ARMS Ltd.
Setting Up and Operations

Report
by the
Auditor General

NAO/36/2010 November 2011

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ABBREVIATIONS

AG	Auditor General
AL	ARMS Limited
AMM	Automated Meter Management
APS	Apostleship of Prayer Savings Bank
ARMS	Automated Revenue Management Services
ATM	Automated Teller Machine
BoD	Board of Directors
BOV	Bank of Valletta
BPO	Business Process Outsourcing
BPR	Business Process Reengineering
C/S	Consumer Scheme
CDB	Common Database
CEC	Core Evaluation Committee
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CIO	Chief Information Officer
CMT	Change Management Team
CNT	Core Negotiation Team
CRM	Customer Relationship Management
CSR	Corporate Social Responsibilities
DG	Domestic (Garage)
DMS	Distribution Management System
DoC	Department of Contracts
DR	Domestic (Residence)
DSS	Department of Social Security
EMC	Enemalta Corporation
EMS	Energy Management System
ERP	Enterprise Resource Planning
GCC	General Contracts Committee
GIS	Geographic Information System
GT	Grant Thornton
GWU	General Workers Union
HoR	House of Representatives
HR	Human Resource
HSBC	Hong Kong and Shanghai Banking Corporation
IBM	International Business Machines
ICT	Information and Communication Technology
IT	Information Technology
IUBS	Integrated Utilities Business Systems
KPI	Key Performance Indicator
LN	Legal Notice

MFEI	Ministry of Finance, the Economy and Investment
MFSA	Malta Financial Services Authority
MIIIT	Ministry of Investment, Industry and Information Technology
MISCO	Market Intelligence Services Company
MITA	Malta Information Technology Agency
MITC	Ministry for Infrastructure, Transport and Communications
MoU	Memorandum of Understanding
MRA	Malta Resources Authority
NAO	National Audit Office
NOP	Number of Persons
NSO	National Statistics Office
PRB	Project Review Board
PTL	Philip Toledo Limited
Q	Quarter
RfI	Request for Information
RfP	Request for Proposal
RMS	Route Management Software
RR	Residential (Residence)
SCADA	Supervisory Control and Data Acquisition
SLA	Service Level Agreement
SoP	Standards of Procedures
UAT	User Acceptance Testing
UPS	Uninterruptible Power Supply
VAT	Value Added Tax
WAG	World Aviation Group
WSC	Water Services Corporation

EXECUTIVE SUMMARY

This Investigation concerns the setting up and staffing of ARMS Ltd., together with the level of service provision offered by the Company to its clients, the consumers of water and electricity across Malta and Gozo. The terms of reference of the Investigation were laid down by the House of Representatives in a Resolution dated 11 November 2010. Through the same resolution, the Auditor General was also to investigate any other related matters of interest to the taxpayer and to make the necessary recommendations.

The Investigation was conducted in accordance with Para 9(a) of the Auditor General and National Audit Office Act, 1997 (XVI of 1997) and in terms of NAO practices.

Findings presented in the Report are based on meetings held with pertinent officers, examination of voluminous documentation, and other varied desk-based research and information collection.

Apart from basing its report on ARMS Ltd. reports and documentation, the NAO Investigative Team carried out data analysis exercises on primary data extracted from ARMS Ltd. databases.

In view of information technology related concerns, NAO supplemented the Office's Investigative Team's resources by engaging the services of a professional technical adviser.

It is pertinent to note that, while public focus fell on ARMS Ltd., the scenario is, in effect, much wider - this being the implementation of a mega-project involving both Enemalta Corporation and Water Services Corporation. The project included replacement of core business software, a nation-wide changeover to smart meters and the acquisition and deployment of various other technological aids meant to help modernise the Corporations. ARMS Ltd. was the 'agency' set up by the Corporations to manage the meter-to-cash function.

The following are some of the more salient highlights of the Report:

- The nature of the project was changed during the tendering process - operations were decoupled from the original Business Process Outsourcing model requested.

- To date, despite take-over by ARMS Ltd. and the implementation of the new, state of the art, systems, no significant changes to the meter reading process have been registered. The system is still based on a mix of provisional estimates and manual meter readings and can only change drastically (for the better) with the widespread implementation of smart metering.

- NAO noted that a considerable number of accounts were 'locked' and were not having bills issued. This is one critical area where ARMS Ltd. has continuously failed to ensure success - despite various efforts over a number of months, the quantity of locked accounts remains high.

- ARMS Ltd. monitors performance through Key Performance Indicators. NAO feels these should be revisited and updated to offer a more holistic and truer picture of operations, output and outcome at ARMS Ltd. to both the Company's management and Board of Directors.

- IT related issues were identified by NAO's commissioned technical expert. The more salient included data quality checks prior to migration and a breakdown in controls during 2010, resulting in data mismatches between major modules of the new system.

- ARMS Ltd. lacks a dedicated Customer Care function. In view of its extensive customer-base and the continuous contact with its clients, the Company should look into this matter.

- Other key positions that ARMS management should consider creating cover HR and Revenue Assurance.

- NAO is cognisant of the fact that the very best by way of IT systems have been deployed for the project. This, by itself, is however no guarantee of success. One critical area in which NAO considers ARMS Ltd. to be deficient is customer contact historic analysis. NAO requests to ARMS Ltd. for categorised customer complaints' lists remained unsatisfied as the level of analysis requested was unavailable.

NAO acknowledges that progress has been reported since the change-over to the new system and the take-over by ARMS Ltd. However, there are still critically material deficiencies that need to be addressed and further progress in project implementation (mainly smart metering) that need to be achieved before any tangible return on the very significant investment made can materialise.

CHAPTER 1 - INTRODUCTION

1. The Terms of Reference

On 29 September 2010, the Parliamentary Opposition presented a motion in Parliament whereby it stated that Government had refused to publish a contract for the procurement of utilities' smart meters, a system for smart billing and other related services, which contract was valued at least 70 million Euro. The Opposition further stated that the new system generated numerous errors, causing considerable hardship to consumers. It was also alleged that a number of families had not yet received the energy allowance granted by Government and that senior positions within Automated Revenue Management Services Ltd. (ARMS) - the newly set up company responsible for the Billing and Customer Care functions for both Enemalta (EMC) and the Water Services (WSC) Corporations - were directly appointed by the Minister responsible for the Utilities. This followed weeks of negative media coverage and a public outcry over the customer service being given by ARMS Ltd. in connection with utilities bills. The Opposition's motion called on the Auditor General (AG) to investigate these allegations.

Changes to the motion were presented by the Government side and, on 11 November 2010, the House of Representatives (HoR) resolved that the Auditor General was to investigate:

a. the decision, and process used, to set up ARMS Ltd.;
b. the method of selection of ARMS Ltd. employees;
c. the reasons for complaints by consumers regarding the services provided by ARMS Ltd., and
d. any other related matters of interest to taxpayers.

The Auditor General was also requested to make the necessary recommendations with regard to ARMS Ltd. The Opposition's motion features as Appendix 2 and the amended motion as approved by HoR is at Appendix 3 of this Report.

Papers and correspondence relative to this inquiry are recorded in NAO 36/2010.

2. Introduction

In early 2005, Enemalta embarked on a comprehensive Information and Communication Technology/Business Process Reengineering whereby a thorough overhaul of its business methods was undertaken. Business process requirements were defined and targets were established in a Transformation Plan Project/system scoping and sizing, based on best practice Utility sites of a similar size and scope overseas. Further to Enemalta's approved ICT/Business Process Transformation strategic plan, implementation plan and investment appraisal, the Water Services Corporation was invited - and agreed - to participate in this Utilities ICT/Business Process Outsourcing (BPO) initiative.

Although the Utilities ICT project covered systems belonging to different domains not typically actioned by a single entity, the Utilities set out to undertake a single procurement for the entire supply of systems and services required. On 4 November 2005, the Corporations - through the Department of Contracts (DoC) - jointly issued a Request for Information (RfI) for an Integrated Utilities Business System - a Business Process Transformation Strategic Partnership (IUBS). According to this RfI, the Utilities were seeking to enter into a strategic partnership with a capable international Business Transformation organisation for a period of not less than five years. The closing date for the submission of offers was 31 January 2006.

The primary objectives of the strategic partnership, as stated in the RfI, *inter alia*, were:

- the Partner's capabilities were to be complementary and not simply additional to the Utilities' and Government's core ICT resources;
- a long term business relationship whereby the Partner and Utilities will be working towards a common set of pre-determined strategic, tactical and operational goals, and
- sharing of knowledge, data, innovations and best practices and a high component of collaborative research and development. *(1 in E/E/T/84/2005)*

Although the context of the Strategic Partnership was to ensure a common converged effort, it was also expected that, *inter alia*, the Partner would take a lead responsibility for the following core activities:

- ensure that all of the functional components of the Utilities Framework work seamlessly with each other;
- supply, implement, integrate and in specified instances operate components of the project;
- on a continuous basis provide generic and specialised training to all users, and
- ensure that the implementation plan of the project fits in the Utilities overall project plan and other milestones indicated.

In particular, the IUBS tender provided for the implementation of systems in three main themes across both EMC and WSC, namely (1) Enterprise Resource Planning (ERP), (2) Utility Billing and Customer Relationship Management (CRM) and (3) Automated Meter Management (AMM). Theme Four - the Energy Management System (EMS) - dealt solely with Enemalta's electricity requirements.

More specifically, the four key themes comprised:

1. Enterprise Resource Planning:
   ERP integrates internal and external management information, facilitating the sharing of information. ERP business processes provide the basis for the management of utility services, maximising possible process efficiencies.

2. Customer Relationship Management:
   CRM is a business strategy that supports the retail operations of an organisation. It involves using technology to organise, automate and synchronise business processes including sales, marketing, customer service and technical support.

3. Automated Meter Management:
   AMM is the technology of automatically collecting consumption, diagnostic and status data from water meter or energy metering devices and transferring that data to a central database for billing, troubleshooting and analysing.

4. Energy Management System:
   SCADA is a software package for data collection and presentation and can be used to monitor and control plant or equipment.

A more detailed description of the four IUBS themes is at Appendix 4.

According to the RfI, the CRM and AMM themes required a business process outsourcing service while the ERP required an application software provision service. The EMS required a procurement, training and knowledge transfer service.

By the closing date (end January 2006), eight expressions of interest were received and on 12 December 2006, through the publication of a Request for Proposal (RfP), seven of the tenderers were invited to put forward offers for a strategic partnership with both Utilities for the supply and implementation of the IUBS. The tendering process was to be conducted under the Restricted Procedure of the Public Contracts Regulations (Legal Notice 177 of 2005) and, given the financial outlay involved, the three-package process was adopted.

By 3 April 2007, the closing date for the submission of offers, one bid - from International Business Machines Ltd (IBM) - was received. The bid stipulated a total cost of €126 million (excluding VAT) (or €155 million VAT inclusive) spread over a five-year period. This amount included some optional features but nonetheless significantly exceeded the internal estimate of €54 million (excluding VAT) originally formulated in 2005.

