number	Total
NLO	22	1	22
VLO	5	49	245
LLO	1	520	520
SOLO			787

The total number of informaticians employed to support the very large scale national system is 787, including unforeseen needs the number can be estimated at 800-900 which is about 10 percent of total existing employment within the SOLO. This is approximately the same as in the U.S. For example, Hewett Associates which provide human resources services (retirement fund and administration of other fringe benefit programs) employs 3000 workers nation-wide, including 300 computer specialists (who support a $50 million computer installation).

Of course, the deployment of 800 informaticians will be gradual, roughly coinciding with the systems implementation.
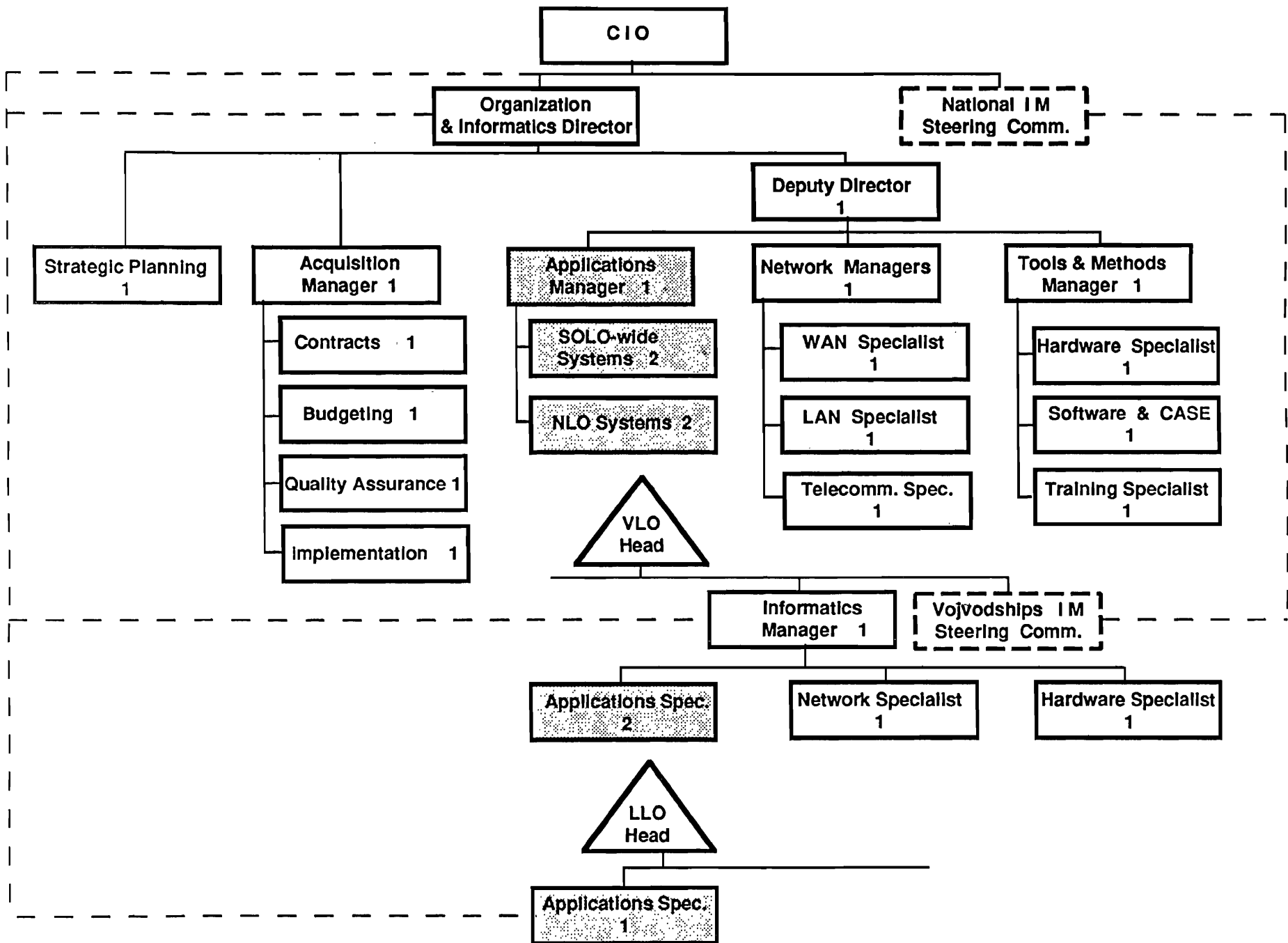
Figure V - 2   The Organization Chart of SOLO's Information Resource Management Organization

C. Requirements for Information Technology Resources

1. Architecture of Enterprise-wide Computers Platform

As the 1980s progressed, the area of specialization in the computer industry known as system integration became one of the skills most sought after by user organizations and vendors. No longer content with the simple integration environments that only a few years before were difficult to attain, information systems planners began demanding that their organizations achieve the long-promised goal of distributed processing among many different types of computer systems within the same environment. A wide variety of software and hardware bridges, routers, and gateways began to appear in the marketplace that permitted designers and developers to implement system enterprises consisting of a variety of software and hardware equipment. For example a system enterprise may include VAX/VMS departmental computers, IBM MVS corporate mainframes, Sun and Apollo workstations, and MS-DOS and apple Macintosh systems.

The "open systems movement" become another important step toward enterprise-wide computing environments. The revolt by many organizations against the complex and costly sets of proprietary interfaces led to the rise of vendors who embraced UNIX, TCP/IP, SQL, and other standards put forth by such vendors as IBM and Digital Equipment that provided some degree of "openness" to users.

In 1987, IBM announced its vision of enterprise computing and called it Systems Applications Architecture, or SAA. Unlike many of integration efforts undertaken in the past or underway at that time, IBM's goal seemed oriented towards providing enterprise integration capabilities to its own processors, operating systems, and environments rather than attempting to provide multi-vendor capability. Many users had developed systems around IBM mainframe, midrange, and personal systems and now wanted to achieve the seamless connectivity and cooperative processing sought after in heterogeneous environments.

While Digital Equipment Corporation did not have quite the same problem as IBM--its VAX/VMS line spanned from desktop systems to near-mainframe computers--they were facing stiff competition from vendors providing UNIX-based and other "open" solutions. In early 1988, Digital announced its own enterprise architecture counterpart to SAA, known as Network Application Support, or NAS.

Soon after, a flood of enterprise architectures began appearing from the leading computer vendors, each eager to become one of the dominant players in the era of heterogeneous enterprise computing in the 1990s.

Factors driving enterprise-wide computing are:

*   User desires to connect different computing sites and applications into one standardized environment.

*   Technology
    - Personal computers
    - LANs
    - Client/Server architecture

*   Standards (UNIX and TCP/IP)

*   Changing marketplace (many independent vendors in open systems.

There are two major conceptual models that can be viewed in the context of enterprise computing:

1. *The Scalable Utopian Model* with a vision of identical software able to run on any platform within an enterprise, from laptop personal computers to midrange systems to data center mainframes. Just like a utopian society, the odds are heavily stacked against this sort of a model becoming a reality anytime in the near future. Some components are currently available or will be shortly, such as binary compatibility among object code formats, layered enterprise services called APIs, and a great deal of consortium and cooperative vendor work (e.g., ACE, Apple-IBM, OSF) is now underway. Major vendors are now conducting research in the areas of self-modifying operating systems; not just portable ones like UNIX, in which new kernels must be coded and integrated for different hardware, but actual operating system code that can modify itself to work with multiple underlying processors.

2. The *integrated model* is primarily recommended for SOLO. Since it is more realistic. Even with the use of vendor enterprise architectures such as SAA and NAS when they are fully available for consumers, there still is a tremendous amount of underlying bridges, gateways, routers, software "glue," interoperability products, and many other components that comprise the "subenterprise" environment which may or may not be transparent to users.

Someday, we may see an environment in which the scalable utopian model is a reality, with artificial intelligence-based migration tools to incorporate inherited systems "seamlessly," transparently, and painlessly into a utopian enterprise. In the mean time, SOLO should look for the integrated model of heterogenous components in the open system standards.

Many IS professionals understandably confuse the concepts and implementations of enterprise computing and open systems with one another. Open systems are oriented

towards an environment where most or all of the computing technology that comprises that environment is based upon generally accepted standards, regardless of the scope of the environment--department-wide or organization-wide. Enterprise-wide computing, by contrast, encompasses not only open systems concepts but, by virtue of existing environments that must also be incorporated, a great deal of proprietary interfaces and interoperability mechanism as well.

It may be surprising to some, but competing open systems consortia do exist, a fact which complicates both open systems in general and, more specifically to SOLO needs, their role in enterprise computing. The most popular consortia are: The Open Software Foundation (OSF) oriented around Distributed Computing Environment and UNIX International which bases its products and specifications around AT&T's UNIX System V.

The key foundations of enterprise computing is the acceptance and development of products that utilize a client/server concept. Advantages of client/server architecture are:

* Division of resources.

* Adding clients or servers cheaply.

