



REPORT

ON

**PERFORMANCE STUDY OF
IT INVESTMENTS WITHIN CENTRAL
GOVERNMENT AGENCIES ON MONTSERRAT**

FOR THE PERIOD JANUARY 2004 – DECEMBER 2006

Prepared by

**OFFICE OF THE AUDITOR GENERAL
BRADES, MONTSERRAT
MARCH 2008**

**PERFORMANCE STUDY
OF
IT INVESTMENTS WITHIN CENTRAL GOVERNMENT
AGENCIES ON MONTSERRAT**

This is the report of a performance study we conducted under section 8(f) of the Audit Act 2001.

March 2008

FOREWORD

How well our IT systems are managed, and how well these systems are maintained, affect many of us every day at work.

The Office of the Auditor General (OAG) recently decided that the introduction of performance audits into our annual work programme was imperative. One of the key areas I decided to conduct an audit on was IT investments simply because of the large sum of monies that is being spent year after year to improve service delivery of the entire Public Sector on Montserrat.

I am pleased to note that IT enhancement in the Montserrat Public Service has resulted in some improvements hence less paperwork. People are generally appreciative of utilizing IT to make their work more efficient and effective. However, set guidelines for procuring such systems must be implemented to minimize adhoc decisions. The full utilization of systems/software will enable departments to achieve greater value for money.

Two main recommendations were for the development and implementation of a general IT policy and the consolidation of printing services throughout the service.

This performance study involved many staff at the GISU and other government departments. I thank them all for their co-operation.

Florence A Lee
Auditor General
28 March 2008

TABLE OF CONTENTS

FOREWORD	ii
EXECUTIVE SUMMARY	vi
CHAPTER 1	1
1.0 INTRODUCTION	1
1.1 Why we undertook this study?	1
1.2 Objectives of this study	1
1.3 Scope of this study	2
1.4 How this study was conducted	2
1.5 Overview of IT within Central Government	3
1.6 What we did not do	4
CHAPTER 2	5
2.0. KEY FINDINGS, RECOMMENDATIONS & MANAGEMENT RESPONSES	5
2.1 GISU's Operations	5
2.1.1 Our Survey - Customer Satisfaction	9
2.1.2 Our Recommendations	10
2.1.3 Management Response	11
2.2 General Comment	12
2.2.1 Our Recommendations	13
2.2.2 Management Response	13
2.3 Treasury	14
2.3.1 Our Recommendations	14
2.3.2 Management Response	14
2.4 Physical Planning Unit (PPU)	15
2.4.1 Our Recommendations	16
2.4.2 Management Response	16
2.5 Supreme/Magistrate Courts	16
2.5.1 Our Recommendations	17
2.5.2. Management Response	18
2.6 Registry	18
2.6.1 Our Recommendations	18
2.6.2 Management Response	19
2.7 Police - OTRCIS	19
2.7.1 Our Recommendations	21
2.7.2 Management Response	21
2.8 Glendon Hospital	22

2.8.1	Our Recommendations	23
2.8.2	Management Response.....	24
2.9	Statistics Department	25
2.9.1	Our Recommendations	27
2.9.2	Management Response.....	28
CHAPTER 3	29
3.0.	CONCLUSION.....	29

ABBREVIATIONS

ASYCUDA	Automated System for Customs Data
CEBOPS	Computerised Enhanced Balance of Payments Systems
CSPRO	Census & Survey Processing System
CTOMIST	Caribbean Tourism Organisation Management Information Systems
DEV INFO	Development Information
DFID	Department for International Development
ECCB	Eastern Caribbean Central Bank
GIS	Geographic Information Systems
GISU	Government Information Systems Unit
GOM	Government of Montserrat
IMPS	Integrated Microcomputer Processing System
IT	Information Technology
ITC	Information Technology and Communication
JEMS	Judicial Enforcement Management System
LIS	Land Information Systems
MOH	Ministry of Health
OAG	Office of the Auditor General
OECS	Organisation of the Eastern Caribbean States
OTRCIS	Overseas Territories Regional Criminal Intelligence System
PC	Personal Computer
SPSS	Statistical Software for Social Sciences
UN	United Nations
UNICEF	United Nations International Children Education Fund
VFM	Value for Money

EXECUTIVE SUMMARY

IT investments are under a lot of scrutiny worldwide. There is increasing pressure on management to attain value for money (VFM) from investing in IT simply because of the astronomical amounts being spent. The OAG has decided to review the government's investment in IT.

This study covered the period January 2004 to December 2006 and seeks to assess and report on the effectiveness and efficiency of IT investments within central government (Ministries and Departments). The intention is to confirm the existence of related policies and to determine the extent to which GISU, the main IT arm of government, assist other departments in procuring and maintaining their investments.