In the context of a single bidder, the Utilities sought independent third party analysis of the financial proposal by IBM (the review of the technical submission was carried out by the Utilities' Core Evaluation Committee). The analysis by PwC was to ensure that price quoted reflected fair and reasonable market costs for the services proposed and, furthermore, that there was a positive cost benefit to the Corporations. Although IBM's financial submission significantly exceeded the original budgeted amount, the investment appraisal by PwC indicated that the proposal broadly reflected market prices and that the overall viability depended on the realization of the wider potential benefits which had been identified in the appraisal.

On 24 April 2008, the General Contracts Committee (GCC) found the bid as having met the requirements stipulated in the RfP and recommended that a letter of intent be issued to IBM so that the Utilities will be in a position to negotiate the best deal with the bidder. Moreover, given the positive cost benefit in the implementation of the AMM element of the IUBS, the GCC further recommended that this module be considered for the first stage of implementation. The Corporations were also to evaluate whether the meter-to-cash (ERP, CRM and Billing) function be carried in-house or through the BPO option proposed by IBM. The GCC further maintained that the Corporations may contract for parts of the tender rather than award in whole, and negotiate clear exit clauses for the different phases of the project which would allow the Utilities to consider the ability to free themselves from some of the contractual obligations if expected benefits did no materialise. The Utilities were to request the bidder to discount the quoted prices.

During ensuing negotiations held between the Utilities and IBM, it was agreed to decouple the meter-to-cash from the outsourcing option - initially preferred by the Corporations - in order to conclude, as fast as possible, negotiations on the AMM component of the tender which had been identified by the Corporations as the component which offered the more significant return on investment. It was agreed, and endorsed by the GCC on 11 September 2008, that the Corporations would procure the AMM sub-solution at the price of €47,280,110 (inclusive of VAT), excluding installation which was to be carried out in-house. The Utilities decoupled the installation of the meters from the bid on the basis that IBM had, during the process of discussion, increased the cost of installation by 100 per cent. At the same time it was proposed that the parties sign a Memorandum of Understanding (MoU) to continue to negotiate the other elements of the tender on which the Utilities had failed to reach an agreement. The AMM contract, following the award and closure of the appeal process, was signed on 25 September 2008. The MoU was signed between the parties on 29 October 2008.

During negotiations initiated in early November 2008 on the remaining elements of the bid, the Utilities took the following position:

- the Utilities were ready to issue a new tender in the event that IBM was not ready to place an acceptable position;
- the issues raised on the meter-to-cash negotiations prior to the signing of the AMM sub-project of the IUBS and as represented in the MoU continued to be relevant;
- the Utilities were no longer considering the BPO option of the IUBS solution, and
- the Utilities were ready to consider the SCADA aspect of the IUBS project.

After lengthy discussions with IBM, in November 2008 the Utilities presented their final position on the meter-to-cash module for a contract value of €33,840,000 (VAT inclusive). This included the SAP implementation and ICT hardware, software and related services. IBM accepted the Utilities' final position and on 16 December 2008, the General Contracts Committee recommended that the offer for the meter-to-cash module of the IUBS be accepted.

Negotiations on the SCADA solution (the element of the IUBS tender relevant only to EMC) were held between March and May 2009 with the decision that a contract for the implementation of the proposal as negotiated - encompassing the agreed basic implementation and the options for outage reporting and load shedding - be awarded to IBM at a cost of €4,960,500 (excluding VAT). On 18 June 2009, the General Contracts Committee approved, after the endorsement of the Minister MITC, the award of the contract to IBM. This brought to closure the process relating to the IBM tender.

The decision to migrate and consolidate operations related to meter-to-cash and customer care of both Corporations was already part of the strategy articulated in the IUBS project. At the time, WSC was solely carrying out all billing operations and related billing process functions - such as meter reading, billing and customer support - including those on behalf of EMC. When the decision was taken not to take up the BPO option by IBM, the possibility of a legal entity owned by both Corporations was explored. With this decision, it was argued, EMC would have equal decision making authority as WSC since it was investing 50 per cent of the cost of the project. Given that outsourcing was rejected, the Corporations agreed to establish a separate company to be responsible for customer care and billing on behalf on both Corporations and ARMS Ltd. was set up.

ARMS Ltd. is a private company, jointly owned by EMC and WSC. Registered on 19 January 2009, its principal objective is to develop, set up, install, operate, administer and manage an integrated utilities business system for the purposes of billing services. ARMS' main activities are to manage the implementation of a new Meter Reading, Billing and Collections (meter-to-cash) process and Customer Relationship Management functions for both Corporations. As part of its customer service activities, ARMS Ltd. was committed to introduce a new internet portal, which is to provide consumers with detailed consumption data and on-line payment facilities, and to develop the concept of a 'one-stop shop' for consumers. ARMS Ltd. is also entrusted with the management of the smart meter roll out.

3. Methodology

This inquiry was conducted in terms of Para 9(a) of the Auditor General and National Audit Office Act, 1997 (Act XVI of 1997) and in accordance with generally accepted practices and guidelines applicable to the National Audit Office.

During the course of this inquiry, a considerable number of meetings and interviews were held with various officers and persons either directly or indirectly involved in the setting up and management of ARMS Ltd. or who offered to provide information related to this inquiry. In particular, meetings were held with the Ministry for Infrastructure, Transport and Communications (MITC), the Ministry then responsible for the Utilities, and with the Malta Resources Authority (MRA) in its role as regulator. Themed meetings were held with ARMS senior officials during which particular topics relevant to the inquiry were discussed. Interviews were also held with a number of front line officers seconded to ARMS Ltd. directly handling customer complaints.

The National Audit Office sought to independently verify ARMS' billing activity for three consumer categories. To obtain assurance, NAO sourced data files for domestic garages, domestic residentials and residentials extracted from ARMS Ltd. database. A sample - deemed to be manageable for the purpose of the investigation and sufficient for the purpose of establishing ARMS' billing activity for the three different categories - was analysed for billing activity, including number of bills issued, frequency of bills issued and billing intervals.

Relevant documentation and information required were, to the best of our knowledge, made available to this Office. NAO findings and conclusions are based on the evaluation of such documentation and information.

As is normal in such inquiries, the NAO engaged the services of a professional technical adviser to assist the Office and to evaluate particular aspects related to the inquiry, as per Terms of Reference at Appendix 12.

Unless otherwise indicated, this Report reflects the position as at October 2010, the time when the investigation was commissioned. Action taken and developments since then were reported upon where deemed necessary.

4. Background Considerations

Summer of 2010 was marked by a vociferous public outcry and constant negative media coverage over utilities bills and the level of customer service provided by ARMS Ltd., now responsible for the billing and customer care functions on behalf of EMC and WSC.

The complaints most often cited by consumers and raised in the media were:

- erroneous consumer bills;
- long queues and waiting times;
- inadequate facilities, such as not enough parking space and insufficient number of desk officers;
- erroneous bills, errors already reported repeated in subsequent bills and the necessity of repeated visits to address same complaint;
- irregular intervals for the receipt of bills with bills submitted either at very short or after considerably long intervals;
- the unsigned legal letter submitted by ARMS Ltd. to defaulting, and at times non-defaulting, consumers, requesting settlement of dues within three days and the imposition of an additional €12 charge for related expenses, even though ARMS Ltd. did not have a legal office;
- the 6 per cent interest levied on late payments;
- errors in the energy subsidy granted by Government to offset increases in water and electricity tariffs;
- inefficient service related to ARMS' call centre and unanswered emails and enquiries;
- estimated bills despite meter readers taking actual readings;
- installed smart meters not activated in smart mode;
- no water and electricity bill calculator available online, and
- the vacant post of the company's Chief Executive Officer (CEO).

Although ARMS Ltd. was responsible for the quality of customer service being provided and for the bills being issued, a number of other factors, not attributable to the Company, exacerbated the situation. These included:

- the introduction of significantly higher tariffs for utilities in January 2010 which resulted in considerably higher bills for consumers;
- the closure of the WSC Valletta customer care office in April 2010 on account of the Valletta City Gate project which generated a high degree of customer dissatisfaction, mainly due to the inaccessibility of the Luqa office;
- Government's decision to issue a one-time energy allowance to compensate for higher international oil prices which triggered a considerable number of customer queries related to the transfer of ownership of accounts and changes in the number of persons in households;
- a radical change in the billing and accounting procedures and software that required a transition period and which in this instance created a number of bottlenecks in the billing cycle, and
- a new billing format that, although providing additional data by giving indications of consumption patterns and other relevant information, was new to consumers and generated numerous queries.

In line with the terms of reference, NAO considered the issue of customer service and customer satisfaction from a number of perspectives. This Report tackles each of these perspectives highlighting the relationship, direct or otherwise, of how these impinged on customer service and satisfaction. In particular, these are:

- The Setting-up of ARMS Ltd.
- Meter Reading and Billing
- The Technical Report on the Transition from the Legacy System to IUBS
- Customer Care
- ARMS Ltd. Premises
- Line Management and Key Staff Recruitment
- Deployment of Non-Managerial Grades
- Management Perceptions
- Perceptions of Non-Managerial Grades.

NAO analysed and evaluated the situation prevailing in the third quarter of 2010 where ARMS' operations are concerned, although developments to date are reported upon where these were deemed necessary.

This Office concluded that far from there being one source of deficiency, problems were being caused by a larger number of issues, widely varying in nature, although all contributing to the same end result.

CHAPTER 2 - SETTING UP OF AUTOMATED REVENUE MANAGEMENT SERVICES LTD.

1. The Setting up of ARMS Ltd.

In early 2005, Enemalta Corporation embarked on a comprehensive ICT/Business Process Reengineering whereby a thorough overhaul of its business methods was undertaken. The Water Services Corporation was invited, and agreed, to participate in this Outsourcing Utilities ICT/Business Process initiative through the issue of the IUBS tender.

The decision to migrate and consolidate operations related to meter-to-cash and customer care of both Corporations was part of the strategy articulated in the IUBS project. At the time, WSC was solely carrying out all billing operations and related billing process functions - such as meter reading, billing and customer support - including those on behalf of EMC. Given that the outsourcing option was rejected due to the costs involved, the possibility of a legal entity owned by both Corporations was explored. The Corporations agreed to establish a separate company to be responsible for customer care and billing on behalf of both Corporations and, in January 2009, ARMS Ltd. was set up.