* Modification of components is easier than when the system is centralized since there are fewer coupling
problems.

* "Mix and Match."

* Standards

* End-user computing.

* More reliable than the centralized model (Germany).

The project uses the following definitions consistently:

Client - A client is a single-user workstation (terminal) that provides presentation services and the appropriate computing, connectivity, and database services and interfaces relevant to the business need.

Server - A server is one or more multiuser processors with shared memory that provides computing, connectivity, and database services and interfaces relevant to the business need.

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Figure V-3 illustrates the proposed client/server architecture for SOLO. It is a networked architecture which can be developed in two phases:

Phase I - LAN-oriented architectures for NLO, VLO, and LLO installations. It means that all in-house users will be interconnected.

Phase II - In-house LANs will be interconnected nationally via WAN, when feasible (within 1 to 3 years).

The following guidelines are recommended:

1. Commercial software products should be used whenever possible to provide the framework upon which the client/server applications are developed. This includes user interfaces (MOTIF, MS Windows, Open Look, etc.), database management systems, networks, and other components.

2. The product selected should conform to appropriate standards, open systems concepts (UNIX), and/or vendor architectures. SOLO developers should avoid selecting technology and products based solely on the support of client/server computing. Instead, they should ensure that products chosen support the overall enterprise architecture.

3. "Server" agents should be used to facilitate the migration and incorporation of centralized applications into a client/server mold across the enterprise, if such a need exists at SOLO.

Since major SOLO applications are routine-oriented, the following hardware configuration is recommended:

* UNIX workstations
* Dumb terminals for users in operations
* Personal computers for executives and desk top publishers
* laser printers
* 1 GB storage per database server (at the beginning of operations)

NLO

MAN

GUS   ZUS
MOLSP

| Applications Server | Database Server | Network Server | Terminals |

VLO

| Applications Server |
| Database Server |
| Network Server |
| Terminals |

LAN

GAN

X.75

WAN

Euronet

Gradual Implementation through
Nation-wide
Public Packet Switched Network

Internet

TCP-IP

LAN

LAN

| Terminals | Applications Server | Database Server | Network Server |

customers

LLO
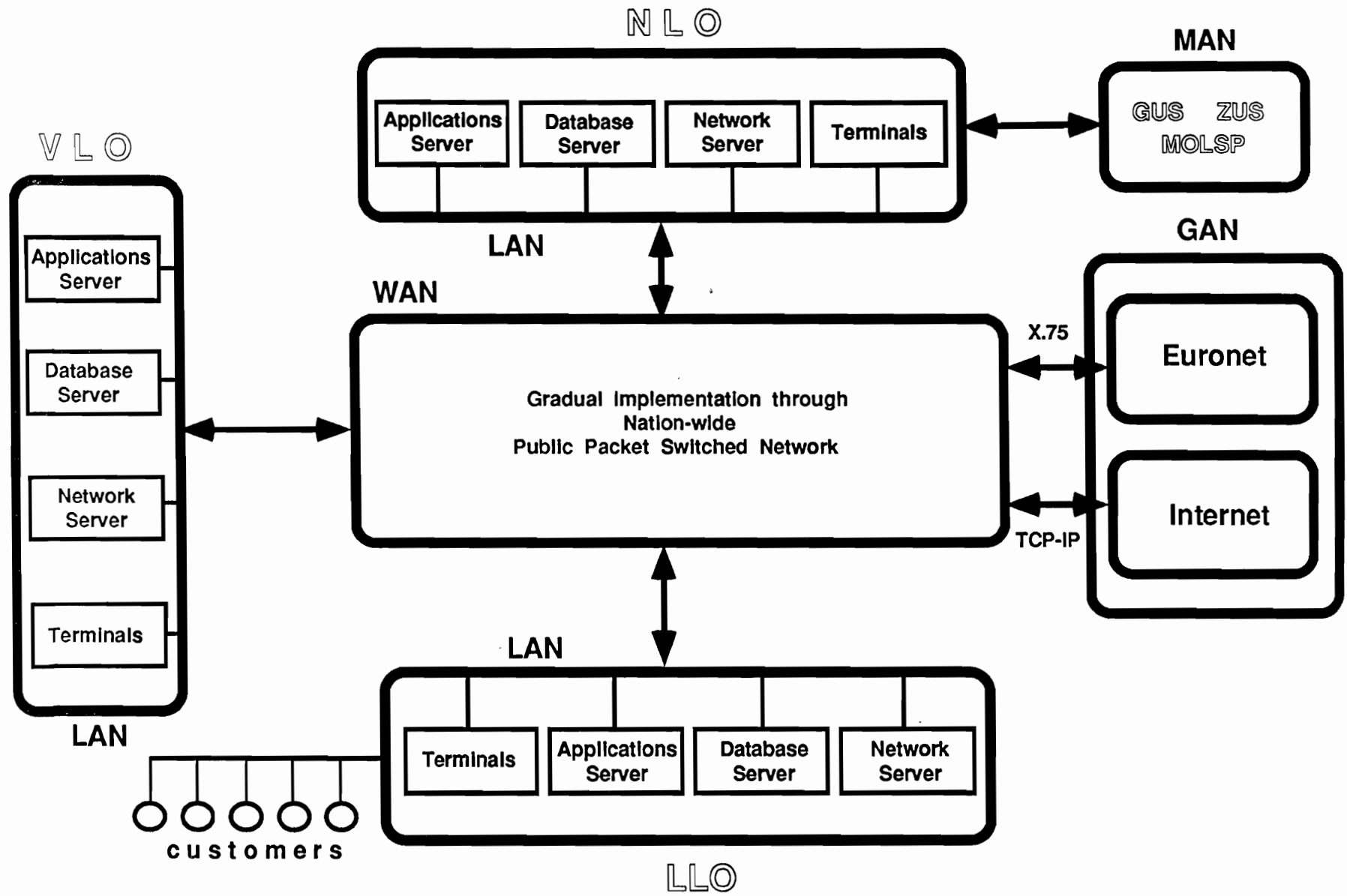
Figure V - 3 The Architecture of a Computer Platform in a Client - Server Mode for SOLO Enterprise-wide Computing

The required number of main computer devices can be estimated as follows:

* Number of servers	570 offices	x	4	=	2,280
Reserve 10%					228
Total					2,508
* Number of PCs	570	x	3	=	1,710
					170
					1,880
* Number of terminals	9,000	x	0.8	=	7,200
Reserve 10%					720
Total					7,920
Total number of devices					12,308
* Number of LANS					570

2. Architecture of Enterprise-wide Networks Matrix

Networking can be a costly proposition, and many business spend excessive amounts of money on networking. Yet by carefully defining requirements for the network and monitoring costs, SOLO can build a useful and cost-efficient enterprise-wide network.

The following principles should be applied to development of the SOLO network:

1. An enterprise-wide network should be designed in a modular fashion so that it can accommodate existing technologies as well as emerging ones.

2. To maximize the network's modularity, the SOLO network should be built using products which meet industry standards for functionality and reliability. Establishing SOLO standards will also aid in achieving modularity.

3. A network topology and operating system should be chosen to match the SOLO's information systems and computing structure.

Figure V-4 illustrates the SLO Network Matrix. It is a networked but distributed environment without a central processing facility. The main information processing takes place at the VLO level, within a distributed LAN environment. This environment is independent and very operationally reliable, since it is based on in-house networking and processing.

