

Practices That Work!

Reason for starting the innovative practice

“The objectives of MIS is to improve the delivery of basic services to the people (efficiency); provide transparency and accountability in government transactions; and increase government capability for planning, policy formulation and program implementation to meet the challenges of local governance, national growth and globalization.” (From the Gawad Galing Pook 1999-2000 entry of the Provincial Government of Bulacan)

Role of Implementing Organization

MIS Division as implementing organization:

- Assist the Provincial Governor;
- Coordinate activities;
- Provide the core staff;
- Provide technical support;
- Synergize with other supporting organizations and donors.

How it works (Processes and Resources)

[From the Gawad Galing Pook Entry of the Provincial Government of Bulacan.]

Process

Essentially, the Provincial Government successfully empowered the potentials of computers as a management tool for a more responsive local governance. Building in-house technical capability, not only of the Provincial Government, but the component municipalities as well, in developing, installing and managing a sustainable management information system, enhanced and made the delivery of support services more effective. As such, task implementation generally proceed as follows:

Organized the MIS core staff/office. First priority was given to harnessing existing personnel who have had training on computer operations. A preliminary situations analysis conducted for the Province has in fact identified a good number of personnel with computer knowledge and skills at varying levels, but who have remained untapped for one reason or another. Technical assistance (TA) provision included developing these personnel into a pool of in-house computer staff for purposes of technology transfer.

Conducted Provincial Government’s Systems Study. Through interviews, workshops, questionnaires, and the like, Provincial Govern-

General Information

Innovative Practice Name

Bulacan Information System

Location: Malolos, Bulacan

Date Started: 1996

Date Completed

Estimated Cost: P 7,393,478 for 1999
Project Where Practice Is Done:

Provincial Government of Bulacan and selected component municipalities (e.g., Pulilan)

Award(s) Received by Project:

Gawad Galing Pook 1999-2000

Awarding Body/E-mail/Web Site

Galing Pook Awards,
Center for Development Management,
Asian Institute of Management,
123 Paseo de Roxas, Makati City;
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ment was able to determine the expectations from the computerization project. Document of confirmed existing manual or computerized systems formalize information requirements; determine the scope and parameters of the individual computerized systems; determine the level of interface required among the applications systems; document existing information technology resources including hardware, software and manpower resources. Other study activities yielded among other things, a definition of the overall concept of operation. Including interfaces among the computerized application systems as well as relevant manual systems; an identification of the appropriate technology platform, which includes the system architecture, software strategy, hardware strategy, and organization of institutional strategy of the computerized system; timetable for system implementation and implementation imperatives; and cost estimates. The study report was presented before the Provincial Government officials and employees concerned.

Formulated the Provincial Information System Plan. The Provincial Information System Plan (PISP) was formulated based on an outline resulted from the conduct of the Technical Working Group for the purpose with the United States Agency for International Development (USAID) through the Associates in Rural Development – Governance on Local Democracy (ARD-GOLD Project) technical assistance and approved by the Provincial Governor.

Identified Provincial Information Systems Priorities. From among the critical information systems identified through the above study, the Provincial leadership has chosen initial set of three (3) application systems for computerization with GOLD Project support.

Defined Technical Specifications of Overall and Identified Systems Priorities. This includes output, input, process, file, software, hardware and manpower specifications.

Evaluated Software Packages based on software specifications for identified systems priorities (in case of procurement of available off-the-shelf software). GOLD provided Technical Assistance (TA) to Bulacan in acquiring the appropriate software to ensure that it conforms to specifications.

Designed and developed customized software for the identified application system priorities (in case of customized approach). This is an alternative approach, which computerization efforts taken only when the appropriate off-the-shelf softwares are not available, or fails to conform to specifications. Software development ensures that in-house programmers are used for the purpose with GOLD providing hands –on, over-the-shoulder training.

Installed and Tested Hand Software Package. Database building mobilized local personnel, with GOLD providing hands-on-training.