According to ARMS management, prior to the setting up of the company, the customer care and billing functions at the Enemalta and Water Services Corporations were characterised by two distinguishing features:

- *Customer care functions were spread across a number of functional departments such that responsibility for the overall management of the process could not be tightly defined. Customers had many contact points which could prove to be confusing, especially since the bill was a joint bill for both Utilities.*

- *WSC had, until the setting up of ARMS Ltd., collective responsibility over a number of processes carried out on behalf of both itself and EMC. Revenue collected by WSC was approximately 83 per cent due to EMC and 17 per cent to WSC; despite this, EMC had little say over these processes.*

The Utilities therefore decided to set up a separate company, ARMS Ltd., to be responsible for customer care and billing, citing the following reasons:

- *ARMS Ltd. would initially be able to concentrate solely on the implementation of customer care and billing systems and the migration of data from the old system to the new system.*

- *Consolidation of operations for both Utilities would result in a reduction of costs through synergy to operate meter-to-cash and customer care.*

- *The customer would have a single point of contact when dealing with any issue related to both Utilities.*

- *The Company would operate as independently as possible of the two Cororations, with shared capital from both Utilities.*

- *EMC felt that it would have more control and decision making, particularly in view of the fact that the major amount collected was for electricity.*

On 19 January 2009, ARMS Ltd. was registered as a limited liability company in terms of the Companies Act (1995), duly registered with the Malta Financial Services Authority (MFSA). It is jointly owned by EMC and WSC with the two Corporations each holding a 50 per cent share of its capital. Its principal objectives are to develop, set up, install, operate, administer and manage an integrated utilities business system for the purposes of billing services. ARMS' main functions are to manage the implementation of a new meter reading, billing and collections process and customer relationship management functions for both Corporations. As part of its customer service activities, ARMS Ltd. was bound to introduce a new internet portal, which is to provide consumers with detailed consumption data and on-line payment facilities, and to develop the concept of a 'one-stop shop' for consumers. ARMS Ltd. is also entrusted with the management of the smart meter roll out.

2. Functions of ARMS Ltd.

In January 2009, Enemalta and the Water Services Corporations set up ARMS Ltd. as a result of their strategic partnership to implement the IUBS programme. In more definite terms, the newly formed company is responsible for the following operations on behalf of both Corporations:

- Customer Care and Call Centre;
- Applications for water services;
- Device Management;
- Billing and Invoicing;
- Cash Collection;
- Debt Management, and
- Revenue Management.

As from February 2011 ARMS Ltd. has also taken on the function of credit control of heavy consumers from EMC and discussions for the transfer of EMC's Customer Care to ARMS Ltd. are currently underway.

A comprehensive list of the objects of ARMS Ltd., as outlined in the Company's Memorandum of Association, is at Appendix 5.

According to the Company's management, the main advantages in setting up ARMS Ltd. were (a) the streamlining of operations, (b) the ability for EMC to control the service provided on customer care, billing, revenue management and credit control and (c) a reduction in WSC's operational costs. Flexibility is also a key advantage as this gives ARMS Ltd. the opportunity to employ personnel with a new contract and redefined work practices and job descriptions something that, according to ARMS management, is inherently difficult and slow within the Corporations.

Asked whether all the issues cited and benefits envisaged have been addressed/realised through the setting up of ARMS Ltd., management stated that currently ARMS Ltd. handles all requests and queries relating to Utilities except for applications for electricity services, which involve visiting the consumer premises (such as new service, change or test of an electricity meter, removal of a service, etc) and which are still handled by EMC. The idea of a one-stop shop increases economies of scale and offers a more convenient and consistent service to customers. According to ARMS Ltd., the company is introducing new services and channels which will further reduce the number of clients calling at its premises. Moreover, the increased use of on-line payment as well as the deployment of billing via smart meters will improve the efficiency of the company. The projected target for payments on-line by the end 2011 is of €1 million per month. According to ARMS management, considerable progress has, to date, been achieved.

3. The Role of ARMS Ltd. vis-à-vis EMC and WSC

With effect from 1 January 2011, the relationship between ARMS Ltd., EMC and WSC was formalised through a Heads of Terms agreement signed by all three parties. This agreement lays the framework of the relationship between these entities, establishes the financing regime of ARMS Ltd. and defines objectives through Service Level Agreements (SLA). The full text of the Heads of Terms is at Appendix 6.

The Heads of Terms agreement establishes the appointment of ARMS Ltd. to perform all meter-to-cash functions for EMC and WSC on an exclusive basis. On its part, ARMS Ltd. is to improve (reduce) average debtors of both WSC and EMC by 5 per cent per year compared to the debtor figures of 2008 (audit) taken as the benchmark year. The Company is also to provide the necessary analytical tools to both Corporations in order to reduce the currently unbilled non-technical losses compared to the 2009 audited figures being taken as a benchmark. Additionally, ARMS Ltd. is to ensure the timely transfer and reconciliation of funds to WSC and EMC and provide the Corporations with any reports, statistics and/or data required. Each of the two Utilities holds 50 per cent shareholding in ARMS Ltd. and all approved capital expenditure of the company will be funded equally by WSC and EMC. As per the Heads of Terms, ARMS Ltd. will take onto its books all WSC human resources assigned on customer care and billing functions. ARMS Ltd. will also take onto its books the current EMC human resources handling customer care and credit control (except for the Compliance Section at EMC). The Company will charge each of WSC and EMC a percentage of the total revenues collected on behalf of each Utility and will retain to its revenue Customer Request Charges as per current practice. According to the agreement, formal SLA agreements will be entered into by ARMS Ltd. with each of the Utilities such that those services provided by ARMS Ltd. which can be automated and regularly measured will be identified and listed.

The Heads of Terms agreement consolidates the relationship between the Utilities and ARMS Ltd. It delineates the roles and responsibilities of the parties concerned, plans to set performance targets to better monitor operations and determines the financing structure of ARMS Ltd.

4. IUBS Appraisal by PwC

Since it commenced operations, ARMS Ltd. has focused mainly on the IUBS project implementation and operations. Success or otherwise of ARMS Ltd. is intrinsically entwined with and heavily dependable on the IUBS venture, its execution and management. The tasks assigned to ARMS Ltd. are directly linked to elements of the IUBS project, therefore its performance is unavoidably influenced by how the Utilities' requirements were identified, specified and met through their strategic partnership with IBM.

In April 2008, PwC carried out an Investment Appraisal of the IUBS financial[1] proposal submitted by IBM. As requested, PwC was to evaluate the tender submission by:

a. reviewing the original investment appraisal prepared prior to the issue of the tender;
b. splitting the investment appraisal into its main components to assist the appraisal of the available options, and
c. providing information to gauge the fairness of the costs quoted for the key elements of the IBM proposal.

However, PwC findings were *"based on information and estimates provided by and endorsed by members of the Core Evaluation Committee[2] (CEC) or supporting staff from EMC and WSC"*. Moreover, PwC assumed no responsibility and made no representations *"with respect to the accuracy or completeness of the information"* of the report, except where was otherwise stated.

Two scenarios were considered in PwC's cost benefit analysis: *"a 'base case' scenario, which reflects the benefits that in the opinion of the CEC can be achieved directly as a result of the proposed solutions and a second scenario which considers further quantifiable benefits that are potentially achievable from reduction in staff and other operational costs, that depend on negotiations with IBM and with internal stakeholders"*. Briefly, the cost benefit analysis carried out by PwC indicated that *"the base case scenario of the cost benefit analysis shows that the expected costs of €126 million exceed the potential quantifiable benefits by €27 million at present value. ... The second scenario shows a positive result of €2 million at present value, with the major contributor to the improvement coming from the estimated saving should the Corporations manage to reduce 123 employees working in the meter-to-collect cycle within 5 years. ... [However,] the scope of the project is such that one needs to consider its overall implications. There are several benefits and costs that are not quantifiable and, notwithstanding the results of the cost benefit analysis, the project may be justified on the grounds of the non-quantifiable benefits that can be achieved."*

This Office requested the views of ARMS management on PwC's investment appraisal of IBM's financial proposal since this clearly indicated that a positive outcome heavily depended on the ability of the Corporations to make significant long-lasting changes in the way they operate within the stated costs and expected timescales and the ability to reduce staff. When asked whether this is feasible, ARMS management stated that this will happen when the new smart meter system starts operating. The target is to have the majority of smart meters installed by January 2013 as well as the entire communication and infrastructure needed to operate the automated meter management system. By June 2011, Mdina, Manikata and a large part of Zurrieq were in fact connected and automatically billed through the use of the smart meters. According to management, ARMS Ltd. decided to start commissioning and billing via smart in a staggered manner as early on in the project as possible. In this way ARMS Ltd. aims to learn from the experience (and determine remedial measures) on a micro level rather than have a national rollout and be subject to specific problems which would affect large amounts of accounts at the same time. In addition the strategy adopted by ARMS Ltd. is intended to result in additional efficiencies since some benefits, such as automatic reading, accrue before end 2012.

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[1] PwC was requested not to review and comment on the technical submission provided by IBM as the outcome of the technical review carried out by the Core Evaluation Committee indicated that the solution proposed complied with the original requirements.

[2] The Core Evaluation Committee was made up of members from EMC, WSC and MIIIT and was in charge of the IUBS tender process.

5. Mission Statement and Corporate Social Responsibilities

ARMS Ltd. defines its mission as *"to provide a range of specialist services to the Maltese community on behalf of its business owners and partners, within the remit of the Utility Retail and Supply Sector. ARMS Ltd strives to increase the business value of its business owners and partners by (a) identifying and managing opportunities of revenue growth; (b) continually improving the quality and efficiency of the services it provides and (c) maximizing its capital utilization"*. Despite the fact that, according to ARMS Ltd., its main function is to provide customer services on behalf of the Utilities, not much reference to this is made in the company's mission statement. Asked for comments, ARMS management stated that, apart from the provision of the contracted services in an efficient way, as a limited liability company registered under the Companies Act, ARMS Ltd. also needs to ensure that it carries on its business in a solvent manner. Although this Office does not in any way contest this assertion and acknowledges the fact that the primary aim of a commercial organisation is generally to maximize the return to its shareholders, a company's mission statement should also reflect the organisation's values and ethos. ARMS management stated that, in their view, the company's *"mission meets these objectives"*.

NAO enquired whether any corporate social responsibilities (CSR) have been passed on to ARMS Ltd. According to ARMS management, the company's obligations with regard to customers are those specified in the relevant regulations; nevertheless ARMS Ltd. endeavours to improve the level of service to its customers. As regards employees, ARMS Ltd. is currently negotiating a collective agreement with the union representing the employees transferred from WSC/EMC, which will govern employment conditions. In its contractual obligations with suppliers, ARMS Ltd. is obliged to follow public procurement procedures. With regard to the community, although no specific obligations have been set since ARMS Ltd. is a start up company with a restricted revenue base, nevertheless it provides assistance to government for the handling of nationwide schemes, such as the distribution of energy benefits granted by government in 2010.

Asked whether ARMS Ltd. considers social, apart from financial, aspects when flagging accounts for action following, for example non-payment of bills, ARMS management stated that the Department of Social Security (DSS) deals with CSRs. Consumers who are unable to settle payments - should the DSS determine that they qualify - receive a subsidy from the DSS. Periodically, the DSS verifies with ARMS Ltd. the consumption of consumers who receive energy subsidies for control purposes. Asked who decides when the supply of utilities is to be disconnected, ARMS management explained that there are certain procedures and criteria that are followed before suspending a service. Generally, the company will first check whether it is a social case, look into the amount due and how long the payment has been outstanding, review the payment history of the account, send several notices and reminders and possibly enter into credit agreements with defaulters prior to referring the case to the Corporations for further action.

CHAPTER 3 - METER READING AND BILLING

1. Introduction

Background

ARMS Ltd. *inter alia* provides metering, billing and collection (meter-to-cash) services to the Enemalta and Water Services Corporations. In effect, it is responsible for reading consumer meters, calculating the bills, sending out invoices and receiving payments for the use of electricity and water. ARMS Ltd. deals with approximately 270,000 consumer accounts.