X - X - X - X - XX - X - X - X - X - XXX

— Environment

— League

— Union

— Federation

— System

— Management Level

— Subsystem

— Activity

— Function

— Program
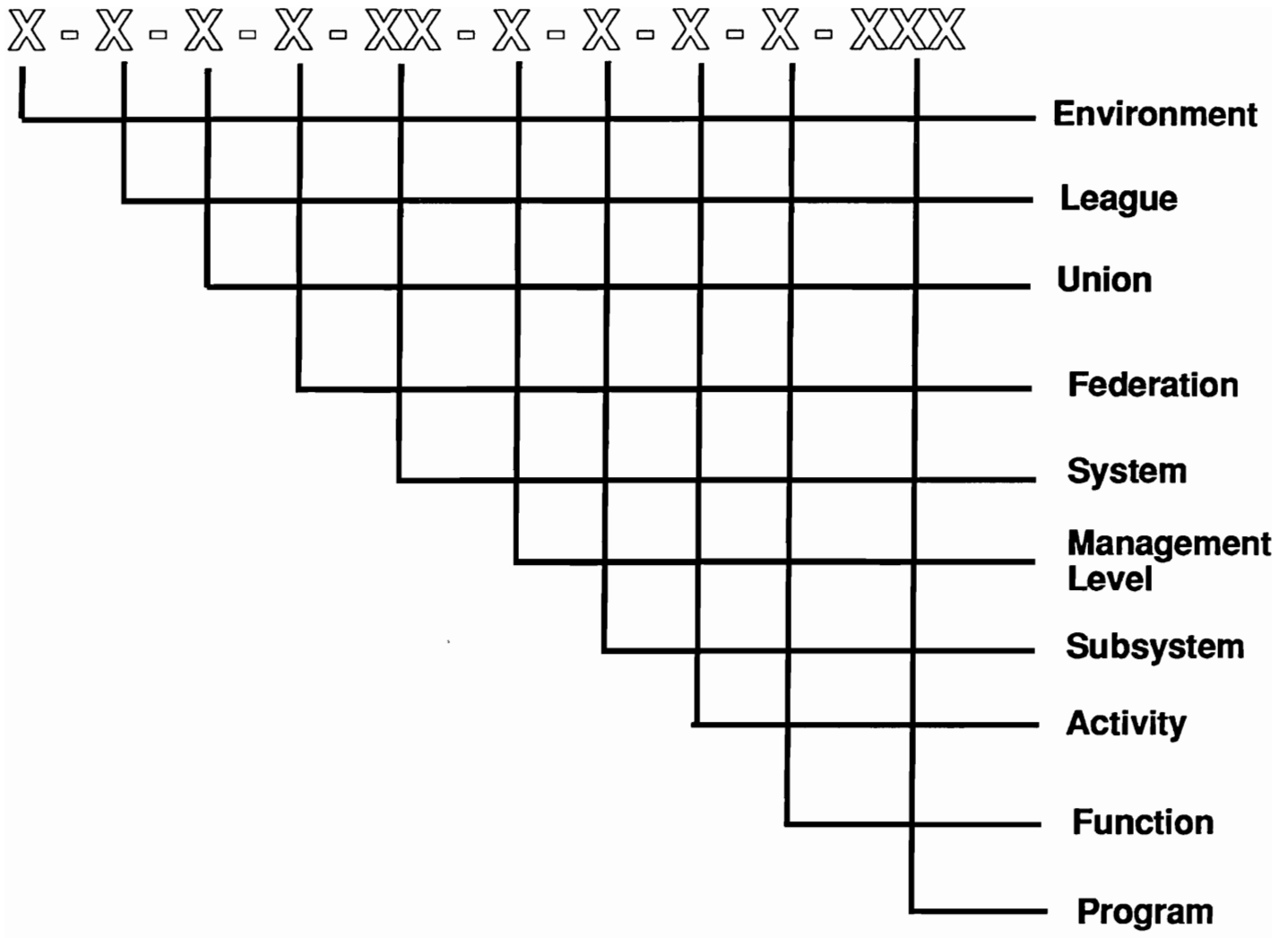
Figure III - 9 Structure of Index for MIS Components

8. *Distributed Administration*--All database administrator (DBA) functions and utilities must work throughout the enterprise, regardless of the numbers and types of DBMS and databases. This includes, for example, backup and restore, tuning, and performance monitoring.

9. *Security*--This function cannot be overemphasized. It must be a strong component of the distributed database management system (DDMS).

10. *Portability and Convertibility*--The DBMS should be computer platform independent to ensure that the DBMS can be improved over time as information technology changes.

11. *User Interface*--A 4th Generation language should be applied as front-ends to databases.

12. *Query Protocol*--The Structured Query Language (SQL) syntax should be applied to all queries from the DBMS.

13. *Lexicon*--A repository (data dictionary) should be compatible with the Information Repository Directory System (IRDS) standard and should be selected for use throughout the enterprise. All applications and system metadata should migrate into the repository.

14. *Automation Flexibility*--The selected DBMS product should be to capable of easily storing knowledge syntax so that "expert systems" may be developed in the future to relieve SOLO staff of routine functions.

15. *Local Technical Support*--A primary consideration is selecting the vendor for hardware and software equipment should be credentials indicating the prospect of local long term technical support.

16. *Polish Character Set*--The Polish letters (ISO Latin 2) and collating sequences must be supported by hardware and software equipment selected.

17. *Application Development Tools*--The means necessary to make system improvements should be available in Computer Automated Software Engineering (CASE) and Graphical User Interfaces (GUI) environments with mouse support.

Section VI. STRATEGY FOR IMPLEMENTING THE MISs

A. General MIS Implementation Milestones

Figure VI-1 depicts a general Program Evaluation Review Technique (PERT) network of major MIS development and implementation milestones. There are 4 paths of main activities:

- Implementing information technology in 570 SOLO offices, which should be initiated by a process involving public release of a Request For Proposals and review of technical and financial proposals received. Later, pilot installations should be established prior to equipping all offices.

- Developing and implementing application systems using Computer Automated Software Engineering (CASE) tools, prototyping and pilot techniques, and the cooperation of system vendors using the Joint Application Development (JAD) methodology.

- Standards development for enterprise-wide and open system environment.

- Staffing NLO and pilot VLO informatics centers prior to user training and full scale systems implementation.

Along with the project practice and accepted solutions this general PERT network should be expanded into more specific activities.

B. Systems Development and Implementation Strategy

1. The Joint Application Development (JAD) and Computer Automated Software Engineering (CASE) Methodologies

There are 17 hierarchical control information systems that can be grouped into 10 major information systems federations categories. To develop such a number of systems and implement them into 570 local labor offices and 49 voivod labor offices is a huge undertaking. It is impossible to succeed in this mission by managing simultaneous development of all systems from a single coordination center. It is recommended that certain voivod labor offices each be assigned responsibility for development of 1 or 2 different major information system federations.

Information Technology

```
┌──────────┐      ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│   IT     │─────▶│   Bid &      │─────▶│   Pilot      │─────▶│    IT        │
│  RFP     │      │ Contracting  │      │ Installations│      │ Installations│
└──────────┘      └──────────────┘      └──────────────┘      └──────────────┘
```

Applications

```
┌──────────────┐      ┌──────────────┐      ┌──────────────┐      ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│  CASE &      │─────▶│   Bid &      │─────▶│    JCS       │─────▶│   Systems    │─────▶│   Systems    │─────▶│   Systems    │
│  Syst. Dev.  │      │ Contracting  │      │ Prototyping  │      │ Development  │      │Implementation│      │  Operations  │
│  RFP         │      └──────────────┘      └──────────────┘      └──────────────┘      └──────────────┘      └──────────────┘
└──────────────┘
```

┌──────────────┐
│   MIS   │
│ Guidelines │
└──────────────┘

Standards

```
┌──────────────┐      ┌──────────────┐
│  Enterprise  │─────▶│  Enterprise  │
│  Solutions   │      │Standardization│
└──────────────┘      └──────────────┘
```

