



## Case Study

# Jamaica

## Jamaica: Two Views of Organizational Change

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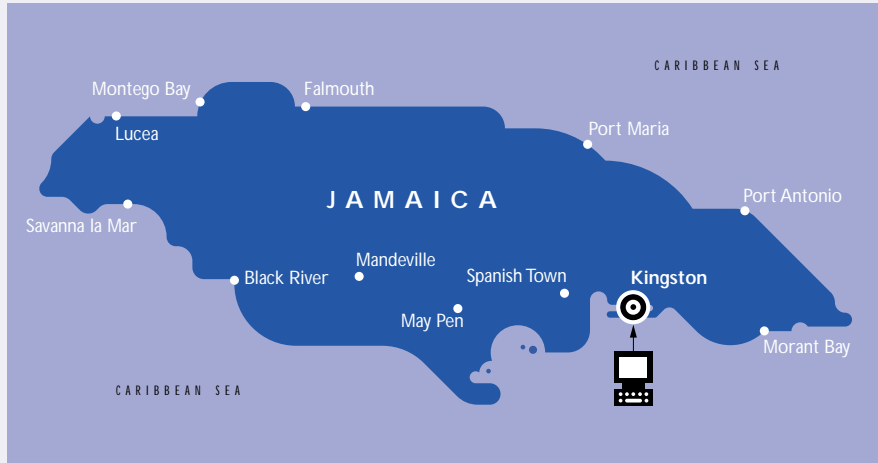
Over a four-year period, LearnLink<sup>1</sup> worked with two Jamaican institutions—the National Family Planning Board and the Ministry of Health—to help strengthen organizational, operational, and technical efficiencies through the application of information and communication technologies (ICTs). Together, the experiences yielded valuable insights into different yet related aspects of using ICTs for institutional strengthening purpose.

The first concerns organizational culture and communication patterns—that is, how co-workers relate, manage daily tasks, and handle information flows. In ICT parlance, this is sometimes called the “soft” component of a project, which some maintain is the most difficult challenge facing initiatives employing or applying ICTs. Others focus more on the hardware dimension of such activities, where selecting appropriate equipment and networking systems pose significant technical and infrastructural challenges of their own.

The two stories presented here illustrate lessons from both the “soft” and the “hard” components of ICT-based initiatives. As LearnLink’s experiences in Jamaica illustrate, both require specific knowledge of the “who, what, where, when, why, and how” of the organization’s or institution’s business.



Strengthening  
Organizations  
Jamaica



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## Computerization and Culture: The National Family Planning Board

The National Family Planning Board (NFPB) was created in 1970 as the principal agency of the Government of Jamaica to design, promote, and implement family planning and population awareness programs throughout the country. Its mission was to help achieve the development and demographic goals of Jamaica by

- ensuring the maintenance of a reduced population growth rate;
- promoting family planning;
- coordinating and implementing services that contribute to everyone's reproductive health;
- ensuring ready availability of contraceptives and information about family planning;
- providing training and support to other family planning organizations; and
- operating a nationwide family life education program.

One of NFPB's most important responsibilities was to supply a network of 350 government, private, and NGO family planning clinics with contraceptives and education and social marketing materials.

Professional staff worked in areas involving sophisticated data analysis, research, communication materials production, resource center management, inventory, and forecasting and distributing contraceptive products to public, private, and NGO family planning clinics nationwide. Other crucial systems included internal accounting, personnel management, and communication flows between the headquarters and regional and parochial offices.

NFPB's headquarters is in Kingston, with four regional offices, nine parochial offices, three family planning clinics in 12 remote locations, and a total staff of 88 throughout Jamaica. Yet the entire NFPB had only six non-networked computers for its critical tasks: one for statistics data entry, two for accounting, two for all word processing work, and one for a contraceptives warehouse.

In short, the NFPB's need for data management and communication networking far outweighed its capacity.