Consumer accounts are classified according to a number of consumer schemes which include:

a. residential - residence *(residences with one or more persons registered as living at account address)*;
b. domestic - residence *(residences with 'zero' persons registered or vacant residences)*;
c. domestic - garage *(garages registered for domestic use; only one garage per owner can be registered in this category)*;
d. non-residential - garage *(garages not registered per (c) above)*;
e. non-residential - commercial *(premises used for commercial purposes)*;
f. non-residential - day and night *(heavy consumers with differential 'day' and 'night' tariffs)*;
g. non-residential - industrial *(premises used for industrial purposes)*;
h. non-residential - government *(government premises),* and
i. non-residential - farmhouse *(farmhouses)*.

The majority of consumer accounts are classed in the residential - residence ('a' above), domestic - residence ('b'), and non-residential - commercial schemes ('e'). These account for 141,846 (51%), 77,193 (28%) and 30,653 (11%) respectively of the 277,104 consumer accounts registered with ARMS Ltd. as at end July 2011.

According to the latest on-line data available, power generated in Malta in 2005/06 amounted to 2,260,762,000 kilowatt hours[1]. Electrical energy consumption was more or less equally divided between domestic, commercial and industrial consumers who accounted for 36, 32 and 30 per cent respectively of electricity consumed[2]. Billed water consumption in 2007 amounted to 15.6 million cubic meters. The main consumer was the domestic sector, using 72 per cent of total billed water, followed by the industry sector, utilising 8 per cent[3].

In 2010, ARMS Ltd. invoiced revenue amounting to over €306 million and €63 million on behalf of Enemalta Corporation and the Water Services Corporation respectively.

The IUBS Contract with regard to Billing

The Integrated Utilities Business System (IUBS) contract entered into between the Corporations with IBM provided, amongst other modules, for the implementation of a Utility Billing and Customer Relationship Management (CRM) module. CRM is a business strategic tool that supports the retail operations of an organisation. It involves using technology to organise, automate and synchronise core business processes within the meter-to-cash cycle and the customer care and relationship management and their respective interfaces including billing services, debt management and cash collection.

The SAP customer relationship management software is used for the processing of customer transactions. All hardware equipment required was purchased under the IUBS contract while SAP licences were procured on a perpetual basis. As part of the IUBS contract, the Utilities procured maintenance and support services for a period of four years, commencing at the end of the warranty period of each deliverable. It covers the maintenance and development of the application functionality and customisations. Unless renewed, however, the Utilities will not have any SAP support or application

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[1] Of these kilowatt hours generated, 130,801,000 and 276,943,000 were 'Used in Station' and 'Lost in Distribution and Unaccounted for' respectively.
[2] The remaining 2 per cent were expended on street lighting.
[3] The fisheries and forestry sectors used 2 per cent of total billed water in 2007. The remaining was attributed as 'Other' or 'Unclassified'.

upgrade beyond the 4-year maintenance and support contract which they have with IBM, acting as a procurement agent for the SAP licences and SAP maintenance services. The contract for the CRM and Billing Solution was signed on 29 December 2008.

In January 2010, following a data migration process carried out by IBM in conjunction with MITA, ARMS Ltd. started issuing bills using SAP software. A detailed review of the execution of the CRM-Billing components of the IUBS contract and the data migration exercise was carried out by NAO's ICT adviser. Details are at Chapter 4 of this Report.

2. The Meter Reading and Billing Processes

The Meter Reading Cycle

An annual master schedule of meter readings is prepared in advance by the Head of the Meter Reading Section. Meter readings for residential, domestic and small commercial customers (i.e. light consumers) are carried out on a bi-annual basis[4]. Heavy consumers (industry, large commercial, hotels and government departments) are generally read more often on a monthly or bi-monthly basis. Farms are read every three months.

The annual meter reading schedule is posted to SAP at the beginning of the year. The schedule of meter reads is divided into routes and there are 750 routes planned logistically in groups of 300 to 400 accounts per route. The schedule comprises 20-day read cycles for each route with the final five days reserved for customer submitted meter readings. A route is generally read over two to four days. Heavy consumers are on separate routes and during a regular work day a meter reader reads some 25 accounts related to heavy consumers.

New accounts are initially placed in a particular route - route 999. These accounts are not read, or billed, until they are allocated to an appropriate 'regular' route. As at end July 2011, there were some 1,300 accounts in route 999.

Hand-held terminals are used for meter reading purposes as these coordinate the meter reading route to be followed and also record the meter readings taken. Hand-held terminals interface with the SAP application in order to both download account details and to subsequently upload meter readings. Account details for meter readings are uploaded to the hand-held terminals prior to each scheduled reading route. Meter readers then key in the water and electricity readings into the terminal for each meter read. These are later uploaded to SAP. Customers who are not at home at the time of meter reading can submit their consumption readings to ARMS Ltd. within the next five working days.

No significant changes to the meter reading process have been made since the responsibility for meter reading was passed on to ARMS Ltd.

It is noted that, that since the changeover to SAP, hand-held terminals do not retain a record of previous consumption readings. With the 'old' system, a warning was available to meter readers indicating whether a reading was 'Normal', 'Low' or 'High' when compared to previous readings. According to ARMS management, in the 'old' system, previous readings were based on actual consumption while with the new SAP system these also include estimated readings. This validation is, therefore, no longer reliable. However, according to ARMS Ltd., this validation exists in SAP at a later stage of the billing cycle.

In its November 2010 technical review, the Malta Resources Authority (MRA) reported that *"there may be significant errors arising from incorrect inputting of meter readings"*. However, the Authority could not ascertain whether such errors were attributable to normal human error or whether such errors were the result of the lack of validation (previously available on the hand-held terminals) since the change to SAP. When requested to quantify the number of customer complaints made relating to wrong meter (consumption) readings, ARMS Ltd. stated that such data is not available as no distinction is made between 'complaints' and 'customer contacts'. Moreover, complaints and/or queries made in connection with electricity and/or water consumption have not always been classified under one specific category.

A review of concerns in connection with hand-held terminals and issues with metered consumption validations was undertaken by NAO's technical adviser and is reported on in Chapter 4 of this Report.

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[4] According to the master billing schedule, bills for light consumers are to be submitted every two months. However, over a 6-month period, one bill is based on actual 'read' consumption and two are based on system-generated interim estimates.

The Billing and Invoicing Processes

A master billing schedule, coordinated with the meter reading schedule, is prepared one year in advance. Similar to the meter reading schedule, the master billing schedule is divided into routes. Routes are read by meterreaders and then billed. The billing cycle for residential, domestic and small commercial customers provides for one actual reading and two estimated bills over a 6-month period, replicated to cover a whole year. Estimated bills are issued when actual readings have not been taken. Bills for light consumers are issued staggered every two months. Larger non-residential consumers are generally billed on actual consumption on a monthly or bi-monthly basis. Farmhouses are billed on actual consumption every three months.

SAP validates the issue of bills on various levels prior to releasing, including meter readings, bill calculation and invoice[5] values and format. Any failure in validation will lock the bill from further processing. Billing Officers, each responsible for a number of reading routes, review locks on a case-by-case basis prior to release to the next step of the process. They also make the necessary adjustments for meter changes and stopped meters. The system will estimate consumption for accounts without meter readings and Billing Officers close the billing orders. Bills are then processed and invoices printed.

Currently, all invoices based on actual meter readings pass through a manual quality control where these are vided and checked for any apparent issues related to amounts or invoice display. Invoices are then passed through the auto-mailer and posted on the following day. Invoices which are not mailed within three days from invoice date are reversed, re-issued and re-printed. Invoices for heavy consumers are individually reviewed by the relative Account Administrator before these are issued.

There were no key changes to the billing cycle and the way that estimated bills are calculated since the takeover by ARMS Ltd. Billing is still dependent on a manual meter reading process and the issue of one actual and two interim estimates every six months.

Estimated Bills

The billing cycle for residential, domestic and small commercial customers provides for one actual bill and two interim estimates over a 6-month period. Scheduled estimated bills are automatically calculated based on the consumer's actual consumption during the same period the previous year. If this is not available, consumption is determined according to similar consumer schemes. Estimated bills are also submitted when scheduled actual consumption readings are not available. In such instances however, the system will reverse the previous two interim estimates and a revised 6-month estimate is calculated. The Electricity Supply Regulations (Subsidiary Legislation 423.01) and Water Supply Regulations (Subsidiary Legislation 423.03) sanction the submission of bills based on estimates.

According to ARMS management, the process whereby estimates are based on a client's consumption recorded at the same time during the previous year enables seasonal aspects to be factored in. Despite this, however, one of the complaints often cited by consumers is the high consumption - and consequent tariffs - in estimated bills. Energy-conscious customers who reduced their consumption in reaction to the increasing tariffs found that this was not reflected in the estimated bills generated by the billing system, as this still projected an increase based on the previous year's consumption. ARMS management acknowledges that significant variances in the pattern of consumption will result in considerable over or under estimations. According to ARMS Ltd., this has led to a consumer perception that estimates are being made higher on purpose to increase the Company's cash flow.

To partly address the problem of high estimations, whether perceived or otherwise, ARMS Ltd. maintains that customers are advised that they are not obliged to pay the full estimated bill but can defer payment until the next actual bill is received. Customers who dispute high consumption and subsequent charges in estimated bills can make a part payment on their account which would then be deducted from their next bill based on actual readings. According to ARMS Ltd., some consumers opt to pay a fraction of the estimated bill based on their assessment of their consumption whilst others prefer to pay only the service charge until an actual bill is received.

On its part, ARMS Ltd. stated that it has reviewed the issue of the high estimates since the problem was identified after 'go-live' and the following actions were taken to find a veritable solution to the issue:

[5] An invoice is made up of a number of different bills which include consumption of electricity, consumption of water, service charge, other charges, etc.

a. *re-extraction of average consumption per account from old legacy system;*

b. *once the SAP system was populated with actual meter readings it was configured to calculate consumption estimates based on seasonal variations, i.e. estimates based on the same period of the previous year. This was implemented at end November 2010 and, since then, estimates have been much more accurate provided that previous actual readings are available and that the consumer has not drastically changed his consumption pattern;*

c. *ARMS Ltd. is also reviewing the design and implementation of another development whereby the consumer's estimate would be adjusted by the variance in his last actual consumption when compared to the same time last year or by an adjusting factor which would be posted manually;*

d. *increase in the number of accounts billed based on smart readings for both water and electricity.*

To further dissipate consumers' perception of deliberate high estimated bills, ARMS Ltd. recommended to Government that it pays 6 per cent interest on estimated bills (i.e. on the difference between actual and estimate) which had been settled by consumers.