Many departments and/or ministries have embarked on implementing systems with assistance from funding agencies and the Government of Montserrat (GoM). Some systems were implemented prior to the years that were established (2004 - 2006) for this audit. However, we thought it necessary to include them as part of this audit to review their efficiency and effectiveness.

Our findings

GISU is responsible for the procurement and maintenance of all IT equipment. However, we found that not all departments with IT systems have sought assistance from GISU. Funding or donor agencies have donated systems to specialized departments and are also providing support services at no cost in some instances. The systems are worthwhile simply because of the outputs generated by them and the benefits gained from their usage and information.

Secondly, there are far too many printers that are not being utilized to their full aptitude. Thirdly, there are no set procedures or guidelines for deciding upon an investment thus procurement is done on an adhoc basis. Of the eleven (11) IT systems we found that only four (4) of them are being utilized 75% or more and one system was abandoned.

Finally, we requested responses to the issues raised, have sent several reminders and to date we have not received any responses from Supreme/Magistrate Courts and the Registry.

Our recommendations

Listed below are the major recommendations however other recommendations are included in the body of this report. We recommend:

- that an IT Steering Committee be established to further centralize government's goals through the effective use of coordinated information technologies.
- the development and implementation of a general IT policy. This policy should include, but is not limited to, IT procurement and usage issues.
- that GISU send an official notification to all ministries or departments informing them of the need for notifying it prior to any purchase or receipt of donations of IT assets.
- further training of IT staff as well as system users to enable maximum usage of systems.

- that key vacancies in GISU be filled in order for the department to function effectively and support an expanding mandate to undertake e-government initiatives.
- that the Registry Department, with assistance from relevant person(s), seeks to complete the computerization of civil records.

CHAPTER 1

1.0 INTRODUCTION

In this Part, we set out:

- why we undertook this study;
- the objectives of our study;
- scope of this study;
- how this study was conducted and
- an overview of IT within central government.

1.1 Why we undertook this study?

In 2005, the Office of the Auditor General (OAG) decided to expand its audit services. Instead of focusing on financial audits we decided to include other audits such as IT audits, value for money/performance audits, health and safety audits and forensic auditing as part of our Annual Audit Programme. It was also decided to examine IT investments because of the large amount of money that is being spent to improve the systems and service delivery within the Montserrat Public Service. This is an area that the OAG had not examined previously.

1.2 Objectives of this study

The purpose of this study was to assess and report on the effectiveness and efficiency of IT investments within central government agencies. The aim was:

1. to confirm the existence of IT policies and or strategies and also to examine the process which initially led to the investment,
2. to assess the effectiveness of procedures for verifying that investments were worthwhile,

3. to assess compliance with Government of Montserrat (GoM) Finance Regulations 2002, Stores Regulations 2002 and other applicable laws,
4. to determine the extent to which IT investments were made without assistance of GISU.
5. to examine the result or contribution from IT investments,
6. to express opinion on the economy, efficiency and effectiveness of IT investments.

1.3 Scope of this study

The audit covered operations during the period January 2004 to December 2006 and was conducted by Miss Marsha V E Meade, Deputy Auditor General, from 19 February to 31 December 2007. This exercise focused on the review of IT investments within central government - GISU being the main IT department and other departments that utilized IT systems/databases namely Physical Planning Unit, Supreme Court, Registry, Glendon Hospital, Police Headquarters and Statistics. Some areas were amended to maximize the efficiency of the audit.

1.4 How this study was conducted

We conducted fieldwork which included interviews and discussions with staff at the departments mentioned above. The documentation that we examined included various files and manuals. Additionally, we reviewed applicable Estimates of Revenue and Expenditure for years 2004-2006 and reviews of Smartstream Financials. IT user satisfaction questionnaires were sent to several ministries/departments.

1.5 Overview of IT within Central Government

It is useful at this juncture to describe briefly the IT infrastructure within the Public Service. The GISU is ultimately responsible for the procurement, smooth functioning and maintenance of IT systems in all government offices. The GISU houses most of the servers but two servers are located off the government headquarters compound. Some departments have purchased their own IT systems or have received sponsored IT databases/systems. The table below shows the various systems and their server locations.

Table 1

IT SYSTEMS REVIEWED

Department	Name of System	Server Location	Year Utilized	Recommended action (Upgrade/ Migration/Impl.)
Treasury	Smartstream	GISU	2001	Upgrade
Physical Planning Unit	Geographical Information Systems (GIS)	PPU	2001	Upgrade
Supreme Court	Judicial Enforcement Management System (JEMS)	GISU	2002	Upgrade
Registry	Computerization of Civil Records - Births, Marriages & Deaths	GISU	No	Implementation
Statistics	CTOMIST SPSS CEBOPS EUROTRACE IMPS	GISU		Upgrade Upgrade Upgrade Upgrade Upgrade
Glendon Hospital	Patient Administration System (PAS)	Glendon Hospital	2004	Upgrade
Police	OTRCIS	Police Hdqrts	1995	Upgrade

Smartstream is currently the biggest system being utilized because government departments use this for government expenditure and revenue and for payroll purposes. The new passport issuance system will be installed later this year and this is budgeted to cost over EC\$1million.