Staff

```
┌──────────────┐      ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│    NLO       │─────▶│   Pilot      │─────▶│   User       │─────▶│    User      │
│  Staffing    │      │  Centers     │      │  Centers     │      │  Training    │
│              │      │  Staffing    │      │  Staffing    │      │              │
└──────────────┘      └──────────────┘      └──────────────┘      └──────────────┘
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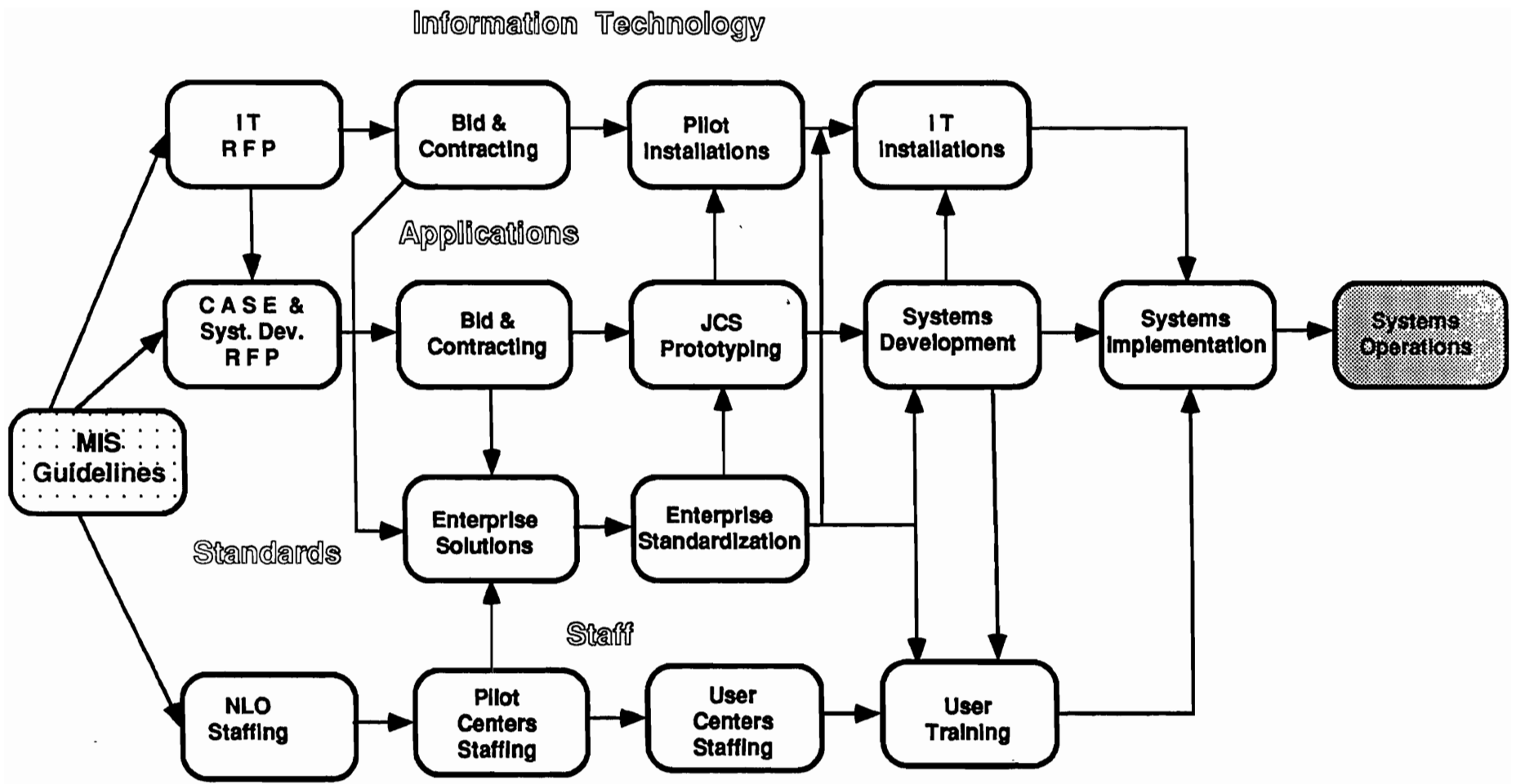
Figure VI - 1   A General Program Evaluation and Review technique (PERT)
Network of the MIS Development and Installations Milestones

Figure VI-2 illustrates an example of how VLOs may be assigned specializations in developing particular federation categories. The systems should be developed and implemented by the VLOs with the application of the Joint Application Development (JAD) and Computer Aided Software Engineering (CASE) methodologies, and support from third-party software developers. The VLO teams should include system end-users, systems developers, and VLO executives.

2. Job Control System (JCS) Special Considerations

Special considerations should be made for the Job Control System (JCS). This system currently has several existing solutions in operation throughout SOLO. Each solution has a devoted group of users and developers. Different solutions were developed in Warszawa (PRACA-SOETO), Kraków-Poznań (RUBIKON), Łodz (BOSS), Radom (PROGRESS), Kielce (Reja), Warszawa (COBRA), and so forth. It is an advantage for SOLO informatics, that there is within Poland a wealth of experience creating real applications. This resource should be exploited in the development phase. The enterprise-wide MIS, requires a new version of JCS. The new JCS must be implemented on a true DBMS, and be accessible by all the applications and authorized users from different units of SOLO.

More precisely, it is recommended that the Kraków VLO (with the Nowa Huta LLO) be responsible to develop a new universal version of the JCS. This team may draw assistance from experienced personnel at centers who together would constitute an inter-center JAD Task Force.

3. Application Systems Priorities

The following priorities are recommended for the development and implementation phases:

(1) Office Automation Systems - These will introduce instant end user and communications support.

(2) Program Information System Federation (ISF) - This will define and provide a framework for the exchange of data and information with other systems.

(3) Fund ISF - This will define and provide a framework for supplying data and information from other systems.

(4) Job Information System - This will automate the routines of customer service at the 570 LLO.
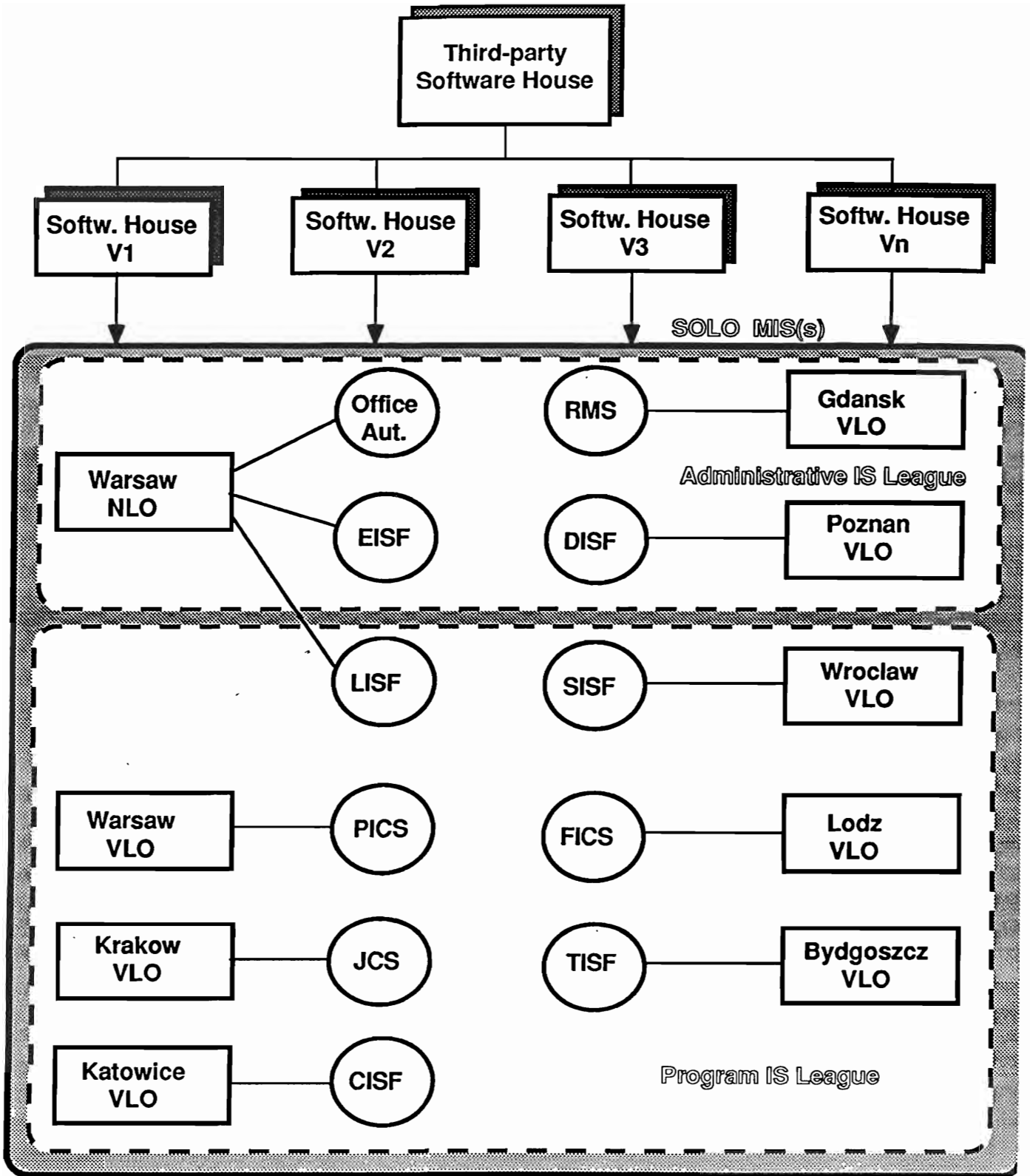
(5) Training ISF

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Figure VI - 2   An Example of Centers' System Specialization

(6)   Statistics ISF

(7)   Complaints ISF

(8)   Records Management System

(9)   Directing ISF

(10)   Executive ISF

(11)   Legal ISF

The development and implementation of each Information Systems Federation (ISF) may take from one to three years. The fastest implementation is in the area of Office Automation Systems, utilizing off-the-shelf software which can be introduced almost instantly, and depends only on the availability of proper training and users manuals. The implementation of all systems in the whole SOLO may take five years or more.

C. Information Technology Implementation Strategy

The information technology implementation should be based on services of regional third-party vendors, such as ZETO centers. A very high volume of equipment (about 12,300 computer devices and 570 LANs) will have to be installed and maintained. The pilot and development centers should be equipped before other offices.

D. Staffing Strategy

A system consisting of 11 Information Systems Federations and 25,000 computer equipment units serving nearly 10 percent of the Polish population (over 3 million job seekers and businesses) requires the appropriate professional staff to operate efficiently and effectively. The required number of computer professionals has been provided in Section V. The priority of staffing is as follows:

1. NLO Organization and Informatics Department.

2. Leading System Development Centers should be specified. The list of centers chosen may be different from those presented in Figure VI-2, however some care was taken in developing this list. The rationale for the choices given in Figure VI-2 follows:

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- Warsaw NLO has the best view of Legal and Executive Systems, and should be in charge of the Office Automation Systems, particularly, enterprise-wide electronic communications. This center cannot be overloaded with too many complex tasks, since it is already a leader of the overall project.

- Poznań VLO should be assigned leadership in developing the Directing ISF since the manager of the Poznań VLO has been closely involved in the work of TOR 2 including training in MIS architecture the USA.

- Kraków VLO and Nowa Huta LLO should be assigned leadership in Job ISF because of their strong advancement in RUBIKOM and the good informatics skills of staff at the centers.

- Warsaw VLO should be assigned leadership in Program ISF because of the proximity of this center to the NLO where major planing and decisions are undertaken in this area.

- Łodz VLO should be designated leader to develop the Fund ISF because of the proximity of this center to Warsaw, where the Program ISF will be developed.

- Bydgoszcz VLO should be designated leader in developing the Training ISF, because a representative from this center was trained in the USA as part of TOR 2 and has a valuable understanding of systems architecture. The proximity of Bydgoszcz to Poznań and Szczecin will allow for close cooperation within one of the most advanced regions for training.

- Wrocław VLO should be assigned leadership in Statistics ISF since Wrocław is a famous academic center of Polish mathematics.

- Gdansk VLO should be made leader in developing the Records Management ISF since this system is technology intensive, and Gdansk possess the international contacts to facilitate the transfer of advanced solutions.

- Katowice VLO should be designated leader in developing the Complaints ISF, because this region has the largest number of customers, and also because it is in close proximity to Kraków, where the Job IS is to be developed. The complaints and Job ISFs must closely cooperate.

3. Staff at the remainder of the VLOs and LLOs who will become directly involved at the implementation phase.

Appendix A

Data Required for the Performance Indicators System

Data Required for the Performance Indicators System

All together there are twenty lists of data which ideally should be accessible through some type of relational data base management system (RDBMS) such as Oracle or Ingress. The twenty lists are given as if they were variables in the tables of an RDBMS which would be accessible for production of reports using the structured query language (SQL). The twenty lists include variables for person level data on individual program participants, variables for data on particular projects, loans, or courses provided by an enterprise, and variables for data on voivod and local labor offices. It is proposed that the data base be structured by primary and secondary keys in the tables. The primary key is the personal identity number which is maintained for the individual by the PESEL organization; the secondary keys are the local labor office number, the voivod labor office number, the training course number, the public or intervention works project number, and the loan number.

The data requirements are presented in separate lists so that the sufficiency of the data for producing the PI may be easily confirmed. The first five lists of data are needed for evaluating all programs. By gathering this data once, redundancy is reduced in the system and storage requirements are thereby minimized. The first three of these data lists regard information on the individual program participants: (1) demographic and previous job information--which should be available from the placement service registration form, (2) person level data at program exit--from a survey to be filled out upon finishing a program, and (3) person level data from a follow-up survey--administered three months after program exit. The next two lists call for information from the labor office level: (4) the local labor office, and (5) the voivod labor office. It should also be mentioned that much of the data called for in the data lists given below will not be used to directly calculate the PI, but rather to develop an adjustment methodology to account for the varying economic conditions in the areas and to improve targeting of services. In addition to the adjustment methodology, the demographic data on age, gender, education, occupation, and industry allows examination of program results by group, and will allow a variety of quasi-experimental net impact evaluation of programs in the future.