The Payment of Interest

In terms of the Electricity Supply Regulations and the Water Supply Regulations (Articles S66 (3) and S30 respectively) payment of interest is due by consumers on actual unpaid electricity and water bills beyond the authorised credit period. Interest is not charged on provisional estimated bills issued bi-monthly for residential and small non-residential consumers. However, 6 per cent interest is levied on the six-monthly actual bills if these are not settled within the 45-day[6] credit period. If a scheduled actual meter reading is not taken as a consumer failed to provide access to the meter reader on two subsequent days, and the consumer also failed to notify ARMS Ltd. of the readings within 5 days of the meter reader's visit, then the six-monthly bill is issued on an estimate. If this bill remains unpaid then interest will be charged even though it was issued on an estimate. According to ARMS management, the company has *"obtained legal advice that the interest charged in this scenario is legal provided that the consumer is notified of their attempt to obtain the meter readings and that any interest on contested bills would have to be adjusted in accordance with the final outcome of the dispute"*.

Six per cent interest is also incurred on credit agreements entered into by customers with ARMS Ltd. According to ARMS management, interest is charged on amounts which are overdue and based on actual readings where possible. Credit agreements for high bills based on actual readings which are not disputed are processed normally. If the outstanding amounts are based on high estimated readings which are not justified based on previous actual consumption, a new actual reading is taken to revise the amount due before proceeding with the credit agreement.

On the other hand, ARMS Ltd. had recommended that Government pay 6 per cent interest on the difference between paid overestimated and subsequent actual bills. This was announced by the Minister responsible for finance during a parliamentary debate on ARMS Ltd. in November 2010 and came into effect as from 1 April 2011. Since the introduction of higher tariffs, customers became more concerned about bills and this had significantly increased their contacts with the Company. According to ARMS management, the introduction of 6 per cent interest in favour of the customer on overestimated consumption when compared to actual consumption in subsequent bills was meant to establish a sense of accountability and equality between ARMS Ltd. and its clients. It also decreased customers' perception that ARMS Ltd. was inflating estimated bills on purpose for better cash flow. By end August 2011, ARMS Ltd. had paid €803 in respect of such interest.

Viding

Viding is a quality control process whereby invoices based on actual readings are manually checked prior to mailing. These are examined for any apparent issues related to amounts and invoice display.

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[6] According to the Electricity Supply Regulations, interest *"shall be charged to consumers on all amounts due irrespective of the period to which the bill refers if the claim is not settled within forty-five days of the date specified in the bill: Provided that for all amounts still due at the expiry of the aforementioned forty-five days interest will only be charged for the final thirty days of that period and for each additional thirty days, or part thereof", i.e. interest on late payments are calculated as from 15 days after date of invoice*.

Up to September 2010, 100 per cent viding of all invoices based on actual consumption was carried out. Thereafter, ARMS management decided to reduce manual checking to 10 per cent since errors detected through viding (which initially stood at around 3 per cent) had dropped to only 0.3 per cent of invoices checked. Data submitted by ARMS Ltd. indicates that, originally, the two main reasons for invoice rejection were wrong computation of interest and zero consumption. However, at the time the decision to reduce viding was taken, errors were mainly related to incomplete addresses and invoice format.

According to ARMS management, the SAP billing system incorporates enough validations that 100 per cent viding can be replaced by sampling. Ultimately, management's objective is to remove viding which would only be resorted to when new developments or major changes are implemented, and then only for a short period in order to revalidate the changes which would have already been tested.

Notwithstanding the above, 100 per cent viding was re-introduced in early November 2010 during a review which was at the time being carried out by the Malta Resources Authority (MRA). This was an internal decision taken after an initial meeting with the Authority. Formal statistics on errors detected through viding have not been kept since its re-introduction. However, according to ARMS management, *"as observed, errors have remained minimal. Moreover, currently viding is mostly used to group invoices of accounts where multiple bills have been issued due to clearing of locks"*.

Reversals

The process adopted by ARMS Ltd. in the case of billing errors is to reverse incorrect invoices. Once processed, invoices cannot be amended and invoices which, for whatever reason, have to be withheld will have to be reversed and re-issued.

There are several reasons which necessitate the reversal of an invoice. These include:

a. incorrect meter reading/invoice date;
b. incorrect number of persons indicated on invoice;
c. incorrect rate/tariff applied;
d. interchange of meters;
e. meter change/removal;
f. change of tenant;
g. bills not sent to customers within three days of invoice date;
h. wrong number of digits;
i. wrong estimation of consumption, and
j. wrong punching.

Data submitted by ARMS Ltd. indicates that during the period January 2010-August 2011, of the nearly two million invoices issued, 146,607 (7%) were reversed. The three main reasons indicated for the reversal of invoices were wrong estimations (73,721), the reversal of bills not submitted to customers (35,350) and default (4,468).

Asked for comments, ARMS management stated that wrong estimations ensue when a customer does not grant access to a meter reader and subsequently fails to submit the readings within the stipulated 5-day time window, resulting in the bill being issued based on an estimate. After receiving the bill, the customer contacts ARMS Ltd. and provides the current meter readings so that the estimated bill is revised on the actual reading.[7] It is to be noted that unless actual readings are provided, the customer does not benefit from the eco-reduction had such bills not been revised. This reason for the reversal of a bill is not necessarily indicative that the estimated consumption was incorrect but more that it was not an actual reading.

Reversals due to bills not sent to customers arise when, for a number of reasons, bills are delayed from being posted and are then reversed in order to ensure that the invoice date is current. This ensures that the customer benefits from the full 15 days credit period shown on the bill. Possible reasons for delays include:

a. equipment faults in printers or auto mailers;
b. possible issues noted in viding which are clarified prior to posting bills, and
c. upload of meter reading errors due to electricity cuts.

[7] This process is provided to customers at a charge of €4.66.

According to ARMS Ltd., the reasons for reversals listed as 'default' arise when:

a. the automatic notification for meter change fails since invoices would have already been issued after the meter change date. In order to adjust the invoices issued, the invoices after meter change date are reversed, meter change details posted and invoices re-issued with new meter details and readings, and
b. in cases where account move-in date does not agree with installation date. Again bills are reversed, dates are amended to agree and bills are re-issued.

Asked what strategic follow-up action is taken to avoid the repetition of errors once these are identified, ARMS management stated that when an error affecting numerous accounts is identified, the following SoP applies in order to avoid the repetition of the same error:

a. identify amounts of incorrect bills issued and to whom;
b. lock all such accounts to ensure no further mistaken bills issued;
c. brief CEO on extent of issue and possible resultant impact;
d. write to all clients to whom incorrect bill was issued advising them of problem and that the necessary adjustments will be made as soon as the necessary checks are finalised;
e. IBM to be alerted to establish fix and to provide a Root Cause Analysis;
f. billing back office to prioritise the revision/validations of the issued bills and commence affecting the necessary adjustments in the system. Unlock accounts progressively once adjustments made;
g. front office/call centre/customer care to be directed as to the corrective action to be taken in respect of customers who call in relation to said bill.

It is noted that the average rate of reversals since the introduction of SAP-generated invoices is 7 per cent. When asked to comment on this incidence, ARMS management reiterated that *"it is difficult to state whether this is a high or a low rate. It is generated by the requirements of the system"*.

Locked Accounts

A number of system-generated validation locks have been implemented in the billing run process which validate the issue of bills on multiple levels and locks the process of a specific transaction/activity if it fails to meet pre-established criteria and thresholds. The system has validations during three different processes - meter readings, billing and invoicing. Among others, the system automatically flags high or abnormal consumption meter readings, invoices whose total is below or above pre-determined amounts and invoice values and format. Any failure will lock the invoice from being issued and will also lock the issue of subsequent invoices due on that particular account.

According to ARMS Ltd., the following are the five main reasons why the system would lock a particular transaction during the normal batch processing of bills:

1. Reading locks:

a. Meter recommencement
A reading gets locked when a recommencement of the meter is detected (new reading lower than the previous actual reading). This could indicate that a meter change has taken place but details of the new meter have not been inputted.

b. Previous high reading
Another reason for this lock may be as the previous 'estimated' reading is higher than the latest actual reading entered in the system. In this case, the customer has already paid for a higher consumption than the real one, up to the latest actual reading.

2. Limits:

A reading gets locked due to a considerable higher actual reading than the one expected by the system based on previous average consumption.

3. <u>Previous reading locked:</u>

New reading entry gets locked because previous reading is already locked for any of the reasons mentioned above.

4. <u>Bills locked:</u>

Bills are locked when the system tries to invoice a consumer for two different consumption periods. This usually occurs when two or more separate readings have been checked, corrected and released. The issue would be corrected by the Billing Officer issuing the earlier bill first and then the second one, however both bills cannot be issued simultaneously.

5. <u>Invoice locked:</u>

Invoices with totals (€) for the consumption charged beyond values configured in the system would be locked until the Billing Officer reviews, corrects the bill if necessary and then releases.

When a transaction is automatically locked, it has to be reviewed by Billing Officers to be released to the next phase in the process. When a meter reading is flagged for high or abnormal consumption, the Billing Officer responsible for the account reviews the meter reading and consumption to assess whether the reading is valid when compared to account history of readings and consumption. If the consumption is justified, the reading is unlocked by the Billing Officer and the process to issue the invoice continues. If the consumption is not justified the billing system is prompted to calculate an estimate instead. In some cases another meter reading may be taken to confirm or otherwise the original reading. Accounts which, for whatever reason, are locked or which require data reconfiguration, cannot be billed until locks and/or other issues have been resolved.

Bottlenecks created through validation locks have resulted in customers not being billed according to planned frequencies, generating considerable customer dissatisfaction. NAO requested ARMS Ltd. to submit detailed information regarding the number of locks[8]. A review of data submitted indicates that, by end 2010, the number of locks had reached nearly 70,000. Table 1 below refers[9].

Table 1: Average Monthly Number of Locks - July 2010 to July 2011

Month	Average Monthly Number of Locks
July 2010	49,604
August 2010	52,992
September 2010	46,369
October 2010	51,713
November 2010	61,794
December 2010	67,762
January 2011	53,573
February 2011	41,028
March 2011	37,996
April 2011	38,090
May 2011	42,861
June 2011	48,156
July 2011	51,193

Source: ARMS Ltd. document 'Billing Statistics'

In December 2010, IBM formulated a Backlog Release Strategy to address the accumulation of reading locks which had increased by 139 per cent since a June 2010 assessment. It is however noted that, although the number of reading locks decreased early on in 2011, these have been on the rise since April 2011 and have never reached the targeted <1,100

8 Several locks may be in respect of the same account.

9 Monthly analysis of locks prior to July 2010 was not available.

maximum level of reading locks declared in the Backlog Release Strategy. Data submitted by ARMS Ltd. indicates that, by the first week in August 2011, there were in total 51,607 locks. Despite the number of locks, several may in fact be in respect of the same consumer account.