1.6 What we did not do

We did not examine two departments that are utilizing IT systems - Customs and Inland Revenue. Inland Revenue procured a property tax system which is not functioning effectively. We reviewed this system in 2003 and results are in the 2003 Report of the Auditor General. The Customs Department has been using ASYCUDA since 1989, this system has been working well and there are plans to upgrade to the latest version in 2008. The budget for this is currently being worked on but this will mostly be funded by the European Union.

CHAPTER 2

2.0. KEY FINDINGS, RECOMMENDATIONS & MANAGEMENT RESPONSES

This chapter will outline:

- the various departments that have implemented IT systems/databases;
- key findings;
- whether or not the systems are providing value for monies spent; and
- recommendations and subsequent responses by various management.

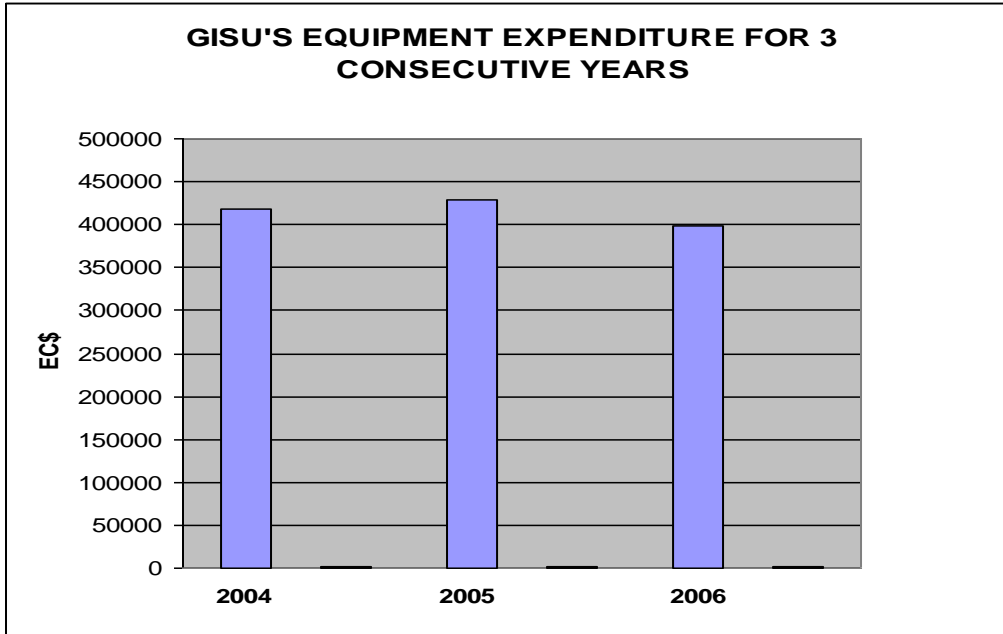
2.1 *GISU'S OPERATIONS*

The GISU plays a critical role in providing IT service to the public sector and have been instrumental in ensuring that everyone has the necessary IT capabilities to function effectively. We have reviewed IT expenditure incurred by GISU. This was done in order to ensure that expenditure was not over spent and used for any purpose other than was intended by the Legislative Authority. Comparisons between actual and estimated expenditure was also done. For this part of the study we limited our review to addressing four (4) key subheads namely: purchase of equipment, maintenance services, fees and rewards and training. Maintenance services vote was selected because of the large sums of money allocated to the department for this service. Table 2 below lists expenditure for period being reviewed.

Table 2
GISU'S IT RELATED EXPENDITURE 2004-2006

DESCRIPTION	BUDGETED	ACTUAL	VARIANCE	%AGE UTILIZED
2004	\$	\$	\$	
Purchase of Equipment	420,000.00	418,211.59	1,788.41	99.57
Maintenance of Services	500,000.00	496,056.61	3,943.39	99.21
Fees & Rewards	10,000.00	9,999.30	0.70	99.99
2005				
Purchase of Equipment	430,000.00	429,252.79	747.21	99.83
Maintenance of Services	606,600.00	600,874.70	5,725.30	99.06
Fees & Rewards	12,000.00	11,306.16	693.84	94.22
2006				
Purchase of Equipment	400,000.00	399,261.94	738.06	99.82
Maintenance of Services	700,000.00	699,881.83	118.17	99.98
Fees & Rewards	12,000.00	6,908.79	5,091.21	57.57
Training	50,000.00	9,182.35	40,817.65	18.36

Expenditures were incurred within authorized parameters as legislated in the Estimates of Revenues and Expenditures for the years under review. No revenue was generated within the department. The staff of the GISU requires ongoing training to keep abreast of the ever changing IT environment. It is important to note that not even a quarter of the allocated funds were spent for training in 2006.