## Meeting Information and Communication Needs

USAID/Jamaica asked the Academy for Educational Development's (AED) LearnLink project to help the NFPB establish a computer and communications network throughout the organization. The overall goal of the activity was to help the NFPB increase its capacity to carry out its work and positively impact Jamaican society with family planning activities. More specifically, the project intended to improve administrative efficiency, management capacity, internal communication, and professional development opportunities for staff.

Over a period of a year, LearnLink implemented the computerization intervention, providing technical assistance in three stages to achieve the following:

1. assessing the NFPB's hardware and software requirements;
2. procuring and installing computer hardware, software, and peripherals in the NFPB's headquarters and regional and parochial offices; and
3. training NFPB staff in the use of computers, Internet resources, and the reorganization of tasks and workflow resulting from the use of technology.

## Assessment

At the outset of the activity, LearnLink staff traveled to Jamaica to conduct a thorough assessment, which included interviewing NFPB and USAID/Jamaica staff, reviewing the NFPB's organizational structure and workflow patterns, and determining the organization's amenability to computerization. The assessment concluded that the organization was heavily information dependent and could greatly benefit from computerization. While none of the NFPB staff had sufficient technical skills to manage a network, many staff members already had some computer experience, and the staff was generally positive about adapting to a computer network.

LearnLink found the physical environment of the Kingston headquarters offices to be capable of supporting a network, and while technical and financial issues constrained the inclusion of all field staff, limited integration was feasible. Lastly and importantly, local staff could decide—at least provisionally—most issues relating to the design and implementation of the computer network without a sophisticated knowledge of the technologies.

The first step involved designing a local area network (LAN) for the NFPB's main office in

Kingston, with remote dial-up connections for the contraceptives warehouse and each of the four regional offices. LearnLink and NFPB staff chose an independent Internet service provider (ISP) based on the dependability of its satellite services and its ability to provide inexpensive Internet access to the field offices. The design also included upgrading the headquarters' telephone system by installing a dedicated phone line for email and Internet access.

### Organizational Culture and Communication

One of the greatest challenges to the success of the computerization initiative was the transition from the status quo to a whole new way of thinking and operating. Initially, some staff members found that the new systems made the jobs more complicated and returned to doing simple tasks the old way rather than taking the time to learn the software. Most, however, had the patience to familiarize themselves with the new systems and eventually reached a level of comfort that made them wonder how they had ever lived without computers.

*...people have a lot of fear of computers. You are not just changing the structure of their work; you are changing their lives. Staff members would tell me that they were afraid of...[being] replaced by a machine.<sup>2</sup>*

Experience shows that it is relatively easy to physically link computers together to form a simple office network and train staff to use the technology. However, it can be extremely difficult to realize the full collaboration and communication benefits of a computer network. Office computer networks must function within a particular organizational and cultural context, which, if structured hierarchically, may work against democratic communication and the free flow of information. Moreover, while the system may resist the more open sharing of information that computerization facilitates, some individuals also may feel ambivalent, perhaps fearing that the computers may render their skills redundant or put their jobs at risk.

Such was the case at NFPB.

It is important to note that computer applications are only tools or means for achieving more important ends. The technologies alone cannot achieve desired outcomes. To provide durable and fundamental benefits, the new technologies must be coupled with changes in the values, attitudes, behaviors, skills, and knowledge that comprise organizational structure and culture.

### Patterns, methods, and behavior

Imperative in the adoption of computer systems is an examination of workflow patterns and traditional methodologies for getting things done. During the networking process, NFPB staff were asked to analyze virtually everything they did to see how computers would be able to streamline—or even eliminate—certain processes. Staff also examined their typical work behaviors and tried to find ways to adapt them to the new technologies. As a result of the exercise, LearnLink discovered that people tend to retain certain behaviors because they are tried, tested, and comfortable. Then, as computers are introduced into a non-computerized environment, users will simply overlay old behavior patterns onto the new machines. Until people adopt new patterns that incorporate computers into the paradigm, however, the benefits of computerization cannot be fully realized.