The National Audit Office also requested information regarding the age of locked accounts, i.e. period since when an account was initially locked. ARMS management submitted the following data as at end March 2011:

Table 2: Age of accounts currently locked

Total Accounts currently locked	**01/02/2011**	**16/02/2011**	**28/02/2011**	**28/03/2011**
	22,625	**15,827**	**14,731**	**9,603**
Age of the Accounts currently locked*	01/02/2011	16/02/2011	28/02/2011	
2009-Q3	6	6	6	
2009-Q4	152	116	110	
2010-Q1	1,336	1,104	867	
2010-Q2	2,511	1,592	1,163	
2010-Q3	4,270	2,999	2,533	
2010-Q4	11,234	6,949	5,129	
2011-Q1	3,116	3,061	4,923	
	22,625	**15,827**	**14,731**	**9,603**

**When an account has been blocked for the first time*

Source: Document C2_App ref 165 Age of locked accounts

Automated system locks that stop bills from being issued have a direct impact on the frequency of bills received by customers. With a significant number of accounts still not being billed notwithstanding the efforts being made, the National Audit Office feels that insufficient resources are being allocated to resolve this issue. ARMS management is, nonetheless, satisfied with the progress registered in this regard. Given that locked accounts affect both the billing of customers and the cash flow of ARMS Ltd., and hence of EMC and WSC, this Office is of the opinion that more emphasis to the release of locked accounts needs be given.

3. Billing Activity, Frequencies and Intervals

Billing Activity

ARMS Ltd. aims to issue approximately 7,000 invoices per day. Data submitted indicates the average number of invoices issued daily for the months of January to June 2011 as follows:

Table 3: Average Number of Invoices Issued

Calendar month/year	**01.2011**	**02.2011**	**03.2011**	**04.2011**	**05.2011**	**06.2011**	**Overall Result**
Total Number of Invoices	135,224	112,033	158,020	137,056	137,154	85,042	764,529
Number of Reversals	8,718	9,112	13,737	10,865	10,244	11,347	64,023
Total Net Invoices	126,506	102,921	144,283	126,191	126,910	73,695	700,506
Average Invoices per Day	6,024	5,417	6,558	6,310	5,769	3,685	

Source: ARMS Ltd. - Key Performance Indicators - end June 2011

According to ARMS management, although the projected amount of 7,000 invoices per day has not yet been attained, steady progress has been registered in this regard. Asked for the reasons for the fluctuations in the number of monthly invoices issued, management stated that where there are significant drops this was *"due to unavailability of stationery, auto mailer, resources on leave, power cuts or seasonal factors"*.

The National Audit Office sought to independently verify the billing activity of domestic, residential and domestic garages consumer accounts. To undertake this exercise, a list of domestic garages (DGs), domestic residentials (DRs) and residentials (RRs) was extracted from ARMS' database. The data file was suitably filtered in order to ensure that accounts opened more recently than 12 months prior to extraction date (19 July 2011) were deleted. The filtered population was separated into three sub-populations, per category. Each sub-population was then grouped according to locality. As framework, the Local Councils setup, with the 68-council structure, was utilised. In all, these gave 142,289 RRs, 10,750 DGs and 71,443 DRs.

A sample size of 1 per cent was deemed to be (a) manageable for the purpose of the investigation and (b) sufficient for the purpose of establishing, through analysis, ARMS' billing activity for the three different categories. The extracted data was further cleaned, with the removal of reversal and adjustment transactions, the regrouping of activity markers and the cleansing of multiple transactions within a short period which were indicative of corrective action rather than fresh billing activity. This brought record (transaction) size to 6,503 RRs, 2,935 DRs and 510 DGs.

Results indicated that, for the 12-month period under review (i.e. 1 July 2010 to 30 June 2011), ARMS' billing activity (for the sample chosen), in the form of invoices issued, for the categories RR, DR and DG was as follows:

Table 4: Billing Activity - RR, DR and DG - 1 July 2010/30 June 2011

Category	Accounts	Actual Activity	Projected Activity	Shortfall	Percentage Actual of Projected
RRs	1,448	6,503	8,688	2,185	74.9%
DRs	747	2,935	4,482	1,547	65.5%
DGs	141	510	846	336	60.3%
Overall	**2,336**	**9,948**	**14,016**	**4,068**	**71.0%**

The period in question was then divided into two 6 month periods, namely 1 July 2010 to 31 December 2010 (first period) and 1 January 2011 to 30 June 2011 (second period). This split was introduced to provide an indicator of the trend of ARMS' billing activity during the period covered by the sample:

Table 5: Billing Activity - RR, DR and DG - 1 July/31 December 2010; 1 January/30 June 2011

Category	Actual Activity Jul-Dec 2010	Actual Activity Jan-Jun 2011	Projected Activity per 6 month period	Shortfall Jul-Dec 2010	Shortfall Jan-Jun 2011	Percentage Actual of Projected Jul-Dec 2010	Percentage Actual of Projected Jan-Jun 2011	Percentage Change between 1st and 2nd period*
RRs	3,041	3,462	4,344	1,303	882	70.0%	79.7%	13.8%
DRs	1,354	1,581	2,241	887	660	60.4%	70.5%	16.8%
DGs	223	287	423	200	136	52.7%	67.8%	28.7%
Overall	**4,618**	**5,330**	**7,008**	**2,390**	**1,678**	**65.9%**	**76.1%**	**15.4%**

* The difference between 79.7% and 70.0% is a 9.7 percentage point increase. However, the actual percentage increase is 13.8% (9.7% of 70.0%)

The projected-to-actual ratio tables as per above for the entire 12-month period were further analysed by geographical regions, namely Northern, Northern Harbour, South Eastern, Southern Harbour, Western and Gozo. Collectively, results for the categories reviewed were as follows:

Table 6: Billing Activity - RR, DR and DG - 1 July 2010 - 30 June 2011 by Geographical Regions

Geographical Region	Accounts	Actual Activity	Projected Activity	Shortfall	Percentage Actual of Projected
Northern	422	1,840	2,532	692	72.7%
Northern Harbour	688	2,925	4,128	1,203	70.9%
South Eastern	317	1,494	1,902	408	78.5%
Southern Harbour	403	1,616	2,418	802	66.8%
Western	263	1,164	1,578	414	73.8%
Gozo	243	909	1,458	549	62.3%

Split into two 6-month periods, the projected-to-actual overall billing activity for the categories under review per geographical regions was as follows:

Table 7: Billing Activity - RR, DR and DG - 1 July/31 December 2010; 1 January/30 June 2011 by Geographical Regions

Geo-graphical Region	Actual Activity Jul-Dec 2010	Actual Activity Jan-Jun 2011	Projected Activity per 6 month period	Shortfall Jul-Dec 2010	Shortfall Jan-Jun 2011	Percentage Actual of Projected Jul-Dec 2010	Percentage Actual of Projected Jan-Jun 2011	Percentage Change between 1st and 2nd period
Northern	837	1,003	1,266	429	263	66.1%	79.2%	19.8%
Northern Harbour	1,288	1,637	2,064	776	427	62.4%	79.3%	27.1%
South Eastern	768	726	951	183	225	80.8%	76.3%	-5.5%
Southern Harbour	778	838	1,209	431	371	64.4%	69.3%	7.7%
Western	544	620	789	245	169	68.9%	78.6%	14.0%
Gozo	403	506	729	326	223	55.3%	69.4%	25.6%

Overall, this exercise indicates that, with respect to the categories under review, for ARMS Ltd. to achieve the projected six invoices over a 12-month period 14,016 invoices had to be issued. Of these 9,948 invoices were actually sent out. It is noted that, with the exception of the South Eastern region, consistent improvement was registered between the first and the subsequent 6-month period although there were noticeable differences between geographical regions. More detailed analysis of ARMS' billing activity for the categories and period under review are at Appendix 7 of the Report.

Frequency of Billing

According to ARMS management, as at February 2011, water and electricity bills were being issued at regular intervals for the majority of accounts. Requested to submit data on the distribution of invoices issued over the past year, ARMS management submitted the following information for residential and non-residential accounts[10] (up to June 2011):

[10] Residential Accounts are accounts in respect of the domestic (residential), residence (residential) and domestic garages consumer schemes. Non-Residential Accounts are in respect of accounts in all other consumer schemes.

Table 8: Billing - Distribution of Number of Invoices Issued for one Year for Residential and Non-Residential Accounts

Number of Invoices	Residential Accounts			Non-Residential Accounts		
	Residential No. of Accounts (end June 2011)	% of Residential Accounts (end June 2011)	% of Residential Accounts (end January 2011)	Non-Residential No. of Accounts (end June 2011)	% of Non-Residential Accounts (end June 2011)	% of Non-Residential Accounts (end January 2011)
0	3,567	1.65%	8.85%	2,218	5.17%	2.17%
1	5,324	2.47%	5.63%	1,296	3.02%	9.78%
2	7,047	3.27%	7.79%	1,729	4.03%	10.88%
3	14,118	6.54%	29.91%	3,459	8.07%	39.99%
4	44,495	20.62%	27.48%	10,344	24.12%	23.40%
5	78,775	36.50%	17.62%	12,620	29.43%	11.94%
6	44,926	20.82%	2.45%	7,408	17.28%	1.11%
7	14,139	6.55%	0.18%	2,294	5.35%	0.16%
8	2,551	1.18%	0.04%	1,039	2.42%	0.22%
9	572	0.26%	0.02%	191	0.45%	0.20%
10	158	0.07%	0.01%	24	0.06%	0.13%
11	87	0.04%	0.01%	28	0.06%	0.01%
12+	67	0.03%	0.01%	230	0.54%	0.01%
Result	**215,826**	**100.00%**	**100.00%**	**42,880**	**100.00%**	**100.00%**
3-	**30,056**	**13.93%**	**43.56%**	**8,702**	**20.29%**	**62.82%**
4+	**185,770**	**86.07%**	**56.44%**	**34,178**	**79.71%**	**37.1 8%**

Source: Key Performance Indicators - June 2011

The above Table indicates that the majority of residential (86.07%) and non-residential (79.71%) accounts were billed four or more times during the twelve months up to June 2011. On the other hand there were 30,056 (13.93%) residential and 8,702 (20.29%) non-residential accounts which had been billed on three or less instances during the twelve months prior to June 2011. It is however noted that significant improvement was registered since January 2011 in the number of yearly bills issued to customers.

The National Audit Office also sought to independently determine the frequency of billing, at account level, for each of the three categories under review and for all categories grouped as one data set. Results were, in each case, compiled for (a) the first 6-month period under review, (b) the second-6-month period and (c) the entire 12-month period.

This exercise indicated that, between 1 July 2010 and 30 June 2011, the 2,336 accounts reviewed were billed as follows:

Table 9: Frequency of Billing - RR, DR and DG - 1 July 2010/30 June 2011

Number of Bills Submitted	RRs	DRs	DGs	All Accounts	%
0	36	39	9	84	4%
1	69	67	22	158	7%
2	51	60	9	120	5%
3	113	76	17	206	9%
4	344	141	28	513	22%
5	473	251	35	759	32%
6	288	93	15	396	17%
7	72	19	6	97	4%
8	1	0	0	1	0%
9	0	0	0	0	0%
10	0	1	0	1	0%
11	0	0	0	0	0%
12	1	0	0	1	0%
	1,448	**747**	**141**	**2,336**	

The above shows that 71 per cent of RR, DR and DG accounts sampled were billed between four and six times during the twelve months between July 2010 and June 2011. Four per cent had never been billed and negligible amounts were billed more than seven times during the period under review.

Detailed analysis for (a) the first 6-month period and (b) the second 6-month period under review, computed for the three categories individually, are at Appendix 7 of the Report.

