

Managing Statistical Development and Information Technology for the Philippines NSO¹

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For many organizations, ICT offers the opportunity to raise productivity and efficiency. The Philippines National Statistics Office invests in ICT to gain advantage of its benefits to the organization.

ICT has contributed to the streamlining of processes, to increasing productivity and performance and to making monitoring more effective. It is important to point out that the introduction of ICT alone is not sufficient in realizing the benefits to NSO. It is a powerful tool that is being complemented with appropriate management strategies.

ICT is used in various applications in the office. Among others, this is used in managing census and survey operations, in disseminating statistics, in storing and retrieving civil registry documents, in providing services closer to clients, in getting feedback from clients, in generating administrative reports and in managing internal administrative records of the office.

Efficiency and Effectiveness in Managing Census and Survey Operations

The most commonly known use of ICT in national statistical offices is in data processing. Advances in data capture technology and software packages have increased productivity in data processing. The use of web-enabled questionnaires have likewise increased response rates, particularly in establishment surveys.

This section presents some applications developed by the NSO for managing other aspects of its census and survey operations.

The Monitoring and Tracking System of Business and Industry Surveys and Censuses

NSO developed the Monitoring and Tracking System (MTS) to manage the control list of business and industry censuses and surveys being conducted by

¹ Country Paper for the Sixth Management Seminar for the Heads Of National Statistical Offices in Asia and the Pacific, 28-30 May 2007, Hong Kong, China.

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NSO. The MTS is designed to facilitate the tracking of the questionnaires and monitoring the progress of the census or survey operations. This system also makes possible the capture of new reporting units for referred questionnaires and newly identified establishments. It also provides a basis for adjusting the workload of provincial offices as a result of referrals and identification of new samples.

It was initially used last year to monitor the progress of the 2005 Annual Survey of Philippine Business and Industries (ASPBI). It provided management with the day-to-day status of distribution and collection of questionnaires at the national, regional and provincial levels. It also gave information as to the number of “good” questionnaires, referrals and closed establishments. Areas which lagged behind schedule were monitored at the earliest possible time so that areas needing assistance were identified. It also helped in increasing the response rate as field offices were able to compare their collection performance with each other. It made management of operations easier by making progress report figures available at anytime.

“We are pleased to provide to you the progress report of the 2005 ASPBI and its DOST Rider as of Dec. 28, 2006. Actual receipt of ASPBI questionnaires at the Central Office is 95.5%. We hope we can surpass this record in the 2006 CPBI. As for the DOST rider, we only have an 86.4% receipt”. – NSO Director for Industry and Trade Statistics Department

The MTS is also being used for the 2006 Census of Philippine Business and Industry, which is currently being undertaken by NSO.

The Census 2007 Progress Monitoring System

NSO will conduct the 2007 Census of Population starting August 1. Because this is a massive operation, NSO will make use of ICT extensively in monitoring, data processing, evaluation, and dissemination. Apart from the data capture of census questionnaires using the ICR technology, NSO will use the Progress Monitoring System (PMS) to monitor the progress of the census operation, to check for overcount and undercount at the earliest stage and to evaluate the coverage of enumeration.

The PMS makes use of pre-registered mobile phones and computers in providing census counts for monitoring purposes through Short Messaging Service (SMS) or text message. Registration of mobile phones is necessary to filter out prank text messages and check the consistency of the geographic area of assignment of the census area supervisors and the geographic area code cited in the text message.

The PMS for POPCEN 2007 has three components, namely, the Central Office version; the Provincial/Regional Office version; and the Web-Based Progress Monitoring System.

- o Central Office Version: The central office serves as the center for census operations. It receives PM text messages sent by census area supervisors. It then automatically acknowledges valid text messages by sending a unique SMS receipt number. PM text messages are included in the PMS database. Operational and management reports are then generated for monitoring and evaluation. This component is also capable of sending the data files to field offices for further scrutiny and evaluation.
- o Provincial/Regional Office Version: This component also has the functions of generating reports, updating the SMS transaction file and sending the updated SMS transaction file to the central office. Thus, this component enables the field office to reflect corrections in the erroneous PM text messages already sent to the central office. Sending of corresponding updated file is automatic.
- o Web-based Progress Monitoring System: This system is a restricted NSO web-enabled system that allows management and field offices to monitor the progress of enumeration. Field enumeration status reports are automatically generated directly from the database.

The following reports are made available by PMS: (1) Enumeration Area Assignment Report; (2) EA Coverage Report; (3) SMS Transaction Report; (4) Progress of Enumeration; (5) Data Evaluation Report.

Dissemination of Statistics

Information has become a lot more powerful since ICT, particularly the internet, came in. The internet provides the bridge for information to reach its users faster. NSO developed its website on its own. Users have easier access to data through the NSO website, where selected data, announcements and other important features of statistical activities are posted.

The basic issue in this area is the extent of efforts in populating the databases and posting them on the website. Because of resource constraints, this aspect is more often given a lower priority compared to actual conduct of statistical operations, delivery of services and in-house development of computerized application systems. However, NSO generates public use files (PUFs), which are advertised in the NSO website.