Data List 1.   Demographic and Previous Job Information from Placement Service
               Registration

1.   Personal identity number (PESEL)
2.   Voivod number
3.   Local office number
4.   Date of birth
5.   Gender
6.   Date of most recent Placement Service registration
7.   Date of most recent Placement Service visit
8.   Level of educational attainment
9.   Occupation code of previous job
10.   Industry code of previous job
11.   Termination date of previous job
12.   Monthly wage on previous job
13.   Average weekly hours on previous job
14.   Total months worked on previous job
15.   Year first entered the labor force
16.   Total years of work experience
17.   Employment status
18.   Which of the following programs participated in since date of first registering with the
               placement service:
       a. Unemployment Compensation
       b. Placement Service
       c. Retraining
       d. Small Business
       e. Job Creation
       f. Public Works
       g. Intervention Works
       h. Graduates Subsidies

Data List 2.   Person Level Data at Program Exit

(Summarizes activity within two weeks of leaving a labor market program.)

1.   Personal identity number (PESEL)
2.   Started regular non-supported job since registered with placement service
3.   Date of starting first non-supported job since registered with the placement service
4.   Occupation code of the first non-supported job since registering with the placement
        service
5.   Industry code of first non-supported job since registering with the placement service
6.   Monthly wage on first non-supported job since registering with the placement service
7.   Average weekly hours on first non-supported job since registering with the placement
        service
8.   Address for follow-up survey to be mailed
9.   For those who participated in either retraining of employed, self employment loans,
        job creation loans, public works, intervention works, or wage subsidies for hiring
        recent graduates, did work begun under one of these programs become permanent?

Data List 3.   Person Level Data from a Follow-up Survey:

(Follow-up survey administered three months after most recent labor market program
contact.)

1.   Personal identity number (PESEL)
2.   Currently employed at a non-supported job
3.   Currently employed at a non-supported job which was previously subsidized
4.   Date the current job began
5.   Occupation code of the current job
6.   Industry code of the current job
7.   Average monthly wage of the current job
8.   Average hours per week on the current job
9.   Number of jobs held since last contact with a labor market program
10.   Total number of months worked since last contact with a labor market program.

Data List 4.   Local Labor Office Report:

(A monthly report on costs and activity.)

1.   Local labor office number
2.   Stock of vacancy listings on the first day of month
3.   Stock of vacancy listings on final day of month
4.   Total operating costs incurred by office during the month
5.   Total office staff hours worked during the month
6.   Proportion of total office staff hours in the county devoted to administering each of the EF Programs:
  a.   Unemployment Compensation
  b.   Placement Service
  c.   Retraining
  d.   Small Business (Loans for Start-up)
  e.   Job Creation (Loans for Hiring)
  f.   Public Works
  g.   Intervention Works
  h.   Graduates Subsidies (Wage subsidies - recent graduates)

Data List 5.   Voivod Population Characteristics

1.   voivod labor office number
2.   total voivod population
3.   voivod female population aged 15 to 55 years
4.   voivod male population aged 15 to 60 years
5.   voivod total economically active population
6.   voivod total female economically active population
7.   voivod distribution of educational attainment of population over 14 years of age

Data List 6. Person Level Program Specific Data Requirements

1. Personal identity number (PESEL)
2. Date the most recent claim period began
3. Total compensation received during the current claim period
4. Total days compensated in current claim period.
5. Has there been an interruption (minimum 30 days long) in the series of unemployed days compensated since the start of the current claim period?
6. Date of the first interruption (minimum 30 days long) in the series of days unemployed days compensated since the start of the current claim period.
7. Was the maximum entitled benefit exhausted during the period of unemployment compensation payments?
8. Base year (prior 12 months) earnings of claimants

Data List 7. Person Level Data Requirements

1. Personal identity number (PESEL)
2. Number of times the individual was referred to a job since registering as looking for work
3. Number of job referrals for the individual since registering as looking for work
4. Number of job offers to the individual since registering as looking for work
5. Number of job offers accepted by the individual since registering as looking for work
6. Received vocational counseling since registering as looking for work
7. Tested for aptitude since registering as looking for work
8. Tested for skill competency since registering as looking r work
9. Tested for health since registering as looking for work

Data List 8. Data about the person participating in the training course:

1. Personal identity number (PESEL)
2. Retraining course number
3. Currently receiving Unemployment Compensation?
4. Date entered retraining?
5. Last date attended retraining?
6. Occupational skill acquired in retraining?
7. Completed retraining?
8. Date entered retraining?
9. Date completed retraining?
10. Entered employment?
11. Employed during retraining?
12. Training took place at the firm of work?
13. Eligible for unemployment compensation during retraining?

Data List 9.   Retraining Course Information

1.   Training course identification number.
2.   Duration of complete retraining course in days.
3.   Training course total stipend costs.
4.   Training course total non-stipend costs.

Data List 10. Data Requirements for evaluating Self-employment loans

1.   Personal identity number (PESEL)
2.   Loan serial number
3.   Date of application for loan.
4.   Date loan approved.
5.   Amount of the Loan
6.   Term of Loan (length of payback period) in Months
7.   Interest rate on the Loan
8.   Industry code of new business
          (1)   production (= industry)
          (2)   services
          (3)   trade (= merchandising)
          (4)   farming (= agriculture)
          (5)   transportation
          (6)   construction
          (7)   forestry

Data List 11. Small Business Start-up Loan Follow-up Information

1.   Personal identity number (PESEL)
2.   Is the business established using the loan still operating?
3.   Excluding self, the number of employees currently on the payroll.
4.   Net business income for the most recently ended tax year.
5.   Business tax payments for the most recently ended tax year.

Data List 12. Information about job creation loan recipient.

1. Employer identification number (or business tax number)
2. Loan contract number
3. Total number of company employees in calendar year before loan was granted
4. Total value of company payroll in calendar year before loan was granted

5. Industry code of company receiving loan
    (1) industry
    (2) services
    (3) trade (= merchandising)
    (4) farming (= agriculture)
    (5) transportation
    (6) construction
    (7) forestry

6. Amount of loan
7. Promised new jobs resulting from loan
8. Number of jobs actually created
9. Date of application for loan
10. Date loan was granted

Data List 13. Loan for Job Creation Follow-up Survey:

1. Employer identification number (or business tax number)
2. Loan contract number
3. Date of follow-up survey
4. Total number of company employees in most recent calendar year.
5. Total value of company payroll in most recent calendar year.
6. Employment on project undertaken by loan for job creation.
7. Total value of wages paid to employees on project undertaken with a loan for job creation.

Data List 14. Loan for Job Creation Program Coordination

1. Employer identification number (or business tax number)
2. Of the following labor market programs, which are currently or recently used by this employer?

    a. Unemployment Compensation
    b. Placement Service
    c. Retraining
    d. Small Business (Loans for Start-up)
    e. Job Creation (Loans for Hiring)
    f. Public Works
    g. Intervention Works
    h. Graduates Subsidies

Data List 15. Data about the person appointed to a job:

1. Personal identity number (PESEL)
2. Employer identification number (or business tax number)
3. Date of starting a job
4. Date of leaving a job during the 24 month period (if it happens)

Data List 16. Data about persons participating in public works.

1. Personal identity number (PESEL).
2. Public Works project identification number.
3. Refused to participate in Public Works?
4. Date started working on a Public Works project.
5. Date ended working on a Public Works project.
6. Total scheduled Public Works work days in previous reporting year.