The graph above shows the amount of money that was spent by GISU on Equipment and this reflected the significant amount of money being spent on IT related assets. Over the three years approximately 99% of the allocated monies for purchase of equipment were spent.

However, there are a number of things that are non-existent at GISU:

- There is no standard IT policy or strategy or even a published IT procurement policy in place and, as a result, procurement is often done on an ad-hoc basis. The Director mentioned that a draft ITC strategy is being worked on but it is still in its first phase. There is a general government procurement policy - Procurement and Stores Regulations 2002, in place that ensures that objectives are achieved but is not considered to be sufficient for purchasing IT assets.

There are risks associated with inadequate controls over the procurement of IT assets: wrong equipment acquired, business needs not satisfied, budgetary control undermined, legal responsibilities and implementation delays.¹ Basically, no regulations, standards or policies exist to govern the operations of GISU with the exception of international standards. The operations are driven by departmental requests.

- There is no IT committee in existence to provide insights on IT priorities and strategies.
- Currently there are four (4) vacant positions within the GISU. These are:

Systems Analyst who will be entrusted with the logical and physical GOM network; a very significant capital asset.

Programmer is required to assist with the development of small-scale applications and also to be the person responsible for the general understanding of larger applications developed by outside vendors.

Web Developer to produce and maintain information on the government's website and it is envisioned that this post holder would also provide portals for online revenue collection.

Helpdesk Officer which is a hybrid of a technician and that of an IT trainer.

We found that many of the problems currently being encountered such as the non-existence of policies is a direct result of not having the above mentioned posts

¹ CIPFA, (2002), Computer Audit Guidelines, 6th Edition, London: CIPFA

filled. The Director is performing multiple roles which include operational duties that prevent him from performing some strategic duties.

An effective electronic helpdesk system was recently implemented to deal with calls requesting IT assistance. This has been working well so far.

2.1.1 Our Survey - Customer Satisfaction

We asked a small selection of departments/ministries about the type and quality of GISU's services. Our purpose was to identify common views, to reveal issues we needed to examine as part of our performance study and to provide advice in the areas that they should improve upon.

Fifteen (15) completed questionnaires were received. They were generally positive about the helpfulness of GISU's staff. The responses revealed no new issues for our audit. The responses however, revealed that they needed to improve their response rate, be more organized and technicians need to be more customer service oriented. Additionally, some respondents have requested assistance with the purchasing of equipment and software specification.

The most positive aspects about the network/computer system were consistency of system up and running, speed and convenience of communicating, and its reliability. On the other hand, the most negative facets mentioned by most respondents were loss of work when electricity suddenly goes and that response to requests for new equipment was unsatisfactory.

2.1.2 Our Recommendations

We recommend the following:

1. GISU ensures that staff receives the requisite training as this will further enhance their capabilities and service delivery.
2. An IT policy be implemented which include a section on procurement. Procurement of IT must comply with GISU's overall procurement process and there are specific elements which must be addressed. The ISO 17799 IT security policy can be used as a guide for the proposed policy. Standards should be in place so that the acquisition of IT tools can be easily integrated with the existing infrastructure and fit with future strategy.

Additionally, calling on auditors to provide advice on controls can help GISU to develop a sound, detailed and comprehensive policy, incorporating procurement, access controls, legislations and objectives.

3. A steering committee be set up around the information management function that permeates the entire central government rather than focusing on steering a single department. This grouping should comprise of persons with relevant IT knowledge such as systems development and aligning business with IT. The fundamental aim of the Committee should be to further centralize government's goals through the effective use of coordinated information technologies.
4. GISU should conduct formal IT user satisfaction reviews. There are many reasons as to why this should be done including: gaining feedback on the

- service delivery, improving quality of service and demonstrating commitment by listening to customers.
5. An official notification be sent to all ministries/departments informing all that GISU should be notified of all procurement or donation of IT assets - hardware, software or peripherals.
 6. Key vacancies be filled in order for the GISU to function effectively and support expanding mandate to undertake e-government initiatives.
 7. Technicians attend a customer service orientation workshop to improve their skills to better relate to their public service colleagues.

2.1.3 Management Response

The GISU's management agrees that there is a need to formulate and publish an IT procurement policy that governs the acquisition of IT hardware and software by and for all government departments.

GISU management is also of the view that there should be an IT Steering Committee to advise on the IT Strategy for the Government of Montserrat.