Implemented Computerized Systems. Requires doing the following for each of the application areas:

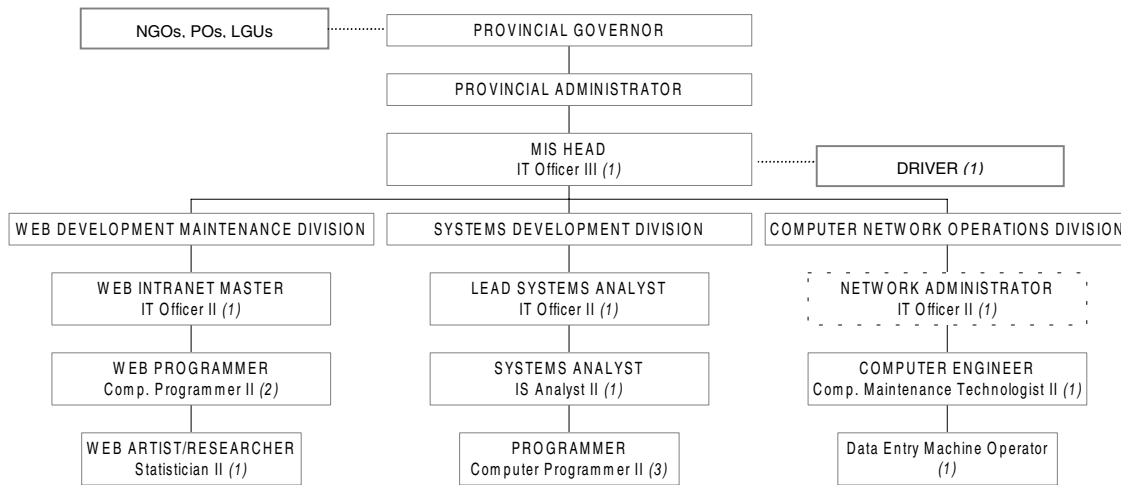
- a. Conduct of theoretical trainings for executives and technical/ administrative personnel designated for the purpose.
- b. Conduct of computerization preparatory work; and
- c. Conduct of over-the-shoulder training for designated staff of the offices concerned on actual software operations, and computerized system.

Finalized the Operating Manuals for the Computerized LGU systems priorities. The manuals are used by operating units or personnel in running the respective systems under a computerized environment. The running systems are user-friendly enough to allow the personnel concerned to operate the systems with least or no assistance from computer specialists.

Resources

Personnel

Below is the organizational structure of the MIS office:



The MIS office with a total of 14 staff, is headed by Mr. Rex M. Mangalindan, and composed of three divisions, the Web/Intranet Development and Maintenance Division (4 personnel), the Systems Development and Maintenance Division (5 personnel), and Computer Network Development and Maintenance Division (3 personnel).

The Web/Intranet Development and Maintenance Division is responsible for the development and maintenance of the provincial Internet/Intranet; the Systems Development and Maintenance Division is responsible for the development and maintenance of the identified application systems; and the Computer Network Development and Maintenance Division is responsible for network administration and maintenance which includes the administration of database, network management and optimization, and hardware care and maintenance.

Students from different local colleges and universities (Bulacan State University, University of Regina Carmeli, AMA Computer College, STI College, etc) are tapped by the MIS office, totaling to sixteen (16) student trainees in 1999, also had substantial contribution in the implementation of the BIS programs. They were trained in certain systems operation and programming and helped in data encoding and other related tasks.

Budget

1999 MIS Program Budget

| MIS Office Budget | Amount Allocated (1999) | Percentage |
|--|-------------------------|---------------|
| Maintenance & Other Operating Expenses | 410,000 | 5.55 |
| Personal Services | 2,183,478 | 29.53 |
| Capital Outlay | 4,500,000 | 60.86 |
| Supplies | 300,000 | 4.06 |
| Total | P 7,393,478 | 100.00 |

In the 1999 program budget, MIS office incurred 29.53% expenses in personal services and 60.86% in capital outlay. However, outputs of the MIS office in terms of developed systems and web sites, customized presentations, and other technical assistance provided, enabled the PGB to save an estimated P 2.5 million in 1999. (Details shown in 2.1- f)

How barriers/obstacles were overcome

[From the Galing Pook entry, just cited]

The following are major problems encountered during the planning and implementation stages of the program.

- Resistance to change
 - Our first target was Real Property Tax Information System (RPTIS) but since this is long range, the Provincial Government of Bulacan embarked on Personnel Management Information System (PMIS) first. When the government employees saw that the system works and their payrolls were processed on time and that they don't have to give small rewards to people processing the payroll they started believing in computerization.
 - Constant dialogues by the governor to the employees have allayed fears.
 - The weekly dialogues with Birthday celebrants also facilitated that the Governor come face to face with the employees and learn of their concerns and address their concerns personally.
- Lack of knowledge in computer operation
 - Orientations on computerization among departments where done by the Governor herself
 - MIS took a lead in teaching government employees and department heads
 - An executive order made computer literacy mandatory for everybody
 - Typewriters were slowly phased out.
 - The Governor's presentations locally and for international conferences were done in PowerPoint. Department heads were also encouraged to do the same.
 - We had a program of continuous upgrading of computer units and computer skills.
- Apprehension regarding displacement of personnel due to reorganization
 - Fears of displacements of personnel were allayed by re-training, re-orientation, transfer, and/or for those that really have to be reorganized out we gave them ample time to look for jobs; the government even assisted them.