7. Total days actually worked on Public Works in previous reporting year.
8. Total Public Works wages + ZUS in previous reporting year.
9. Occupation code while working on in Public Works project.
10. Eligible for unemployment benefit before starting work on a Public Works project?
11. Eligible for unemployment benefit after finishing work on a Public Works project?
12. Became permanently employed after work on Public Works project ended?

Data List 17. <u>Public works project information</u>

1.   Public Works project identification number.
2.   Duration of Public Works project.
3.   Public Works project total wage costs including ZUS.
4.   Date of starting Public Works project
5.   Date of ending Public Works project
6.   Planned number of employees (= job places)
7.   Actual number of employees hired
8.   Government department operating Public Works project
      (1)   Local Parks Department
      (2)   Local Social Services Department
      (3)   Local Roads Department
      (4)   Voivod Parks Department
      (5)   Voivod Social Services Department
      (6)   Voivod Roads Department
9.   Type of Public Works project activity.
      a. environmental protection
      b. water projects (e.g., supply or sewage treatment)
      c. forestry
      d. communication
      e. roads
      f. public housing
      g. development of social services

Data List 18. Data for individual workers on intervention works

1.   Personal identity number (PESEL).
2.   Intervention Works project identification number.
3.   Refused to participate in Intervention Works?
4.   Date started working on a Intervention Works project.
5.   Date ended working on a Intervention Works project.
6.   Total scheduled Intervention Works work days in previous reporting year.
7.   Total days actually worked on Intervention Works in previous reporting year.
8.   Total Intervention Works wages + ZUS in previous reporting year.
9.   Occupation code while working on Intervention Works project.
10.   Eligible for unemployment benefit when started work on an Intervention Works
      project?
11.   Eligible for unemployment benefit after finishing work on an Intervention Works
      project?
12.   Became permanently employed after ended working on an Itervention Works project?

Data List 19. Intervention works project information

1.   Intervention works project identification number.
2.   Duration of Intervention Works project.
3.   Intervention Works project total wage costs including ZUS.
4.   Date of starting intervention works project.
5.   Date of completing intervention works project.
6.   Planned number of employees (= job places).
7.   Actual number of employees hired.
8.   Industry code of company operating Public Works project.
   (1)   industry
   (2)   services
   (3)   trade (= merchandising)
   (4)   farming (= agriculture)
   (5)   transportation
   (6)   construction
   (7)   forestry
9.   Type of Intervention Works project activity.
   a. environmental protection
   b. water projects (e.g., supply or sewage treatment)
   c. forestry
   d. communication
   e. roads
   f. public housing
   g. development of social service

Data List 20. Data Requirements for Graduates Subsidized

1.   Personal Identity Number (PESEL).
2.   Date of graduation.
3.   Date started subsidized job.
4.   Average weekly hours on the subsidized job.
5.   Average monthly wage on the subsidized job.
6.   Date subsidized work ended.
7.   Sum of wage subsidies paid for subsidized graduate.
8.   Skill level while engaged on subsidized job.
9.   Did the person get permanent employment after participating in the program?
10.   Employer identification number (or business tax number).
11.   Industry code of company providing subsidized job.
   (1)   industry
   (2)   services
   (3)   trade (= merchandising)
   (4)   farming (= agriculture)
   (5)   transportation (6) construction (7) forestry

Appendix B

Computation of Performance Indicators

Computation of Performance Indicators

In this appendix we give explicit instructions for computation of the PI. A separate discussion including computation formulae is presented for each of the eight programs examined. The formulae presented here rely on variables listed in the data lists given in Appendix A.

Before proceeding to a discussion of computation formulae for the eight programs one particular variable should be discussed in some detail--that variable is administrative costs. In discussing the hierarchy of goals above, the importance of measuring administrative costs for programs was mentioned. However, because several different programs and services are administered by local labor offices (LLOs) and voivod labor offices (VLOs) it is a difficult problem to separate costs and assign them to programs. The following are the four principal categories of administrative activity of LLOs together with a listing of important sub-activities under each category:

(1) Initial Registration of Job Seekers (Registration Carta)
     i.   registration for job search
     ii.   initial unemployment compensation eligibility check

(2) Placement Service
     i.   referrals to job openings
     ii.   listing of job vacancies
     iii.   finding of job vacancies
     iv.   referrals to active labor programs (e.g. retraining, public works, self employment)

(3) Unemployment Compensation
     i.   validation of eligibility for unemployment compensation
     ii.   making of monthly unemployment compensation payments

(4) Other Activities
     i.   making contracts for active labor programs (e.g. retraining, public works, self employment)
     ii.   validation of eligibility for health services for registered unemployed
     iii.   operation of reemployment assistance programs for persons classified as disabled

While it is true that there are administrative costs for all programs the performance indicators proposed call for explicit monitoring of administrative costs only for unemployment compensation and placement service, because for these two programs administrative costs are a significant component of total costs. We therefore propose the following simple allocation of administrative costs. Let UC represent the number of persons

found to be eligible for unemployment compensation in a calendar year, let PS be the number of persons newly registered with the placement service as looking for work in a given calendar year, and let A represent total administrative costs during a calendar year. We may estimate the administrative costs as:

administrative cost of unemployment compensation = (UC/(UC+PS))*A

administrative cost of placement service = (PS/(UC+PS))*A.

This division of total costs into only two parts may be defended on the grounds that job placement and payment of unemployment compensation are the main activities of local labor offices. Indeed these are operational activities, but for purposes of the PI we consider the costs of administration to be the costs of operating the programs.

A.   UNEMPLOYMENT COMPENSATION

A.1   Administrative cost per recipient (a)

> *Total cost of administering unemployment compensation [A] / Number of unemployed persons eligible for compensation [A]*

A.2   Average compensation for a month unemployed (s)

> *(Sum (Entitled compensation for a month of unemployment for each eligigle person) [A]) / (total number of persons eligible for unemployment benefits) [A]*

A.3   Average duration as a proportion of entitled duration (d)

> *(Sum ((date unemployment benefit payments stop [A] - eligibility date for unemployment benefit [A]) / (entitled duration of benefits [A]))) / Total number of persons eligible for unemployment benefits [A]*

A.4   Average days receiving unemployment compensation (p)

> *(Sum (date unemployment benefit payments stop [A] - eligibility date for unemployment benefit [A])) / Total number of persons eligible for unemployment benefits [A]*

A.5   Average earnings replacement rate (p)

> *(Sum (monthly benefit amount of eligible claimants [A])) / Sum (base year (prior 12 months) earnings/12) [A]*

B.   PLACEMENT SERVICE

B.1   Referrals per person reemployed (r)

number of job referrals made [A] / number of persons who got a job from a Placement Service referral [A]

B.2   Average cost of finding reemployment for one person (c)

total expenses for operating Placement Service [A] / number of persons who got a job from a Placement Service referral [A]

B.3   Average administrative cost per placement service visit (a)

total expenses for operating Placement Service [A] / total number of visits to the Placement Service [A]

B.4   Average number of days until a vacancy is filled (p)

(Sum (date vacancy is filled [A] - date the vacancy is listed since the start of the year [A]) / Number of vacancies listed since the start of the year [A]

B.5   Average administrative cost per new job vacancy listing (p)

total expenses for operating Placement Service [A] / number of new vacancies listed since the start of the year [A]

C.   RETRAINING

C.1   Proportion of course completers employed at follow-up (r)

Number of course completers employed at follow-up [F] / Number of trainees who successfully finished course [A]

C.2   Average cost per course completer employed at follow-up (r)