The report accurately points out that there are a number of vacancies in the GISU, which results in a number of shortfalls in the level of service we can provide to our customers. We have submitted a business case to address these vacancies and also seek to add more posts to better carry out the department's mandate. We await further directives from the Ministry of Finance and the Office of the Chief Secretary on the way forward.

2.2 GENERAL COMMENT

There are a number of Ministries with a purchase of equipment vote. These ministries include Health & Education, Communication & Works, and Agriculture. During the period under review that is 2004 - 2006 Health & Education spent over EC\$60,000 on computers, computers accessories, scanners and printers. Communications and Works and Agriculture each spent over \$10,000 on IT systems. Some equipment was procured without input from GISU. This has financial and skills implication for maintenance of such equipment.

As of 2007 the Montserrat Public Service had approximately 690 employees. The information and communication technology resource allocation table provided by GISU showed that 432 personal computers (PC) were in service. The ratio of PC to employee minus those employees who do not require a computer (173 employees) is estimated at 1 to 1.2. This means that for every PC there are 1.2 persons using it. Additionally, there were 32 laptops, 121 printers, 47 scanners, 25 photocopiers, 19 multifunctional and 19 doc centers.

Based on the current nominal role and the information above it is clear that there are too many printers. Calculations indicate a 1 to 3.3 ratio of printer to staff. Every employee seems to have a printer close by from our observation and this does not constitute efficient resource allocation. The physical existence of a printer encourages employees to print and in many cases printing is not required when information can be stored, retrieved and viewed at any time and when required.

We found that there are a number of high capacity printers that are not used to their full aptitude - all of this increases supplies and maintenance cost. The

evidence also points to the fact that the public service has not fully adapt to the cultural shift in operating in a paperless environment.

2.2.1 Our Recommendations

We recommend the following:

1. That all departments should notify GISU of their intention prior to the purchase of IT equipment in particular computer and related accessories.
2. The ratio of printers to staff suggests the need for a review of printer usage in the government service. GISU should seek to consolidate printing throughout the service as this would lessen the monetary resources needed to maintain the printers and/or replace obsolete equipment.
3. Whenever a department makes a request to GISU for new hardware for example a personal computer GISU needs to first undertake prerequisite analysis to determine whether or not the request is practical.

2.2.2 Management Response

The GISU management will take on board the recommendations of the Office of the Auditor General.

Please note that the GISU is currently planning an 'IT User Summit' to discuss all IT related matters with senior management of all government departments. We will take the opportunity to appraise management of the significant amount of funds that has been spent on the procurement of IT Hardware and Software over the past few years, and ask the question; "Are we working smarter and more

efficiently and are we serving our clients and the citizens of Montserrat any better“?

This study by the Office of the Auditor General has indeed been timely and important and we look forward to continued oversight and assistance as we seek to remedy the shortcomings and enhance the positive aspects surrounding the use of IT investments within all government departments.

2.3 TREASURY DEPARTMENT

Smartstream Financials was implemented in 2001 to improve business processes, handle work and information more efficiently, and help the public service to become more productive. This IT system has been operating effectively and efficiently, paper based documentation has reduced considerably and 75% of Smartstream is being utilized. However, one significant drawback is that report generation is limited and some features such as reconciliation is not being used. GISU is generally responsible for the upkeep of this system and they pay an external agency an annual support fee of US\$60,000 per annum. Overall, this system is providing value for money.

2.3.1 Our Recommendations

The necessary training needs to be conducted to enable public servants to use the smartstream system to its full capability.

2.3.2 Management Response

Smartstream Financials in general has been supporting our needs where efficient data storage and retrieval is concerned. However for the GoM to continue to benefit from what I consider a robust system (which has adequate vendor support),

there has to be continuous training service wide and for technicians in the GISU who provide local support. GoM reporting issues can be addressed when a programmer is hired and reporting needs and formats are clearly expressed by those persons who require the information.

2.4 PHYSICAL PLANNING UNIT (PPU)

Geographic Information Systems (GIS)/Land Information System (LIS) is one of four functional areas within the PPU. It is a computer based land information system and database that is used by the unit for resource management, asset management, environmental impact, land surveying, urban planning and route planning since its inception in 2002. This project was introduced by the UN in collaboration with DFID. Overall implementation cost is unknown but maintenance is calculated at an annual cost of US\$6,000. The GISU provides support services.

Montserrat GIS/LIS project has provided data and services to individuals, various public and private organizations e.g. Public Works Department, Montserrat Water Authority, Monlec, Cable & Wireless, Clerk of Council, Disaster Management Coordination Agency, Montserrat Tourist Board, Agriculture Department, real estate developers and agents. Montserrat's GIS has become an important tool and main source of data for most of the projects on island.