Details of benefits and results

Accomplishments

Information Technology (IT) intervention at the provincial level is done at three levels: province, municipality, and barangay. Bulacan's IT intervention did not only involve the provincial government but is presently intervening at the province's 24 municipalities which goes to show the scope by which the IT intervention has to embrace. The IT intervention spearheaded by the province is customized to fit its own needs and that of its 24 towns. To have a data bank responsive to the need of the bureaucracy and its 2 million people would show the magnitude of information needed.

The data processed and stored in our Personnel Management Information System (PMIS) were instrumental in making sound policy decisions in the reorganization of the bureaucracy. On the other hand, the data in our Real Property Tax Information System (RPTIS) facilitated undiscovered properties be known and assessed and will help in our revenue generation efforts. Through Geographic Information System (GIS) it will be easier to determine lot parcels without tax declarations for data banking purposes. These data are essentials in making sound

policies which lead to greater efficiency in revenue generation.

The accomplishments cover the status of the project before and after establishing the MIS office, the status of the project in terms of the already developed and installed Information Systems in the Provincial Government, and several Provincial Government programs that help other Local Government Units.

| Indicator | Before | After |
|---|--|--|
| 1. The Provincial Government of Bulacan before and after establishing MIS | | |
| Extent of Computerization | The PGB only has 10 computer units | Sixty-three (63) computer units were used by different offices |
| Software Used | DOS-based application systems (Wordstar, Lotus 123, etc.) | Windows-based application systems (MS Word, Excel, PowerPoint, etc.); and software designed for provincial government operations |
| Computer Literacy | Only the employees who do the payroll preparation are computer literate. | All employees of the PGB are required to have undergone computer literacy course (including the Department Heads) |

2. Concerning the Component Information Systems of the BIS, the accomplishments are as follows:

2.a. Information Systems that are fully-operational in the Provincial Government

2.a.1. **Personnel Management Information System (PMIS)**

The system is operated in the Provincial Human Resource Management Office (PHRMO). It maintains 1752 employee records like personal information, seminars and trainings, leave credits, deductions, service records, and the like. Integrated in the system, are modules for payroll management and timekeeping. Employee attendance is now monitored using the digital time recorder or the swipe machine. The system is connected via the Local Area Network (LAN), a networking facility which provides online communication between the MIS office and the PHRMO.

The following are components of the PMIS:

- Personnel Management
 - Employee 120 Files (Personal Data, Educational Background, Eligibilities, Seminars and Trainings, and Service Records)
- General Payroll System
 - Effective in the preparation of :
 - Monthly Payroll of the Provincial Government
 - Remittances done in the Accounting Office (GSIS, PAG-IBIG, MEDICARE)
 - Payslips of Employees (1752)
 - Alpha List (Summary of Employee's Annual Income Tax)
 - BIR form 2316
 - Employee Master List
- Timekeeping System
 - Leave Credits / Balances
 - Personnel Attendance Report
 - Daily Time Record

2.a.2. Provincial Government of Bulacan (PGB) Web Site

The PGB web site, which can be found at <http://www.bulacan.gov.ph>, contains vital information about the province of Bulacan. With this information in the Internet, the Provincial Government operations become transparent. Also it is able to promote investments and international relations. Moreover, it offers an avenue for job seekers and job providers and serves as an instrument to entice different foreign investors. As of December 1999, about 22,000 Internet users all over the world had visited and had accessed the web site, and the Province is continuously receiving good feedback from those who signed in the PGB web site Guests Book.

The following are features of the PGB web site:

- Directory of Bulacan Elected Officials and PGB Department Heads
- Digital/HTML version of the PGB Monthly Newsletter – TSO (The official publication of the Provincial Government employees)
- Updates on the Bulacan Information Systems
- Governor's Corner (Updates on Gov. Josefina dela Cruz's major activities and accomplishments)
- Directory of major commercial, industrial, and historical sites
- PGB On the Go (Updates on the important events and activities inside the Provincial Government)
- Links to municipal web sites in Bulacan, i.e. Pulilan and Malolos web sites

With this web site, Gov. Josie dela Cruz is certain that the Bulakeños are able to access, audit and assess her present administration.