### Communication Democracy

One of the most important benefits of an office computer network is its ability to provide staff with new and easy ways of communicating and collaborating with each other. Email can create a democratic communication system wherein everyone on the network is equally accessible to others in an office. A network also can enable users to increase their frequency of communication. Over time, experience shows that the quality of communication, both electronic and face-to-face, improves with the introduction of email.

To facilitate the staff's adoption of organizational changes, LearnLink formalized them into "lessons" whenever possible. This proved to be a challenge because the technology was new and the organizational climate of using a network was initially beyond a majority of the staff's frame of reference. Saving files on shared drives, for example, or using email to facilitate communication and coordinate appointments were entirely unknown procedures.

Consequently, LearnLink instructors integrated organizational issues into the application training sessions. For example, instructors placed a great deal of emphasis on class demonstrations, where exercises were saved on the common drive, and participants were required to navigate the drive for each lesson. So that students were required to familiarize themselves with electronic means of acquiring



information, instructors distributed class schedules and communications by email. Throughout the training period, all individuals were equally responsible for centralized equipment — for example, everyone was required to load the paper bins on the printers when necessary, regardless of who used the paper. All users across the organization as a whole shared resources and accountability for these types of tasks, which were not attached to a particular department or individual.

### Training

Several weeks before the training, LearnLink staff distributed a pre-registration survey to NFPB staff. According to the responses, a majority of the staff had little or no experience with computers. Therefore, the LearnLink team and instructors designed the training plan to provide all students with basic, comprehensive skills in several software applications, including Microsoft Office (Word, Excel, Outlook, PowerPoint, and Access), Windows, and Netscape Navigator. The team also planned to offer brief introductory courses for SPSS, MS Project, PageMaker, and PhotoShop.

Based on the computer experience and knowledge that staff described in their pre-registration surveys, different levels of training sessions were required. NFPB staff were divided into 10 groups of four to six students, and each staff member received two hours of training per day. Of special note was the participants' enthusiastic attitude. While many were somewhat anxious about their lack of knowledge and expressed some initial fears, they were willing and eager to attend the classes despite their concerns and busy schedules.

### Sustainability and Ownership

All computer networks require maintenance. One of LearnLink's challenges was to design a network system that would not burden the NFPB with unanticipated costs. Therefore, LearnLink chose every piece of equipment with the intention of ensuring the network system's long-term viability. At the same time, cost constraints are a reality, so every effort was made to achieve a balance between the pressure to buy affordable equipment while maintaining high quality standards.

Tied into the concept of financial sustainability is the importance of ownership. When individuals share equal responsibility for a system, in this case a computer network system, they share accountability and ownership. Thus, they ensure its continued evolution and sustainability.

Though LearnLink made every effort to anticipate the actions needed to ensure NFPB ownership for the new system, some issues were not stressed strongly enough. Initially, for example, the organization did not understand how critical it was that the person filling the network administrator position be experienced enough to deal with the daily networking issues that arise. Giving the network administrator full responsibility for the network, as well as access to the resources required to support it, is essential for sustaining the system.

Of greater concern is keeping the staff motivated to continue using their computer skills and equipment. One approach might be for the organization to assign a particular staff member to manage changes as the NFPB continues to computerize its tasks. Another is to slightly modify several of the job descriptions to include the necessary computer skills required in a particular position. These types of actions help ensure that the



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Glenn Strachan,  
AED Vice President of Information Technologies, 2000

computer skills are not lost if an employee leaves the organization. The new employee would have the requisite skills or be expected to learn them.

In addition, the support and enthusiasm of NFPB senior staff was crucial to the success of this initiative. The Director of NFPB was behind the networking initiative since its inception. Not only was she involved in all phases of NFPB's development, but her staff agreed that she was the “glue that keeps everything together.” Similarly, NFPB's Medical Director was a strong and effective administrator who understood the need for family planning in Jamaica. Particularly interested in the potential of SPSS software for research, she used it extensively for sociological data analysis.