Year 2006 witnessed numerous applications of Montserrat GIS/LIS into projects of vital importance in the rebuilding of the island and sustainable development. These include redefinition and demarcation of farm lands owned by the government and assistance to the utility companies in establishing GIS based facilities management and customer services.

The department sometimes charge for their products and services. Work is in progress to have fees regularized and authorized by Executive Council. This is due to the high demand for maps, other data and services.

The server for this system is kept in the GIS centre room at the PPU. An in-house hurricane preparedness plan is in place to secure all IT equipment in the event of a disaster.

2.4.1 Our Recommendations

The last sets of aerial photographs were taken in 2001. Montserrat's landscape has undergone major changes since that time due to constant rebuilding of the island's infrastructure. GIS should ensure that these visuals are upgraded accordingly, perhaps every 3-5 years.

2.4.2 Management Response

We agree that the aerial photographs of Montserrat should be updated at least every 3-5 years, even more frequently as the rate of development increases. Currently our dataset is 7 years outdated. Funds must be allocated for this important resource, as the Geographical Information System has proven that the benefits far out-weigh the cost.

2.5 SUPREME/MAGISTRATE COURTS

The Supreme and Magistrate Courts utilize an IT system called JEMS which is justice software developed for courts. This judicial court software delivers features courts expect in justice software for all types of court cases, payments, warrants, sentencing, docket scheduling, generating forms, and reports. The court

initiates and maintains any number of court cases with the court management system.

There is a procedures manual which provides details on how to find or input data such as case manage basics, associated cases, bonds, files and parties. We found that it also has features for accounting. However, at the Supreme Court it is mainly used to record information such as the results of a particular case. Authorized users in St. Lucia have access to this information. The benefits of this software are that it can:

- update court cases in real-time, as decisions are made in the courtroom
- attach obligations automatically to cases
- track restitution, court cases, and bond payments

The department encounters problems at times with the system but GISU and the Court of Appeal provides support services. The full extent of JEMS is not being utilized by Registry. This is due to limited manpower as only one staff is trained to use this system. This staff member job responsibility is diverse and hence the time taken to enter or extract basic information is minimal. It was also noted however, that the manual and IT system are utilized simultaneously.

2.5.1 Our Recommendations

As this system is only being utilized on a small-scale there are many benefits that can be derived from full usage. We recommend that the Courts seek to establish a direct connection to the database from St. Lucia which is now being considered. This will eliminate the time it takes for IT personnel to arrive on island and minimized the time it takes for the problem to be rectified.

2.5.2. Management Response

The OAG did not receive a response.

2.6 REGISTRY

Following the eruption of the Soufriere Hills Volcano most of the court and civil records were salvaged from Plymouth and placed in temporary storage. These records were inadequately housed and protected. Hence a project was initiated to sort and preserve the civil records of Montserrat by computerizing them. The creation of the electronic database of the records was intended to permit fast and accurate retrieval of information when required. This project received approval in early 2000 at a total cost of EC\$430,000 and an implementation period of 15 months was agreed with consultants.

As of August 2004, a total of 83,470 records had been processed. Records spanned the period 1850 to 2004, with some records going as far back as the 1700s. We found that the implementation of the electronic processing of certificates and civil documents apparently ceased in 2004 after well over EC\$300,000 was spent. This project was never used and was abandoned which meant that value for money was not achieved. This project proved to be extremely costly for the Government of Montserrat.

2.6.1 Our Recommendations

We found that this project is not totally lost and it is now up to the Registry with assistance from relevant person(s) to seek to rectify the complete implementation of this project. We further recommend the following:

1. bring all records - births, deaths, marriages, deeds, trade marks and patents up to date. Thereafter, continuous updating must be done.
2. this system must be utilized to issue records in a timely manner and fees charged accordingly and appropriately. For example, if a request is made for a certificate earlier than normal processing time then the department can charge an additional fee. Charges can then be established for same day processing, next day processing or normal time.
3. Accounting Officer seeks the proper authorization and approval from Legislative Council for Schedule of Fees.
4. it is important that more than one staff member be trained to use this system of inputting and extracting the records in the event of absenteeism.

2.6.2 Management Response

The OAG did not receive a response.

2.7 POLICE - OTRCIS

The Royal Montserrat Police Force use a computer application which is common to the Overseas Territories in the Caribbean called the Overseas Territories Regional Criminal Intelligence System more commonly referred to as OTRCIS. This intelligence system is used for gathering and disseminating information among the Caribbean Overseas Territories to assist in the prevention, detection and investigation of major crime, particularly, fraud, money-laundering and drugs-

related crime. Basically, it is used to log reported crimes, incidents and intelligence.

The benefits of this system are that it aims to keep lines of communication open between different jurisdictions, providing a secure database of criminal, and suspected criminal activities in the area. This system also captures residents and non-residents movements and also vessel movements - planes and boats.