Updating of the PGB web site is done monthly by the Web Development and Maintenance Division.

2.a.3. Bulacan Geographic Information System (GIS) for Comprehensive Land Use Planning

The geographic information system helped in the preparation of the comprehensive land use plan of the province. The project is pursued to address problems on unguided urbanization, to decongest lowland areas, and to open up new areas for development in the midland and upland portions of the province. The GIS Center of the Provincial Government is under the Provincial Planning and Development Office (PPDO) when this application was developed.

This year, the GIS center of the PPDO will be transferred to the MIS Office in order to keep the data banking system of GIS applications at the MIS Office. However, several GIS equipment will remain at the PPDO for the maintenance of projects for planning purposes.

2.b. Information Systems that were developed and installed yet put under parallel run (testing) and/or on the process of building-up databases.

2.b.1. Real Property Tax Information System (RPTIS)

RPTIS is a system to be used in the Assessor's Office for property assessment, and in the Land Tax Division of the Treasurer's Office for the system of billing and collection of tax. The system provides an updated, accurate assessment roll of all real property units. Also, it is capable of generating assessment notices, tax bills, and list of past due accounts on a timely manner.

The system was already installed in three pilot municipalities – Meycauayan, Pulilan, and Guiguinto. Assessor's Office staff of these three municipalities have started encoding the Field Appraisal and Assessment Sheet (FAAS) data and it is expected that by the end of the first quarter of this year, RPTIS will be fully operational in these municipalities.

The following were developed modules for RPTIS:

- Assessment of Real Properties (This contains the individual record of assessment of property be it Land/Plants & Trees, Building or Machinery, the property owner, location, and corresponding assessments.)
- System of Billing the Taxpayers (Refers to the system of generating notices and tax bills, computation of tax due, and determining delinquent accounts.)
- Collection of Real Property Taxes (It facilitates collection of real property taxes.)

2.b.2. GIS application for “Reclassification of Real Properties for Land Use”

The GIS application is tied up to RPTIS where RPTIS database is used to link the real property records and assessments to the digital map. Close coordination between the three offices (Assessor’s Office, MIS Office, and Planning and Development Office) has made the project possible. The team has finished the application for the pilot barangay Hulo of Meycauayan, and they are presently working on remaining 25 barangays of Meycauayan to finish the project until March of this year.

This application will help to establish a complete inventory and identify ownership of every piece of real property. This would account for the sum total of all land areas of the province as a whole and help improve tax collection in real properties which is the second biggest source of revenue for the province.

As of December 1999, all section maps of Meycauayan have been digitized. The database to be linked to the digital map will come from the Meycauayan real property database.

2.b.3. Property Management System (PMS)

This system intervenes in the General Services Office where records of properties and supplies are maintained and is linked to the Accounting Office via the local area network. After having been put in order the records of inventory to the property management database, use of the bar coding technique will be utilized to improve the system of recording and maintenance. Five (5) operators and one supply officer of the General Services office were trained on the inventory operations and they have started encoding the inventory reports. It is expected the data entry will be finished by March of this year.

The following were developed modules for PMS:

- Material/Equipment Information (It contains the individual record of materials and equipment like serial number, date of purchase, quantity, etc)
- Inventory and Purchasing (It facilitates the recording of purchase of materials, equipment and supplies)
- Job Costing (It facilitates the recording of amount of services and maintenance made)
- Posting to the General Ledger (It facilitates link to the Accounting Office for the necessary auditing of materials, equipment, and supplies included in the inventory)
- Recording of Accounts Payable and Receivables

2.b.4. Case Tracking of Illegal Drugs Information System (CTIDIS)

The system was developed in coordination with the Bulacan Police Provincial Office. This will systematize the recording and monitoring of illegal drug cases in the province.

The following were developed modules:

- Suspect/Violator Information Recording which contains the individual record of persons/ violators.
- Identifying Drug Cases and Circumstances which provides information on the origin, background, and the status of the case at hand

2.b.5. Medical Supplies Information System (MSIS)

Primarily, this system is developed for the Provincial and District Hospitals of Bulacan to systematically monitor the status of medical supplies in the hospitals, particularly medicines and laboratory equipment.

As of January 10, 2000, the Provincial Health Office together with the 8 district hospitals have completed the installation of the system. Training to eight (8) operators was made beforehand.