NSO's investment in ICT equipment such as computers and projectors in the field offices proved to be advantageous. The field offices are able to present statistics in various locations, thereby making data more popular even to the

teachers and children in public schools, to the officials in villages (barangays), and not only to the policymakers at the national and regional levels.

“Citizen-Centric” Information Systems for Civil Registration Services

The NSO implements the Civil Registry Law and exercises technical supervision over the local civil registrars. It serves as the central repository of civil registry documents.

Through the Decentralized Vital Statistics System (DVSS), an integral component of the computerized system described below, it provides vital statistics and other related information to the public. For example, queries on the most popular names given to children born in a particular period can now be addressed.

This section presents some developments that have enhanced productivity and efficiency in frontline civil registry services to the public as a major function of the NSO.

The Civil Registry System Information Technology Project (CRS-ITP)

The NSO entered into a build-operate-transfer scheme with a private sector partner basically to provide improved civil registration services in the country. Called the Civil Registry System Information Technology Project (CRS-ITP), it involves the computerization of the civil registry operations of the NSO and is designed to collect, store and manage civil registry documents, and specimen signatures of all city and municipal registrars, including all authorized signatories, using imaging technology. This project envisions enhanced public service delivery through expeditious processing of requests, shorter lines at the application and payment counters, and improved facilities ---- all for the convenience of the public. The objective of the NSO-CRS project is "while-you-wait" processing after full system implementation. Broadly, the project includes the development of application systems, provision of hardware and software, setting up of a Central Facility and 40 on-line service outlets nationwide (called the “Serbilis Centers”) and the conversion of about 120 million documents into digital formats.

As of 2 April 2007, 83.2 million birth records (1945-2006); 18.9 million marriage records (1945-2006); and 15.6 million death records (1988-2006) for a total of 117.8 million records have been scanned, indexed and loaded in the CRS database. This activity is a continuing one.

Systems-generated statistics are an indispensable tool for planning, monitoring, and trouble-shooting. Based on operations statistics for April 2007, the NSO processed a daily average of 34,000 requests nationwide using the

CRS system. About 95 percent of the requests are serviced through the database.

Some of the problems encountered in implementing the CRS-ITP are (1) occasional system downtime which is beyond the control of NSO, mostly power failure and breakdown in communication lines; (2) manpower constraints specifically frontline personnel necessary to address increases in volume of transactions being served; and (3) blurred/damaged source documents producing unclear images when scanned.

E-Census

The e-Census is the Internet component of the CRS Project that extends the services of the system through the web. It is also an information source on civil registry services. The NSO website <http://www.census.gov.ph> provides a link to this service. An individual visiting this link gets informed of the civil registry services offered by NSO through the Internet.

Through <http://www.e-Census.com.ph>, the public can file requests for copies of civil registry documents in the comfort of their own homes and offices. Individuals with access to the internet need not queue at the outlets for documents that are delivered to the client. It benefits NSO operations in terms of crowd management.

Helpline Plus

The NSO Helpline Plus extends civil registry services through telecommunications. Although not actually part of the CRS-ITP, it provides a facility for the public to file requests for copies of civil registry documents in the comfort of their own homes and offices through phone by dialing +632 737 1111. An added feature of this service is its helpdesk, +632 737 1112, which provides clients with information of the status of their requests, plus information on other activities of the NSO. Like the e-Census, this telephone-based service enhances NSO service to the public because individuals need not queue at the outlets, and documents are delivered to the client. It likewise benefits NSO operations in terms of crowd management.

BREQS

The Batch Request Entry System or BREQS is an offline facility developed and owned by NSO that allows clients to request for and receive copies of civil registry documents at partner institutions who serve as BREQS outlets. Batch requests are transmitted by the partner institutions by electronic mail, and are delivered by courier service or through liaison officers. Actual processing of the batch requests takes place at the nearest NSO on-line servicing outlet. The release of documents to the client takes place in the BREQS outlets.

There are more than 100 BREQS outlets. Most of NSO's BREQS partners are the City/Municipal Civil Registry Offices. Others include the Professional Regulatory Commission (PRC), a non-government organization, travel agencies and selected NSO field offices.

Electronic Endorsement

There are civil registry documents which are not yet in the NSO archives nor enrolled in the computer database. In the past, such documents were sent by the local civil registry office concerned through mail. This was a tedious process; occasional misrouting of documents also added to service time.

Electronic endorsement expedites copy issuance to the public by enabling the local civil registry offices to send images and hard copies of these documents to the central archive through the ICT facilities of the NSO field offices. The copy is issued to the client after a standard validation process and then becomes available to all outlets as part of the database.

On-D-DOT System

The On-line Daily Document Tracking System (ODDS) or On-D-DOT System for short is an NSO-developed system for tracking manually processed requests for civil registry document, that is, those which have not been converted to digital formats and thus have not been included in the computerized database. This provides supervisors of various archives the facility to identify the archive where the civil registry document is being processed and the status of processing of requests.