The cost of annual subscription for this system is US\$50,000. This system is extremely effective in capturing important information and it backs up itself twice a day. We found that:

- The department is dependent upon those in Miami to make any changes to the system so that different information could be captured and reports produced. Trainers have to come in from Miami and this does not occur often resulting in the inability of the Police to generate quality reports.
- Different areas of the system are not password protected which means that a junior officer can have access to all levels of the system.
- There were times when the Police have reverted to their manual system. The reason for this was that whenever the government system was inoperable/down the airport OTRCIS is non-functional. This is because the Police no longer have independent internet service from Cable and Wireless.
- The department is not using it appropriately or to the best of its ability to capture key information due to inadequate training.

- Police does not always notify GISU of their intention to purchase IT hardware or software.

2.7.1 Our Recommendations

We recommend that:

1. The Police should have a fully trained OTRCIS person on-island.
2. Various levels of the system must be password protected to prevent junior officers from having access to the entire system.
3. Police should notify GISU of their intentions to purchase any IT system to ensure compatibility.
4. GISU and the Police need to find an alternative solution so that the OTRCIS can be functional whenever the government system fails.

2.7.2 Management Response

The Royal Montserrat Police Force is in agreement with the contents of the report.

2.8 GLENDON HOSPITAL

Patient Administration System (PAS) is a computerized system for storing, analyzing and recording information. For example it provides an index of all patients who have attended the Casualty, whether on an in-patient or out-patient basis. It is able to provide information concerning waiting lists and also to print documents, it contains information on patients' diagnoses and procedures. The annual support for the PAS is US\$3,000. To date the Ministry of Health has spent EC\$118,190.97 for the implementation of the PAS.

The most important benefits are the achievement of a single patient index and the ability to integrate all administrative information about patients, including information held at casualty and the clinics. Additionally, patients can be tracked seamlessly throughout their stay in hospital, enabling the staff to provide a better standard of care and more patient-centric service. This system also reduces operational cost.

We found that the system presents little administrative (operational) problems and it has boosted evidence based management by improving clinical governance and effectiveness. Generally, the reports from the users were that the system works well and is efficient. However, some manual systems are still being used and secondly, this system does not give the option to include the treatment of a patient. For example, if a patient visit the clinic this year and was issued with treatment then nurses and doctors should be able to see the treatment administered should that patient visit again in the future.

On the wards the nurses are expected to enter the admittance and discharging of patient information and it appears as if this is not done on a regular basis. We

found that internet usage by the nurses is extremely high and this has lessened productivity. We discovered that a significant amount of time is spent viewing online shopping websites. Nurses sometimes do not log off from the system and there are times when the internet is left on for a considerable amount of time.

2.8.1 Our Recommendations

We recommend that:

1. adequate supervision be given to ensure that this system is fully utilized considering that an annual subscription is being paid. Although it is efficient the lack of utilization results in it not achieving the required value for monies spent. Additionally, the usage of the internet for unrelated work should be restricted perhaps a time limit per user can be implemented.
2. nurses be trained or retrained to properly use the system because there are other benefits that can be derived from appropriate usage.
3. the PAS be upgraded/configured to enable doctors to see all treatments administered to patients. This is because sometimes if two or more medications are used together they can result in allergies or fatalities. If the current system cannot be configured to show this information, it is recommended that the system be upgraded to accommodate this. This will result in a more efficient patient care service and reduce the time spent on locating patient's medication history.

2.8.2 Management Response

The limited usage of the PAS system, especially on the wards, has been largely due to reduced support from the GISU (Computer Unit), and on some occasions the system remains dysfunctional for considerable periods. This problem resulted when the GISU officer who was assigned to the PAS system at the hospital took up other duties in another department.

At the moment the Home Manager who was recently retrained as a trainer has been waiting for weeks to be able to log on to the system but with little support. On some occasions, there were some miscommunications on relaying problems with the system to the GISU. There are extend log-on periods for some nurses since;

- i. some nursing staff log on for nurses who do not yet have access. The GISU must provide access for these nurses.
- ii. some doctors use the system under nurses' log-in, since computer access is limited on the hospital compound for the doctors.

When the PAS system was implemented, the Ministry of Health (MoH) trained 5 trainers and trained all nursing staff. Since, then, there has been much rotation and changes in nursing staff and more significantly, the MoH lost 4 of the 5 trainers. This meant that there was hardly any support for the remaining committed nurses.

It is recommended that the GISU reassign another officer/s to the PAS system and formally communicate this to the MoH. It is not practical to have the MoH call the GISU and not have a focal point for this. This was discussed in November 2007 with GISU and the arrangements are to be finalized.