The following were developed modules for MSIS:

- Supplier, Customer and Article Recording (It contains records of the supplier and/or customer and article coding, i.e. supplier name, supplier address, customer's name, customer address, article number, article description, etc.)
- Medical Supplies Inventory (It facilitates the recording of medicines and medical equipment, their corresponding purchase date, expiry date, quantity, etc.)

2.b.6. Environmental Permit and Monitoring System (EPMS)

The system intends to improve the existing record keeping capabilities in the updating of the applications for the environmental permit, generating/issuance of valid permits, and support the Provincial Environment and Natural Resources Office (PENRO) system of records management.

The following were developed modules for EPMS:

- Automated Issuance and Recording of Mining Permit
- Automated Issuance and Recording of Environmental Compliance Certificates and other Environment-related Information

2.b.7. Provincial Government of Bulacan (PGB) Intranet

Bulacan is the first LGU in the region to implement the Intranet technology. With the intranet, different departments can have simultaneous communication with the other departments – memoranda and other form of inter-office communications can now be retrieved and sent through e-mail by means of inter-office electronic connection. With a total of 72 connections, 19 offices have their connections ready for the Intranet which is expected to be online by March. The province's Intranet will use the applications for the first four pilot offices, namely, Provincial Governor's Office, Provincial Administrator's Office, Provincial Human Resource Management Office, and Provincial Budget Office.

The following are features of the PGB Intranet:

- Employees on their own can access service records, leave credits, and other personnel information which are available in the PMIS
- The Intranet will facilitate the storage of surveys and feedback, program notification, reports, memoranda, comments and replies, program promotions and advertisements, and other spontaneous data entries.
- With Intranet, progress inquiries, memo distribution, data collection and other inter-active database inquiries are possible

2.c. Future plan to implement an Archival System of Property Records

The archival system is capable of tracing history of each title down to its original decree of registration and first certificate of title. Also, it is capable of validating the technical accuracy of each lot description written in the certificate of title through a sophisticated, laser-based, non-erasable archival media storage-based system. This will facilitate records of property ownership to be contained in a laser card. With this system, over 700,000 land titles and 20,000 maps of the province of Bulacan will be safe from fire or any disaster.

2.d. MIS Programs that help other Local Government Units

2.d.1. Mayor's Permit and Licensing Information System (MPLIS)

The Governor has been very aggressive in sharing and transferring the technology to the 24 component municipalities of Bulacan. PGB helped them in automating the mayor's permit and licensing system by providing them technical assistance in the development and installation of the system and training the people who will use the system.

Three municipalities have already a complete MPLIS installation. Twenty-one (21) others will follow as soon as their computer facilities are ready.

The following were developed modules for MPLIS:

- Recording Business Information maintains the individual record of business information including its owner, location, initial capitalization, number of employees, etc.
- Assessment of Fees facilitates the recording of assessment and computation of tax due
- Collection of Fees facilitates collection of tax due for a particular mayor's permit applied

2.d.2. Development of Municipal Web Site

Internet is a great medium for attracting investment opportunities. PGB helped its 24 component municipalities in promoting and opening to the world their variants for infrastructure development and the delivery of basic services which can be used to entice different foreign investors.

Two municipalities are already hooked up to the provincial web site, Pulilan and Malolos. Other than these, web sites of Sta. Maria, Calumpit, Hagonoy, Balagtas and Guiguinto, were already developed and will go online during the first quarter of the year.

3. Additional Accomplishments

The MIS staff assisted the Governor and some departments of the Provincial Government in doing PowerPoint presentations. Five (5) international, thirty-two (32) local, and sixteen (6) other presentations were prepared and successfully shown to various interest groups.

MIS personnel have also become resource persons in the conduct of 21 Y2K orientations. They provided orientations to two (2) Non-Government Organizations, fifteen (15) local schools, colleges and universities, and four (4) other local government units. Also, MIS personnel have also become resource speakers to share the Bulacan MIS experience at the National Convention during the League of Provinces meeting held at Pili, Camarines Sur last October 4-8, 1999.

The office also provided technical assistance to the 24 municipalities in the installation of the component information systems such as the RPTIS and the MPLIS (Mayor's Permit and Licensing Information System). Four municipalities have already completed the installation of the said systems — Meycauayan, Pulilan, Guiguinto, and Bustos. Moreover, the province has also assisted in the development of municipal web sites. Two municipal web sites of Pulilan and Malolos are now hooked up to the provincial web site. Other than these, web sites of Sta. Maria, Calumpit, Hagonoy, Balagtas, and Guiguinto were already developed and will go online during the first quarter of the year.