#### From the Individual to the Group

The NFPB staff's lack of experience with computerization as a group initially made it difficult for them to understand the consequences of using computers for the NFPB as a whole. Discussions about networking, sharing files and directories, and maintaining organization-wide appointments were distant to their frame of reference and overshadowed by their ambition to learn the computer skills at the individual level.

However, evidence indicates that the environment changed in incremental steps. Over time, individuals raised questions about issues that affected the entire group. For example, having the printer as a central unit for the entire organization prompted discussions about several points needing attention. Should paper become a central resource, or should senior managers devise another method of submitting paper from each department budget? Who is responsible for filling the printer's paper tray? How should NFPB manage paper waste — by individuals, departments,

and the organization as a whole? By addressing these questions, plus other practical and organizational issues, staff helped streamline the operations of the entire organization.

#### Results

Short-term results of this computerization initiative were promising. The new system showed definite signs of improving the flow of information for the organization and helping the staff perform their individual tasks and implement the organization's family planning programs. Employees were able to explore resources on family planning and reproductive health on the Internet, and they could communicate with other professionals in the field quickly and inexpensively via email. Staff also were able to disseminate information to each other and the public through professional reports, presentations, and publications. As far as internal operations were concerned, administrative and financial staff were able to manage resources more efficiently using various software applications.

These changes have had a positive impact at both the individual and organizational levels. Computerizing some repetitive tasks left staff more time to pursue other activities such as research, project development, and program evaluation. As an organization, the NFPB began augmenting the breadth and quality of its projects and managing them productively through the use of the new network.

#### From the NFPB to the JMOH

While helping the National Family Planning Board establish a computer and communications network linking its four regional offices, LearnLink discovered deficiencies in the national health reporting system. To remedy the situation, LearnLink also assisted several

internal departments within the Jamaican Ministry of Health (JMOH) to organize and improve the already partially computerized Patient Information system (PAS) within a larger, integrated Health Management Information System (HMIS).

## ICTs and Health Care: The Jamaican Ministry of Health

### Health Reforms

Health care indices in Jamaica mirror those in larger, more developed countries. Although its economy is less developed, Jamaica has high literacy levels for a developing country and a structurally-sound health care system, founded on a British model and a manually-based process of health data collection. Many of its 2.5 million people believe that health care is very important, and they often hotly debate primary health care issues. During the late 1990s, pressure groups pushed for health sector reforms, and the health system changed. Now, the system is based on the tradition that health care is a public good and should be available free-of-charge to children, the elderly, and the poor. In fact, Jamaica created the National Insurance System to underwrite many health costs.

Although some people choose registered physicians with private practices and doctors at any of the 10 private hospitals, just under half of the population used public facilities, and the numbers were increasing. Within these MOH public facilities, a three tiered system operates consisting of two tertiary hospitals in Kingston (“A tier”), five secondary care hospitals (“B tier”), and ten, mostly rural, community health centers (“C tier”)—the most poorly equipped and least used. “A tier” hospitals are the best equipped, followed by “B tier” hospitals. In addition, the MOH is responsible for six specialized hospitals.

In 1999, the MOH began implementing an audit system for determining quality of care. As part of that process, the country integrated information technology into reporting systems in a few major hospitals. By 2000, however, only segments of the health information system (HIS) had been adapted for computer data entry into a variety of databases. The health Patient Information System (PAS) linking hospital data was incompatible with detailed

tabulations across all hospitals and very slow to yield useful national data for researchers, medical personnel, and health policy makers.

Recognizing the problem, the MOH recommended that “decisions be made to standardize and place central control and authority over the health information system while making quality data available in a timely fashion for those in need of it.”