RA9048 System

RA9048 System is a system for tracking the status of Republic Act 9048 (RA 9048) petitions filed by clients for correction of clerical error or change of first name in civil registry documents. These petitions are submitted to NSO by local civil registrars for review of the Civil Registrar General (CRG). Tracking of petitions is done from the time these are received by NSO for CRG decision up to the time the petition has been reviewed and sent back to the local civil registrar. This system has an SMS-based query facility that enables an NSO staff to track the status of a petition. An SMS reply is automatically sent back to the NSO staff indicating the status of the petition based on the database. Another feature of this system is the printing of annotation on civil registry documents, which was previously done manually. This feature contributed to the increase in productivity as the annotations are now done electronically.

SOIS

Solemnizing Officers Information System (SOIS) is a web-based system that manages the records or information of priests, pastors, imams, rabbis and other

persons whose authorities to solemnize marriage are registered with NSO. The system is used by NSO's central and field offices to evaluate, validate and approve new applications and renewal for Certificate of Registration of Authority to Solemnize Marriage (CRASM).

Internal Management Processes

ICT has enabled more effective and efficient communication within NSO. With the email technology, communication to and from various units in the organization has become easier. Aside from achieving faster response time, it also helped in lowering costs of mailing, long distance calls and fax communications. All provincial offices are connected with email technology so that official communications are forwarded to and from the central office in a faster manner.

Other internal systems such as the Human Resource Information System, Library, and Financial Reporting System are already in place. Other productivity-enhancing systems are in different stages of development. All of these are being developed in-house.

Harnessing Available Human Resources for ICT

The NSO has five departments in the central office, and field offices in each region, province and congressional district.

Information Resources Department (IRD) is the unit responsible for developing and maintaining computer systems in tandem with the subject-matter units. It has three divisions: Information Technology Systems Research Division (ITSRD), the Information Technology Operations Division (ITOD), and Databank and Information Services Division (DISD). It has a personnel complement of 143 staff: 30 in ITSRD, 50 in ITOD, 58 in DISD, and 3 in the Office of the Director. The IRD Director is a member of NSO Management Committee.

As a support staff, IRD collaborates closely with the other NSO units to determine priorities in systems development, data capture, hardware support, data dissemination, and related activities. Its work and financial plan therefore reflects the priority statistical, civil registration, and general administration activities. ITSRD organizes teams composed of systems analysts and programmers that work closely with the "client units" from planning to implementation of their activities. ITOD is responsible for hardware support services, and for data capture of major activities. For small applications, they train subject matter units to do their own data entry. DISD is responsible for data dissemination in various media; it also operates the frontline library services.

IRD formulates the NSO Information Service Strategic Plan (ISSP), a medium-term plan for ICT development which each government agency is required to submit to the National Computer Center. IRD vets requests by other NSO units for the acquisition of hardware and software for consistency with the ISSP. It also provides resource persons for training personnel of NSO and other statistical agencies in various aspects of ICT. Of late, IRD has also assisted in training NSO personnel of other countries in the Asia-Pacific region in data processing. The US Bureau of the Census has identified the NSO as a resource center for the software package CS Pro. Necessarily, IRD personnel have their own human resource development program as part of the NSO ISSP.

Challenges and Areas for Improvement

Overall, ICT has changed the way NSO does its business in the fields of statistics and civil registration as well as in its internal processes. It has likewise contributed to increasing the agency productivity and improving its services to clients. Adoption of current technologies available after careful evaluation of its benefits to the organization has proven to be advantageous to the office. Along with the advances in technology, issues on sustainability, security, obsolescence and other constraints surface.

The high cost of licensed software is one aspect that prevents their use and adoption in the agency. Using licensed software in the entire organization cannot be achieved because of the prohibitive cost and user limitations. Thus, NSO, most of the time, develops and designs its own software or application systems. All of the systems mentioned in this paper, except for the CRS-ITP, e-Census and Helpline Plus, are all designed by NSO. NSO invests in research and development activities of its employees. In addition, NSO is also engaged in evaluating open source systems for possible adoption. For example, Linux is used for network applications and Open Office is used for word processing and spreadsheets. As mentioned above, the NSO is a resource center for the data processing software package CS Pro.

Hardware acquisition is likewise a costly effort. The current computer to employee ratio is 1:2. The target ratio is 1:1. Censuses provide an opportunity to attain this, as capital outlay is an integral part of the census budget. The new policy of the Department of Budget and Management favoring the leasing of computers and other equipment over outright purchase is also an encouraging signal.

Another area for improvement is developing and populating the statistical databases. Resource constraints have prevented the pursuit of this objective. Efforts to secure assistance for this purpose have not been fruitful so far. Projected revenues from sales of statistical products are not yet enough to attract investors in a build-operate-transfer scheme similar to that of the CRS-ITP.

Change management to accompany systems improvements is a concern that needs attention, particularly in some statistical and general administration applications. For example, the number of trade documents submitted in electronic format has been steadily increasing. The processes that these documents undergo and the skills needed by manual processors involved in them need to be reviewed and retooled. The success met in the CRS-ITP provides a model that could be adopted.