Billing Intervals

Although the frequency of bills sent out by ARMS Ltd. gives an indication of billing activity, it does not determine the period since last billing activity or the intervening period between two consecutive bills. To this end, NAO first sought to determine the number of days from last billing activity to 30 June 2011. In each case, ranges of (number of) days (from 30 June 2011 to date of last bill) were utilised for reporting purposes: 0-61 days (signifying the two-month inter-bill period stipulated by ARMS Ltd.); 62-122 days (approximately 2-4 months); 123-183 days (approximately 4-6 months); 184 + days (approximately 6 months and over); and never billed since 1 July 2010. Separate results were computed for the three categories individually, as one set, and as one set divided by geographical regions, as follows:

Table 10: Days since Last Bill

Days since last bill*	RRs	DRs	DGs	All Accounts	%
0-61	1,043	467	79	1,589	68%
62-122	253	143	25	421	18%
123-183	37	36	17	90	4%
184 +	79	62	11	152	7%
n/a since 1.07.2010	36	39	9	84	4%
	1,448	**747**	**141**	**2,336**	

* as at 30 June 2011

Table 11: Days since Last Bill by Geographical Regions

Geographical Region	Days since Last Bill*				
	0-61	62-122	123-183	184+	n/a since 1.07.2010
Northern	265	117	5	22	13
Northern Harbour	547	49	42	27	23
South Eastern	235	31	13	22	16
Southern Harbour	241	107	12	31	12
Western	162	64	6	20	11
Gozo	139	53	12	30	9
	1,589	**421**	**90**	**152**	**84**

** as at 30 June 2011*

The above indicates that the majority (68%) of sampled RR, DR and DG accounts were billed within 61 days from submission of previous bill. Overall, 86 per cent of sampled accounts were billed within four months from date of previous bill; however 4 per cent had not been billed at all during the last twelve months up to 30 June 2011.

Detailed analysis of 'days since last bill' are at Appendix 7 of the Report.

This Office also sought to determine the inter-bill period, that is the number of days elapsed between two consecutive bills. Accounts having at least two bills were taken into consideration. All other accounts were ignored for the purpose of this exercise. Data was again grouped into 0-61; 62-122; 123-183; and 184+ days and by geographical regions, as follows:

Table 12: Days between Bills

Days between Bills*	RRs	DRs	DGs	All Accounts	%
0-61	2,207	1,031	176	3,414	44%
62-122	2,473	1,024	169	3,666	48%
123-183	384	148	29	561	7%
184 +	28	23	4	55	1%
	5,092	**2,226**	**378**	**7,696**	

**reporting on accounts with at least two bills*

Table 13: Days between Bills by Geographical Regions

Geographical Region	Days between Bills*			
	0-61	**62-122**	**123-183**	**184+**
Northern	636	634	155	6
Northern Harbour	957	1,188	107	8
South Eastern	699	424	62	8
Southern Harbour	407	648	158	12
Western	418	443	45	6
Gozo	297	329	34	15
	3,414	**3,666**	**561**	**55**

**reporting on accounts with at least two bills*

Detailed analysis of the 'inter-bill period by category' are at Appendix 7 of the Report.

The National Audit Office also sought to determine compliance with ARMS' declared 6-month billing cycle made up of two 'Estimate' followed by one 'Actual' bill. This implies a 'base unit' cycle of three bills. Therefore, data considered for this test excluded all accounts with less than three bills posted. The data was interrogated to determine whether the last of any three consecutive bills was an 'Actual' or not (xxA was considered to be in compliance with or surpassing ARMS' policy of an EEA pattern - where 'x' can be either an estimate or an actual).

Table 14: Billing Activity - xxA

	RRs	DRs	DGs	All Accounts*
Actual activity	1,326	442	60	1,828
Theoretical maximum permissible	1,650	692	122	2,464

**reporting on accounts with at least three bills*

The above Table indicates that, in 74 per cent of billing activity for the categories under review, the estimate/estimate/actual cycle is being followed or surpassed.

Details of the above NAO exercise are comprehensively given at Appendix 7 of this Report.

In conclusion, the National Audit Office notes that, despite evident improvements mainly in the billing activity, there were no key changes to the billing cycle and the way that bills are calculated since the takeover by ARMS Ltd. Billing is still dependent on manual meter reading processes to issue one actual bill every six months and two interim estimates. Significant improvements will only be achieved through the automated metering project which should result in timely bills based on actual consumption without the need for manual meter reading. Moreover, this Office is of the opinion that ARMS management can make better use of available data to evaluate results obtained in a more effective manner.

4. Key Performance Indicators and Revenue Assurance

Key Performance Indicators

Key Performance Indicators (KPIs) can undoubtedly contribute to informed management decisions and, over time, provide an overview of an organisation's performance. During 2011, ARMS Ltd. established a number of KPIs to measure a number of tasks/functions mainly related to customer services and billing.

With regard to customer services, ARMS Ltd. presently assesses customer waiting and service times and the number of calls lost, abandoned, in mailbox and answered by the Company's call centre. KPIs currently employed in connection with ARMS' billing function are:

a. Average number of invoices issued
b. Distribution of number of invoices issued per year for residential accounts
c. Distribution of number of invoices issued per year for non-residential accounts
d. Sales
e. Cash Collection
f. Debtor Management.

Although the introduction of KPIs is a positive initiative taken by ARMS Ltd., it is felt that these are not thoroughly indicative of the company's holistic operating scenario. The categories/functions addressed in the current KPIs are generic and limit the Company's ability to analyse in depth prevailing behaviours and trends. Current billing-related KPIs fail to, for example, address issues such as locked accounts, compliance with the estimate-estimate-actual invoice pattern, dates between invoices, accounts not invoiced within last two months, reversal of invoices, debtor ratios, income to 'sales' ratio and process costs. Current indicators also fall short of the KPIs set out in the document 'Proposed Organisational Design' drawn up in July 2009 by the ARMS Ltd./IBM Change Management Team which stated that *"KPIs for ARMS Ltd are to be designed on five Value Drivers - (a) revenue growth and contribution segmentation; (b) employee satisfaction; (c) marginal improvements; (d) capital efficiency; and (e) service quality and customer satisfaction - which would provide the Shareholder and management with the necessary intelligence to gauge the holistic performance of ARMS Ltd"*. The document further defined specific KPIs for the billing and collection processes which included:

Table 15: Key Performance Indicators

Function	Key Performance Indicator
Collection of meter readings	% unread scheduled points
	% of units lost
Bill production	% bills issued on date
	Average cost per bill
Payment collection	Number of bill adjustments
	Number of bill disputes
	% billing errors
	Revenue % by payment method
Dunning	Outstanding billing revenue
	% bad debts
	Debtors turnover ratio

Source: Document - ARMS Ltd. - Proposed Organisational Design - July 2009

ARMS Ltd. may also consider the introduction of other KPIs with regard to billing, debt management and cash collection to include:

a. reduction of debtor accounts overdrawn
b. net bad debt target
c. percentage of bills paid on-line to total active accounts (to increase)
d. number of bills paid by direct debit (to increase)
e. average lead time for issue of first bill to new customer from service installation (to next billing cycle)
f. unbilled accounts (decrease in) of total billing cycle.

The CRM module can provide the key platform through which ARMS Ltd. can effectively manage the day to day interaction with customers in an effort to maximise customer satisfaction whilst at the same time ensuring that revenue generated is reliably tracked, recorded and collected. Moreover, the integration of front-end, back-end and analysis tools is especially important as this will guarantee that all processes are continuously monitored and can be used as the basis for strategic decisions. This Office feels that, given the easily accessible data available through the CRM module, ARMS Ltd. can establish more relevant KPIs which can better measure the performance of the Company.

During the course of this investigation, the National Audit Office carried out basic tests on billing variables. This was done to provide this Office with the comfort of having billing-related indicators created from source data. However, it is not the scope of an auditor to carry out such work. This should be the prerogative of management, and an auditor should limit the scope of an audit to evaluating the validity of such work and how much management is making good use of the results obtained.

ARMS Ltd. should aim for enhanced customer service, lowered costs and improved cash flow positions. With the right KPIs, ARMS management would be better able to measure the Company's performance towards attaining these goals.

Revenue Assurance

Prior to the setting up of ARMS Ltd. the Water Services Corporation, as the agency responsible for utilities billing, was - with the exception of electricity heavy consumers - also responsible for credit control. Until February 2011, EMC had its own credit control department responsible for the Corporation's heavy consumers. This function has since then been passed on to ARMS Ltd. which is now handling the entire debtor management on behalf of both Corporations.

According to ARMS management, some positive developments have ensued since the Company has assumed responsibility for credit control. The two major improvements were:

a. the number of bills being issued which has increased considerably; and
b. the significant decrease in debtor days.

A higher frequency of billing will result in better cash flow for the Corporations through quicker receipt of dues. It is also more convenient for customers who can pay their yearly consumption through multiple bills. According to ARMS management, 750,000 bills were issued during 2009. In 2011, this amount was issued by May indicating that bills are being sent out more frequently. On the other hand, ARMS Ltd. should be capable of handling 7,000 daily bills; yet, it has not managed to reach this target and is still averaging 5,500 daily bills. According to KPIs maintained by ARMS Ltd., debtor management has registered a significant improvement with a decrease of 64.17 debtor days from 186.82 to 122.65 debtor days between November 2010 and June 2011. Moreover, ARMS Ltd. has still not established a Revenue Assurance Unit as outlined in the July 2009 'Proposed Organisational Design' which stated that *"the Revenue Assurance Unit will provide a comprehensive analytical service directed towards identifying, quantifying and enabling the utility to recover 'non-billed revenue'. The Revenue Assurance Unit will target commercial revenue leakage across the utilities' residential, commercial and industrial customer base. The Unit will also carry out field audits to investigate situations vis-a-vis customer meter management as appropriate".*

NAO is of the opinion that ARMS Ltd. needs to strengthen the revenue assurance function with an adequately resourced unit, a structured approach and a defined set of policies.

5. The Move to Smart Meters

The introduction of smart meters is an important element of the IUBS project as this will automate the meter reading process and eliminate estimated bills. Smart metering automatically collects consumption from water and energy metering devices and transfers that data to a central database for billing and analysing. This technology saves utility providers the expense of physically having to read a meter. Another advantage is that billing can be based on near real time consumption rather than on estimates based on previous or predicted consumption. This timely information, coupled with analysis, can help utility providers to better control the production and use of water and electricity. It will also allow customers to monitor consumption patterns. To this end, ARMS Ltd. is working on an internet facility which will allow customers to access their smart meter readings on-line. This will, according to ARMS management, provide customers with better information on their consumption and promote better use of electricity, possibly contributing to a reduction in energy waste.