### LearnLink's Role in Assessment

LearnLink first undertook an assessment of the information flow from the local level to aggregation at an intermediate level until final totals were obtained at the national level. In the assessment of each of the 12 systems, the investigator examined the methods of data collection, data flow, data collation and aggregation points, data entry and analysis, report generation, and use of the data.

Examining the strengths, weaknesses, and priorities, evaluators considered all 12 key health data systems pertaining to sentinel surveillance, environmental health, immunizations, primary and secondary care service delivery, work load, quality of care, coverage, and leading causes of admission and discharge at Jamaican public hospitals.

The more prominent deficiencies included a shortage of medical records staff, lack of appropriately trained medical records staff, extremely long lag time between data collection and report generation, and erroneous and missing data in monthly clinical summary reports. In addition, the assessment noted deficiencies in data quality, lack of common definitions, recurrent problems with the PAS, and even questions of data reliability. In particular, secondary care physicians lacked statistical skills and the ability to read and interpret data, while Regional Technical Directors needed training in decision making, managing their databases, and generating reports.

The assessment also revealed a lack of data on outpatient morbidity. Moreover, data records staff were unfamiliar with the International Classification of Disease (ICD) 10 coding scheme for recording mortality data. Staff morale was low and aggravated by the need to work overtime to restore or re-enter data.

### A New Computer System

On the basis of the recommendations emanating from the assessment of the operating system,

AED/LearnLink and key departments within the Ministry of Health—Planning and Evaluation, Health Information, Epidemiology, and Systems and Information Technology—proceeded to shift priorities. They initiated a system-wide standard at major hospitals in “A and B tiers” and developed policy and procedural manuals that standardized definitions and practices for primary and secondary care databases.

After developing materials, instructors conducted face-to-face and computerized training for MOH staff as well as health medical records and technical data management staff across the island. Staff not only learned about the new HMIS procedures, but also, to manage that new information, and learned how to use Microsoft Access and Crystal Report Writer.

In addition, changes in the data flow necessitated a shift in the computer operating system from UNIX to LINUX at five major hospitals. This shift was essential for enabling queries within the large, multi-hospital medical database and creating a consistent infrastructure. Like interlocking pieces in a puzzle, each change was linked to other changes, such as the need to train medical records personnel within the Ministry, as well as hospital and regional data collection staff.

By facilitating the collection and flow of data and generating multiple options for aggregation of data, the new HMIS contributed to the timely collection of more useful data for researchers, medical practitioners, and medical accounting staff. After undergoing training, health data analysts could produce timely quarterly reports based on about 70-75% of the total patient population, a capacity that could reduce the 18-month time gap between patient data input and report output.

Eventually, planners expect that all medical institutions—even small clinics that serve about 25% of the total national patient population—should be following the standard reporting practices that the MOH initiated through this AED/LearnLink project.

#### **“Above and beyond the call of duty”**

Though this activity was technically complicated, the eagerness of the Jamaican health staff to learn new data management methods made it significantly easier. Now they have the capacity to perpetuate a uniform HMIS system at any level—thus providing a functional

tool that is useful at the national, regional, and eventually local community level.

In addition, by training medical records staff and establishing quality control procedures, the project produced a model training curriculum for the MOH and improved data quality and report accuracy.

USAID/Jamaica recognized the success of this effort by awarding the AED/LearnLink project director for his “perseverance, flexibility, and creativity for going above and beyond the call of duty” and “for scaling walls” to strengthen the MOH's health information.

## Footnotes

<sup>1</sup> The Jamaica activities are part of a seven-year Indefinite Quantities Contract (No. HNE-I-00-96-00018-00) of the US Agency for International Development (USAID). It was funded by the USAID Bureau of Economic Growth, Agriculture, and Trade (EGAT) and Office of Energy and Information Technology (EIT), and other USAID Bureaus, offices, and missions. It was operated by the Academy for Educational Development.

<sup>2</sup> Glenn Strachan, AED Vice President of Information Technologies, 2000.



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