Total cost for completed course [A] / Number of course completers employed at follow-up [F]

C.3   Average cost per training program entrant (s)

> *Cost of completed training courses [A] / Number of persons entering training courses which were completed [A]*

C.4   Proportion of entrants completing training course (p)

> *Number who finished training courses which were completed [A] / Number who entered training courses which were completed [A]*

C.5   Average monthly earnings of course completers working at follow-up (p)

> *Sum of average monthly earnings of course completers at follow-up [F] / Number of course completers employed at follow-up [F]*

C.6   Proportion of employed course completers working in occupation of training at follow-up (p)

> *Number of course completers working in occupation of training [F] / Number of course completers employed at follow-up [F]*

C.7   Proportion of course completers still employed at firm of training at follow-up (for retraining of employed) (p)

> *Number of course completers still employed at firm of training at follow-up [F] / Number who successfully completed training course [A]*

C.8   Average cost per course completer still employed at firm of training at follow-up (for retraining of employed) (p)

> *Total cost of completed courses of retraining within firms [A] / Number of course completers employed at firm of training at follow-up [A]*

D.   LOANS TO THE UNEMPLOYED FOR SMALL BUSINESS START-UP

D.1   Proportion of persons still self-employed at follow-up (r)

> *Number of persons still self-employed at follow-up [F] / Number of loan recipients [A]*

D.2   Amount of money granted per person still self-employed at follow-up (c)

Amount spent on loans [A] / Number of persons still self employed at follow-up [F]

D.3   Average amount of money granted per loan (s)

Amount spent on loans [A] / Number of loan recipients [A]

D.4   Proportion of the maximum allowable amount of money given on the average loan (u)

Average sum of money per loan (1) / According to the law maximum amount to be spent on the loan [A]

D.5   Loan repayments received as a proportion loans given (l)

Value of loans repaid during a year [A] / Cost of loans granted [A]

D.6   Additional persons hired per person still self-employed at follow-up (p)

Additional persons employed by self employed persons at follow-up [F] / Number of persons still self employed at follow-up [F]

E.   LOANS TO EMPLOYERS FOR JOB CREATION

E.1   Proportion of persons still employed at follow-up (r)

Number of persons still employed at follow-up [F] / Number of additional job places created [A]

E.2   Loan amount per person employed at follow-up (c)

Amount spent on loans [A]/ Number of persons still employed at follow-up [F]

E.3   Average loan amount per new job place (s)

Amount spent on loans [A] / Number of additional job places created [A]

E.4   Average loan as a fraction of maximum allowable amount (u)

Average loan amount per additional job place (1) / According to the law maximum amount to be spent on the loan [A]

E.5   Loan repayments received as a proportion loans given (l)

Value of loans repaid during a year [A] / Cost of loans granted [a]

E.6   Proportion of promised new job places actually created (p)

Number of additional job places actually created [F] / Number of additional job places according to contracts with loan recipients [A]

F.   PUBLIC WORKS

F.1   Proportion of workers gaining regular employment (r)

Number of public works employees who got permanent employment after completing public works [A] / Number of unemployed participating in public works [A]

F.2   Cost of subsidy per employee gaining regular employment (c)

Cost of public works monthly subsidies [A] / Number of public works employees who got permanent employment after completing public works [A]

F.3   Average cost of subsidy per employee (s)

Cost of public works monthly subsidies [A] / Number of employees in public works program [A]

F.4   Proportion of unemployed refusing to take part (n)

Number of unemployed refusing to take part in public works [A] / Number of unemployed invited to take part in public works [A]

F.5   Proportion of maximum allowable amount of money spent on the average public works project (u)

Average cost of subsidy per employee (1) [A] / According to the law average maximum amount of subsidy per employee for the time of public works being done [A]

F.6   Fraction renewing eligibility for unemployment benefit (p)

Number of unemployed who became eligible for unemployment benefit after completing public works [A] / Number of unemployed participating in public works [A]

G.   INTERVENTION WORKS

G.1   Proportion of workers gaining regular employment (r)

Number of public works employees who got permanent employment after completing public works [A] / Number of unemployed participating in public works [A]

G.2   Cost of subsidy per employee gaining regular employment (c)

Cost of public works monthly subsidies [A] / Number of public works employees who got permanent employment after completing public works [A]

G.3   Average cost of subsidy per employee (s)

Cost of public works monthly subsidies [A] / Number of employees in public works program [A]

G.4   Proportion of unemployed refusing to take part (n)

Number of unemployed refusing to take part in public works [A] / Number of unemployed invited to take part in public works [A]

G.5   Proportion of maximum allowable money spent on the average intervention works project (u)

Average cost of subsidy per employee (1) [A] / According to the law average maximum amount of subsidy per employee for the time of public works being done [A]

G.6   Fraction renewing eligibility for unemployment benefit (p)

Number of unemployed who became eligible for unemployment benefit after completing public works [A] / Number of unemployed participating in public works [A]

H. WAGE SUBSIDIES FOR HIRING RECENT GRADUATES

H.1   Proportion of participants in regular jobs at follow-up (r)

> *Number of subsidized graduates who are in regular jobs at follow-up [F] / Number of subsidized graduates participating in programs which were completed [A]*

H.2   Cost per participant in regular job at follow-up (c)

> *Total wage subsidies paid for recent graduates [A]/ Number of subsidized graduates who are in regular jobs at follow-up [F]*

H.3   Average monthly cost of wage subsidy (s)

> *Total wage subsidies paid for recent graduates [A]/ Number of months of work by graduates which were subsidized [F]*

H.4   Average duration of subsidy as a proportion of maximum allowable duration (d)

> *Average duration of subsidy per subsidized employee [A] / According to the law maximum duration of subsidy per subsidized employee [A]*

H.5   Proportion of all registered unemployed graduates participating in the program (t)

> *Number of unemployed graduates participating in the program [A] / Number of unemployed graduates registered as unemployed [A]*

H.6   Average monthly wage subsidy as a proportion of maximum allowable cost (u)

> *Average cost of wage subsidy per subsidized employee [A] / According to the law maximum cost of wage subsidy per subsidized employee [A]*

H.7   Average duration of subsidy per subsidized employee (p)

> *Sum (number of days duration of completed subsidy programs [A]) / Number of participants of completed subsidy programs [A]*

Appendix C

Outline for a Voivod Labor Market Programs Master Plan

VOIVOD LABOR MARKET PROGRAMS MASTER PLAN

OUTLINE

A. **VOIVOD IDENTIFICATION AND LABOR MARKET SUMMARY**

1. Voivod Identification
2. Geographic Description
3. Population Characteristics
4. Industrial Composition
5. Labor Market Conditions
6. Special Labor Market Circumstances
7. Special Instructions for Counties Sharing a Labor Market

B. **MASTER PLAN OVERVIEW AND GOALS FOR LABOR MARKET PROGRAMS**

1. Overview
2. Voivod Goals and Targets for Labor Market Programs

C. **MANAGEMENT SYSTEM**

1. Management Information System
2. Financial Information System
3. Procedures for Soliciting Proposals for use of Labor Market Programs money
4. Fiscal and Participant Monitoring and Evaluation
5. Grievance Procedures
6. Audit Procedures
7. Coordination with other Human Service Programs
8. Labor Market Programs Annual Plan Overview
9. The Annual Report to the National Labor Office (NLO)

D. **MONITORING THE EFFECTIVENESS OF LABOR MARKET PROGRAMS**

1. General Comments
2. Demographic, Reemployment and Follow-up Data
3. Unemployment Compensation
4. Placement Service
5. Retraining
6. Loans to the Unemployed for Small Business Start-up
7. Loans to Employers for Job Creation
8. Public Works
9. Intervention Works
10. Wage Subsidies for Hiring Recent Graduates

TABLE OF CONTENTS--Continued.

Appendix D

Outline for a Voivod Labor Market Programs Annual Plan

VOIVOD LABOR MARKET PROGRAMS ANNUAL PLAN

OUTLINE

A.   Annual Plan Overview and Labor Market Summary

    1. Annual Plan Overview
    2. Industrial Composition of Employment
    3. Industrial Composition of Unemployment
    4. Labor Market Conditions
    5. Labor Market Trends

B.   Annual Plan for Unemployment Compensation (UC)