The MIS office also helped in the computer literacy program of the Provincial Government. Employees were given basic training on Windows 95/98, MS Word, Basic Trouble Shooting, MS Excel, and MS PowerPoint. Eight (8) district chiefs and 8 computer operators from 8 district hospitals, 8 staff from the Budget Office, 3 from the Sangguniang Panlalawigan, and 2 from the Women Center were given certificate of completion for the said computer literacy training.

With pride and pleasure, the Governor through the MIS office was proud of bringing to the people who came to visit the province the province's significant accomplishments in terms of progress in Information Technology. The office has been visited not only by people coming from different local government units in the Philippines

but also those from other countries. Since January, 1999, twenty-nine (29) foreign visitors from Japan, USA, Indonesia, and Canada were recorded to have visited the MIS Office. In addition, 327 have enjoyed their LGU Lakbay-Aral composing of Governors, Provincial Government Department Heads, Mayors, Provincial and Municipal Board Members, Employees, and Barangay Officials.

Benefits from Computerization

1. **PMIS:** Systematic files of employees, computerized processing of salaries and remittances, and salary withdrawal using ATM cards of Expressnet

| Process | Without PMIS | With PMIS | Benefit/Improvement |
|---|---|---------------------|---|
| Payroll Preparation | Done by 26 Admin. Staff of all Departments/ Divisions | Done by 4 personnel | 22 personnel less (84%) Estimated Annual Savings in Salaries is P 2.5M |
| Processing Time in the Preparing of Service Records | Done 20 minutes | Done in 15 seconds | A 19.75-minute improvement (98.75%) |
| Processing Time in Determining Leave Credits | Done in 5 minutes | Done in 30 seconds | A 4.5-minute improvement (90%) |
| Processing Time in Preparing Remittances (GSIS, PAG-IBIG, MEDICARE) | Done in 5 days | Done in 4 hours | A 4.5-day improvement (90%) |
| Processing Time in Preparing Pay slips (1, 752 employees) | Done in 5 days | Done in 4 hours | A 4.5-day improvement (90%) |
| Processing Time in Preparing Alpha List | Done in 5 days | Done in 30 minutes | A 5-day improvement (98.75%) |
| Processing Time in Preparing BIR Form 2316 | Done in 25 days | Done in 3 days | A 22-day improvement (88%) |
| Processing Time in Preparing Employee Master List | Done in 8 hours | Done in 30 minutes | A 7.5-hour improvement (93.75%) |

2. **RPTIS:** Facilitates assessment and appraisal, as well as tax enforcement capabilities (Based from Actual Test)

| Process | Without RPTIS | With RPTIS | Benefit |
|---|--|--|---|
| Processing of simple Real Property Unit (RPU) | Done in 30 minutes (average) | Done in 2 minutes (average) | A 28-minute improvement (93%) |
| General Revision | All documents are reviewed again for re-assessment | Just input new schedule of base unit value, then every property information will be automatically updated. | Can reduce <u>100%</u> of manpower doing revised FAAS; an average of 10 personnel each municipality |
| Production capacity to produce documents to support decision making | Prepared in 1 month | Capable of support assessment and appraisal. Tax bills and notices of delinquencies for the whole municipality can be mass produced automatically in one day | A month improvement |

3. Provincial Government was able to downsize the bureaucracy by means of the automated procedures. Computerized systems can replace the mechanical jobs done by many clerks in the office, thus, having able to move on to a more efficient, reliable, cost-effective, user-friendly and highly adaptable system.
4. The computerization of several Provincial Government operations had great impact in the 1999 re-organization. Plantilla positions were upgraded by 22 percent (383) and a reduction in the number of plantilla positions by 7 percent (126). From 1993 to 1999 workforce in the Provincial Government was reduced by 16 percent (325).
5. Provincial Government Offices running information-based operations are now more productive, effective, and employees have higher morale. Productive employees, likewise, are rewarded with high salaries and given due incentives.
6. Before, so many personnel are involved in several operations yet workforce is not empowered. With the BIS, government operations are done faster in less man-hour and less people doing the job. Involved offices with bloated personnel were trimmed down by automating the office procedures resulting to a more responsive and more competitive provincial administration.



The Practices That Work! series is a publication of the Governance and Local Democracy (GOLD) Project made possible through support of the United States Agency for International Development (USAID) under the terms of the GOLD Project Contract No. 492-0471-C-00-5089-00. The opinions expressed herein do not necessarily reflect the views of USAID.