The MoH is in agreement that the system should accommodate information on treatment received by the patient. This request has been made to Heron Technologies. Also, it must be noted that some degree of manual record keeping will continue based on legal and other requirements. Finally, nurses have been assigned unlimited internet access for the purposes of doing research. The MoH however notes the observation and will take steps to address the issue.

2.9 STATISTICS DEPARTMENT

The Statistics Department utilizes six IT systems - Caribbean Tourism Organisation Management Information Systems (CTOMIST), Statistical Software for Social Sciences (SPSS), Computerised Enhanced Balance of Payments Systems (CEBOPS), EUROTRACE and Integrated Microcomputer Processing System (IMPS).

- CTOMIST is a management information system for tourism and this system is used to collect and disseminate data on the development of tourism. CTOMIST was presented to the department by CTO at no cost and has no recurrent costs attached. The system comprises of three main components: performance, product inventory and marketing. The benefits include the tracking of characteristics and expenditure to the country and the ability to capture information that can be disseminated in a short time.

We also found that the department receives immigration cards from the police. The drawback with this is the considerable amount of time that Statistics support staff spends inputting information into the MIST database.

Senior Statistician established contact with the offshore custodians of the immigration information system - OTRCIS and have received arrival data

- into Montserrat in spreadsheet form. Modification of MIST to allow for information in this form to be inputted directly into the system will see huge savings in terms of human resource and time.
- With SPSS, researchers and statisticians can generate decision-making information quickly using powerful statistics, understand and effectively present results in high quality output. It enables one to uncover key facts, patterns and trends. We found that this is a very good application for data processing and is used by Statistics to perform simple tasks. It is not used to its maximum as staff requires more training in order to put it to more sophisticated use. Statistics is considering making this software more widely available to the major Ministries - Health, Education and Agriculture which will reduce some of their workload.
 - CEBOPS is a database application used by Statistics as a data entry interface and was developed by the Eastern Caribbean Central Bank (ECCB) specifically for the generation of the balance of payments accounts. CEBOPS provides an excellent tool for generating standard balance of payment statistics. The programme which is access based, has some minor flaws which need to be addressed at the design level but which do not ultimately hinder the production of the accounts. This programme was presented to the OECS Statistical Offices at no cost and no recurrent costs are attached.
 - Another specific computerized system used by Statistics is called EUROTRACE. It is used for data collection, processing trade statistics and is seen to be the complimentary tool in any project, which aims at complying with international standards. The Department is currently using EUROTRACE DOS which is quite outdated and does not allow for much flexibility. The current dos version seems to work most efficiently from a

stand alone workstation. This system is expected to be updated to be used in a windows environment which will allow for greater flexibility.

- IMPS is designed to process census and survey data. The department along with the rest of the region has been using this system for years. The department is particularly concerned with strengthening its capability in the actual construction and maintenance of databases using either this application or Census & Survey Processing System (CSPRO) which has recently replaced IMPS. This system is provided at no cost by the US Bureau of Census.

It was reported that the reliance on external assistance for the construction, management and maintenance of local computer databases has continued to negatively impact the department's reporting timelines.

Overall, Statistics department is fully utilizing the portions of CTOMIST that is accorded to them and is therefore achieving value for money. The other systems are being efficiently utilized but more upgrades and a little training would see greater value for money being achieved.

2.9.1 Our Recommendations

We recommend that the department:

1. seek approval to also exploit the OTRCIS system that is used by Police because of the outputs that the department can received through its utilization. Perhaps the system could be configured to restrict sensitive information that should not be passed to Statistics Department.
2. seek further training in their systems in order for them to be fully utilized.

3. Upgrade EUROTRACE DOS to EUROTRACE windows to allow for greater flexibility in how data is stored, accessed and analyzed.

2.9.2 Management Response

The Statistics Department is in agreement that this is a fair representation of their systems.

CHAPTER 3

3.0. CONCLUSION

IT is a means to an end. IT systems exist to support activities which themselves exist to support business objectives. The public sector is spending a lot on IT whether it is for hardware, software, or even peripherals to improve efficiency, become more effective or obtaining a stronger foothold within the economy.

There were many recommendations and it is for the management of each department to decide the best course of action to improve some of the systems that are not being fully maximized. The computerization of the civil records has been dormant for a number of years. The Registry must seek ways to readdress the implementation of this system in order to maximize the potential for improving efficiency in providing documents at a faster pace.

The goal of any IT system is to improve service delivery within the Montserrat Public Sector. Of the eleven (11) systems only four (4) - Smartstream, Geographical Information System (GIS), OTRCIS and CTOMIST are functioning close to full capacity. Other systems must be fully implemented and utilized to achieve the desired outcome and value for money.

Overall, value for money was not achieved based on the current performance and utilization levels observed with the various systems. However, the possibility still exists that these systems can be exploited to their maximum potential. This will depend heavily on how well and how quickly the recommendations are put into practice.