    1. UC Management
    2. UC Monitoring
    3. Annual Report on UC Activity
    4. Annual Report on UC Performance Indicators
    5. UC Activity Forecast
    6. UC Performance Targets for the Coming Year
    7. UC Direct Cost Forecast

C.   Annual Plan for the Placement Service (PS)

    1. PS Management
    2. PS Monitoring
    3. Annual Report on PS Activity
    4. Annual Report on PS Performance Indicators
    5. PS Activity Forecast
    6. PS Performance Targets for the Coming Year
    7. PS Direct Cost Forecast

D.   Annual Plan for Retraining (RT)

    1. RT Management
    2. RT Monitoring
    3. Annual Report on RT Activity
    4. Annual Report on RT Performance Indicators
    5. RT Activity Forecast
    6. RT Performance Targets for the Coming Year
    7. RT Direct Cost Forecast

E.   Annual Plan for Small Business Start-up Loans (SBL)

    1. SBL Management
    2. SBL Monitoring
    3. Annual Report on SBL Activity
    4. Annual Report on SBL Performance Indicators
    5. SBL Activity Forecast
    6. SBL Performance Targets for the Coming Year
    7. SBL Direct Cost Forecast

F.   Annual Plan for Job Creation Loans (JCL)

    1. JCL Management
    2. JCL Monitoring
    3. Annual Report on JCL Activity
    4. Annual Report on JCL Performance Indicators
    5. JCL Activity Forecast
    6. JCL Performance Targets for the Coming Year
    7. JCL Direct Cost Forecast

G.   Annual Plan for Public Works (PW)

    1. PW Management
    2. PW Monitoring
    3. Annual Report on PW Activity
    4. Annual Report on PW Performance Indicators
    5. PW Activity Forecast
    6. PW Performance Targets for the Coming Year
    7. PW Direct Cost Forecast

H.   Annual Plan for Intervention Works (IW)

    1. IW Management
    2. IW Monitoring
    3. Annual Report on IW Activity
    4. Annual Report on IW Performance Indicators
    5. IW Activity Forecast
    6. IW Performance Targets for the Coming Year
    7. IW Direct Cost Forecast

I.   Annual Plan for Wage Subsidies for Hiring Recent Graduates (SRG)

   1. SRG Management
   2. SRG Monitoring
   3. Annual Report on SRG Activity
   4. Annual Report on SRG Performance Indicators
   5. SRG Activity Forecast
   6. SRG Performance Targets for the Coming Year
   7. SRG Direct Cost Forecast

J.   A Unified Financial Plan for the Coming Year

   1. Principles of Financial Planning
   2. Entitlement Programs
   3. Programs Using Discretionary Funds
   4. Administrative Costs
   5. Budget Estimates for Lower and Higher Unemployment
   6. Funding Request

K. Agreement on the Annual Plan between the National Labor Office (NLO) and a Voivod

   1. Voivod - NLO Agreement on the EF Annual Plan
   2. Voivod - NLO EF Annual Plan Agreement Instructions
   3. Voivod - NLO EF Annual Plan Revision Agreement
   4. Voivod - NLO EF Annual Plan Revision Instructions

Appendix E

Table of Acronyms

TABLE OF ACRONYMS

ACS: Accounting Control System
API: Application Programming Interface
APL: Active Labor Programs
AT&T: American Telephone and Telegraph Company
BBS: Bulletin Board System
BCS: Budget Control System
BOMP: Bill of Material Systems Processor
BOSP: Bill of Systems Processor
CASE: Computer Aided Software Engineering
CCS: Complaints Control System
CDB: Complaints Database
DBMS: Data Base Management System
DCS: Directing Control System
DDB: Directing Database
ECS: Executive Control System
EMD: Electronic Mail Directory
FCS: Fund Control System
GAN: Global Area Network
GUI: Graphical User Interfaces
HCS: Human Resources Control System
ICS: Institutional Statistic Control System
IM: Information Management
IRM: Information Resource Management
IS: Information System
ISF: Information System Federation
JAD: Joint Applications Development
JCS: Job Control System
LAN: Local Area Network
LCS: Legal Control System
LLO: Local Labor Office
LP-IRM: Labor Information Resource Management
MAN: Metropolitan Area Network
MDB: Mission Database
MIS: Management Information System
NLO: National Labor Office
OECD: Organization for Economic Cooperation and Development
ODB: Operations Database
OSF: Open Software Foundation
PCS: Program Control System
PDB: Placement Database
PSB: Program Statistic Database

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RMS: Records Management System
RPC: Remote Procedure Call
SCS: Statistical Control System
SDB: Service Database
SOLO: System of Labor Offices
SQL: Structured Query Language
TCS: Training Control System
UI: UNIX International
VLO: Voivod Labor Office
WAN: Wide Area Network

Appendix F

Table of Recommended Polish Acronyms

TABLE OF RECOMMENDED POLISH ACRONYMS

ACS: Accounting Control System
 SKK: System Kontrolny Ksiegowosci

API: Application Programming Interface
 IPZ: Interfejs Programowania Zastosowan
 Z uwagi na oprogramowanie w Angielskim--proponuje sie
 nie tlumaczyc na polski tego terminu

APL: Active Labor Programs
 PAB: Programy Aktywnego Bezrobocia

AT&T: American Telephone and Telegraph Company

BBS: Bulletin Board System
 SEB: System Elektronicznego Buletynu

BCS: Budget Control System
 SKB: System Kontrolny Budzetu

BOMP: Bill of Material Processor
 PWS: Procesor-Wykazu Materialow

BOSP: Bill of Systems Processor
 PWS: Procesor Wykazu Systemow

CASE: Computer Aided Software Engineering
 IOWC: Inzynieria Oprogramowania Wspomagana Computerowo
 radze nie tlumaczyc na polski

CCS: Complaints Control System
 SKZ: System Kontrolny Zazalen

CDB: Complaints Database
 BDZ: Baza Danych Zazalen

DBMS: Data Base Management System
 SKBD: System Kierowania Baza Danych

DCS: Directing Control System
 SKA: System Kontrolny Administracji

DDB: Directing Database
    BDA: Baza Danych Administracji

ECS: Executive Control System
    SKK: System Kontrolny Kierownictwa

EIS: Executive Information System
    SIK: System Informowania Kierownictwa

EMD: Electronic Mail Directory
    KEP: Ksiazka Elektronicznej Poczty

FCS: Fund Control System
    SKF: System Kontrolny Funduszy

GAN: Global Area Network
    GSK: Globalna Siec Komputerowa

GUI: Graphical User Interfaces
    IGU: Interfejs Graficzny Uzytkownika

HCS: Human Resources Control System
    SKZ: System Kontrolny Zatrudnionych

ICS: Institutional Statistic Control System
    SKSU: System Kontrolny Statystyki Urzedu

IM: Information Management
    KI: Kierowanie Informacjami

IRM: Information Resource Management
    KZI: Zarzadzanie Zasobem Informacyjnym

IS: Information System
    SI: System Informacyjny

ISF: Information System Federation
    FSI: Federacja Systemow Informacyjnych

JAD: Joint Applications Development
    PWZ: Projektowanie Wspolne Zastosowan

JCS: Job Control System
 SKP: System Kontrolny Pracy

LAN: Local Area Network
 LSK: Lokalna Siec Komputerowa

LCS: Legal Control System
 SKU: System Kontrolny Ustawodastwa Bezrobocia

LP-IRM: Labor Information Resource Management
PB-ZZI: Programy Bezrobocia--Zarzadzanie Zasobem Informacyjnym

MDB: Mission Database
 BDM: Baza Danych Misji Urzedu

MIS: Management Information System
 SIZ: System Informacyjny Zarzadzania

NLO: National Labor Office
 KUP: Krajowy Urzad Pracy

OECD: Organization for Economic Cooperation and Development
 OEWR: Organizacja Ekonomicznej Wspolpracy i Rozwoju

ODB: Operations Database
 BDO: Baza Danych Operacji

OSF: Open Software Foundation
 FOO: Fundacja Otwartego Oprogramowania

PCS: Program Control System
 SKP: System Kontrolny Programow

PDB: Placement Database
 BDP: Baza Danych Pracy

PSB: Program Statistic Database
 BSP: Baza Danych Statystyki Programow Aktywnego Bezrobocia

LLO: Local Labor Office
 RUP: Rejonowy Urzad Pracy

RMS: Records Management System
      SKA: System Kierowania Archiwem

RPC: Remote Procedure Call
      ZPP: Zdalne Przywolanie Procedury

SCS: Statistical Control System
      SKS: System Kontrolny Statystyki Programow

SDB: Service Database
      BDU: Baza Danych Uslug

SOLO: System of Labor Offices
      SUP: System Urzedow Pracy

SQL: Structured Query Language
      JSZ: Jezyk Strukturalnych Zapytań
      raczej nie tlumaczyc na polski

TCS: Training Control System
      SKS: System Kontrolny Szkolenia

UI: UNIX International
      MU: Miedzynarodowy UNIX

VLO:Voivod Labor Office
      WUP: Wojewodzki Urzad Pracy

WAN: Wide Area Network
      SKW: Siec Komputerowa Wielkiego Obszaru

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W.E. Upjohn Institute for Employment Research

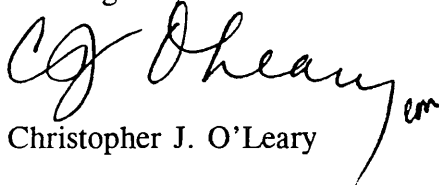*Christopher J. O'Leary, Senior Economist*

October 4, 1993

Dr. David Fretwell (EC2HR)
The World Bank
1818 H Street, NW
Washington, DC 20433

Dear David:

Enclosed is a copy of the most recent report we have made on the Poland project (we previously submitted one paper proposing a new UI law and another summarizing performance indicators for labor market support programs). I am sending this directly to you because I think it is quite unique. It should provide concrete guidance to the Poles on a very complex problem. I have never seen another paper like this one.

I will be in Hungary this month to do implementation on the performance indicators system. I'll be back in November. Please drop me a note with your reaction if you get a chance to look through the enclosed report.

Best regards,

Christopher J. O'Leary