ARMS management anticipates that the implementation of meters in their smart mode should create a ripple effect of savings in operations across the board as bills would be perceived as more accurate by consumers since they will be based on actual consumption. This will possibly translate into less customer queries resulting in customer care savings. Management is considering re-deploying meter readers on other duties and re-organising billing officers and account keepers to enhance efficiency and decrease costs. According to ARMS Ltd., in more definite terms, the benefits - direct and indirect, to Corporations and to consumers - which are envisaged to accrue from the move to smart meters are:

a. *It is estimated that the non-technical losses for electricity may be reduced from 7 per cent to 3 per cent, saving circa €13 million per annum after the replacement of all meters through the implementation of AMM.*

b. *Remote meter reading will eliminate incorrect billing estimates and mistakes in data inputting. Whilst the technology will not completely eradicate losses through under-registration and theft, it will certainly provide better analytical data permitting the Corporations to focus their investigative effort on high-priority areas. This should reduce the percentage of non-technical losses for water; however the percentage reduction still needs to be identified.*

c. *Electricity and water losses can be reduced further through the implementation of zone meters and electricity/ water balancing. In this scenario metering data are stored intermediately, i.e. at distribution level, thus allowing the Utilities to drill-down on losses within specific areas and device targeted on-site investigations.*

d. *The technology permits remote configuration of the electricity meters including disconnection of premises when bills are not paid giving rise to improved credit control and cash flow. Furthermore the technology permits utilities to engage in a process of power curtailment, whereby a percentage of the power supplied is reduced per defined period (e.g. each month) until all (or acceptable minimum level of power as instructed by the regulator) is reduced. The latter solution is considered as a more socially accepted way of dealing with customers defaulting on their bills.*

e. *Smart metering will permit the Utilities to reduce their read-to-bill time. Improved and faster meter data acquisition permits utilities to increase billing frequency or offer more billing options to their customers (such as prepayment).*

f. *Prepayment inverts the process of meter-reading to cash-settlement such that payment is done prior to providing the service, therefore eliminating debt financing costs and also reducing the risk of bad debtors. From various research studies carried by a number of foreign Utilities it is clear that there is a sizable percentage of consumers who prefer to buy power like any other commodity, i.e. pay and consume. Consumers often have budget constraints and buy nearly everything else on a weekly basis, so they would like to do the same with electricity. This weekly market segment can be over one third (sometimes even exceeding one half) of their total customer base. Prepayment is also a mechanism which permits customers to stay in control. It is possible that this has been influenced by the popularity and convenience of mobile phone prepaid service.*

g. *Smart metering will enable the Corporations to introduce new tariff structures as are already in use in other countries (e.g. charging lower tariffs during off-peak hours).*

h. *Smart metering technology enables the introduction of flexible tariffs and other schemes that may help manage the peak load on the system. Peak load may also be controlled by selectively limiting the supply of electricity through smart meters. Peak load management will result in increased operational efficiencies. In the longer term, substantial financial savings could result from a postponement in capital generation investment required to continue increasing capacity to meet peak demand.*

i. *Automation of meter reading will eliminate the need to bill on estimate readings. This will eliminate under or over billing, thus improving customer satisfaction. Bills based on actual readings will reduce the amount of billing enquiries and disputes, which will in turn reduce customer service and related back-office costs involved in billing revisions.*

j. *Reduction of meter reading costs.*

k. *Ability to access difficult to read meters.*

l. *Reduce customer disruption by reducing visits.*

m. *The technology will improve the quality of consumption data available to consumers which can then be used to make calculated decisions vis-à-vis energy conservation."*

In view of the fact that smart meters per se were not included in the scope of NAO's investigation, the above declared benefits are simply being reported but not commented upon as this Office did not carry out any work enabling it to form an opinion thereon.

In more definite terms, the smart metering project involves installing the meter and establishing a permanent communication channel to it. This enables two-way communication such that the meter can be managed remotely. Full implementation of the advanced metering infrastructure system in respect of all customer accounts was targeted at 36 months. According to the roll out plan, the aim is to have the majority of smart meters installed by January 2013, as well as the entire communication and infrastructure needed to operate the automated meter management system.

ARMS Ltd. first introduced the use of smart metering in the localities of Mdina, Manikata and Zurrieq. As from August and December 2010 respectively, customers at Mdina and Manikata are automatically billed through smart metering technology. Zurrieq was earmarked for end to end integration by the end of March 2011 and the majority of bills in this locality are now being issued in smart mode. According to ARMS management, it was planned to extend this service to Fgura and Paola by end August 2011 with a further 8000-9000 accounts being read remotely. The deployment of smart metering in these areas has, however, been delayed. Nonetheless, by end 2011 ARMS Ltd. plans to introduce smart meters in another location in Malta and the first one in Gozo.

ARMS Ltd. decided to start commissioning and billing via smart mode in a staggered manner as early on in the project as possible. This is, according to ARMS management, unlike the model used in the implementation of similar technology in other countries which first required all meters to be installed before establishing the communication. In this way ARMS Ltd. aimed to learn from the experience (and determine remedial measures) on a micro level rather than have a national rollout and be subject to specific problems which would affect large amounts of accounts at the same time. In addition the strategy adopted by ARMS Ltd. was intended to result in additional efficiencies since some benefits, such as automatic reading, accrue before the end of 2012.

The number of meters installed to date varies for electricity and water given that the deployment is being carried out separately by the Corporations. The installation of electricity smart meters is being carried out by EMC staff while installation of water smart meters or upgrading of existing meters to smart meters is being carried out by WSC personnel. Both, however, report to ARMS' Manager AMM. The project seems to have lagged behind and the Corporations recently issued a call for tenders for the installation of smart meters. According to ARMS Ltd., the 2013 deadline, however, remains unchanged. Delays in the implementation of the meters in their smart mode will signify that consumers will continue to receive bi-monthly provisional bills based on estimates as opposed to actual meter readings.

6. Changes to Utilities' Bill

ARMS Ltd. is responsible for calculating water and electricity bills, sending invoices to customers and receiving payments on behalf of the Corporations. Customers receive one consolidated invoice with the amount due for water and electricity use. These include charges for consumption, the service charge for water and electricity, other service related charges, outstanding balances and interest accrued on unpaid bills. The eco-reduction on electricity, calculated on the number of consumers registered on the account and electricity consumption, is deducted from amount due. Although this process has basically remained unchanged since ARMS Ltd. has taken over utilities' billing from the Water Services Corporation, significant changes to the format of invoices sent to customers were made as from January 2010.

The invoice is now made up of two pages where the first page provides a summary of the bill whilst the second gives details of consumption and charges. The first part of the revised invoice contains customer and account details, namely:

- consumption period;
- date of invoice;
- invoice number;
- account number;
- amount due;
- due date for the settlement of bill;
- the customer's mailing billing address;
- the address where the electricity and/or water meter is installed;
- number of residents registered on the account, and
- consumer scheme/tariff rates.

The second section of the invoice gives a summary of water and electricity consumption. Details for electricity use indicate the electricity service charge, consumption, (deducted) eco-reduction compensation and other service-related charges. Details for water use indicate the service charge and consumption. These give the total electricity and water charge for the period. If the bill is based on actual readings, or if it is a half-yearly bill, then previous estimated bills are subtracted. This section is empty when the bill is issued on estimated readings or when consumption is read through a smart meter. The final charge for the period is thus calculated.

The next section of the bill gives a short history of the account indicating the balance from previous bill, any payments received by ARMS Ltd. after the issue of the previous bill, any outstanding balance prior to the issue of this bill and interest charged, giving a total due to date. Actual meter readings for electricity and water as at the start and the end of the consumption period being billed are also given.

A breakdown of electricity and water charges, per applicable consumption rate, is indicated on the next page of the bill. A graphical representation of the current as against the previous year's consumption is provided, as is a carbon footprint of the electricity consumed during the period covered by the invoice.

The current invoice gives very detailed information of water and electricity consumption; information which was not previously available to consumers. Notwithstanding the fact that this is undeniably a positive initiative undertaken by ARMS Ltd., the new invoice format has generated considerable complaints by customers who are overwhelmed by the details of the invoice. ARMS management concedes that *"the bills give a lot of information, but the same information sometimes confuses the same customers"*. However, according to ARMS Ltd., *"before introducing the new billing format, focus groups were arranged to try to arrive to the best user friendly format possible"*. On its part, ARMS Ltd. had also undertaken a number of media initiatives and information campaigns, including the distribution of a brochure to all households explaining the new invoice format. Information is also available on-line and through a customer care helpline.

7. Payment Options

Payment Options for Customers

Payment for utilities can be effected through a number of different channels. Payments can be made in cash at ARMS' premises in Blata l-Bajda. Customers can mail a cheque or make debit/credit card payment to ARMS Ltd. or pay at banks and other collection agencies such as post offices and local councils[11]. In addition, customers can arrange with ARMS Ltd. for the automatic direct debit of their bank account or may use their computer or phone to authorise payment from their bank directly or by debit/credit card payment to ARMS Ltd. through internet banking on the smartutilities.com.mt website. Customers can make full or partial (in case of estimations or queries) payments on water and electricity bills.

According to ARMS management, customers who opt to effect partial payments can pay through:

a. BOV internet banking
b. HSBC internet banking
c. APS internet banking
d. on-line at smartutilities.com.mt
e. BOV phone banking
f. HSBC phone banking
g. BOV ATMs
h. HSBC ATMs.

Beneficiaries of social security vouchers can effect partial payments at any MaltaPost branch office as long as the payment is a minimum of €100 or in full settlement. However, partial payments with query together with social security vouchers have to be made at ARMS Ltd. offices in Blata l-Bajda and Victoria, Gozo.

According to ARMS management, only unquestioned bills which are paid in full can be settled through direct debit. The bank transfer is effected 15 days after the date of invoice giving the customer ample time to contact the company in the eventually of any problem or query. Customers are given a discount of 2 per cent (or a minimum of €3) for each successful direct debit transfer. Currently, approximately 2,300 customers have a direct debit account with ARMS Ltd.

The above payment methods are explained on the back of invoices issued to customers. A copy is at Appendix 8 of the Report.

Management Perspectives on Payment Options

According to ARMS management, a large part of the billing payment transactions by customers are carried out by post as against direct debit payment facilities or e-service payment. This implies that the cost of billing processing is unnecessarily high given that direct debit payment as well as e-payment processing requires relatively minimal resources.

With this in mind, ARMS Ltd. intends to considerably down size payment by cash and/or cheque, adopting such strategies as sharing with the customer a percentage of the cost saved as a result of the customer transferring to a direct debit payment and continued marketing campaigns to influence the general public to transfer from cash and/or cheque to e- or direct debit payments.

Although on-line/direct debit payments are on the uptake, this Office is of the opinion that a more consistent and insistent drive towards these goals should be adopted by ARMS Ltd.

[11] Currently, the local councils which accept utility payments are those at Gudja, Birgu, Ghaxaq and Birkirkara. There are plans to extend this service to the Mellieha and Bormla local councils in the near future.

CHAPTER 4 - TECHNICAL REPORT ON THE TRANSITION FROM THE LEGACY SYSTEM TO IUBS

1. Introduction

This Report, compiled by NAO's commissioned technical expert, should be read in conjunction with the report on the investigation being prepared by the National Audit Office based on the House of Representatives resolution of the 11 November 2010 where the Auditor General was asked to investigate:

- the decision, and process used, to set up ARMS Ltd.;
- the method of selection of ARMS Ltd. employees;
- the reasons for complaints by consumers regarding the services provided by ARMS Ltd., and
- any other related matters of interest to taxpayers.

As part of this Investigation, NAO requested the services in the form of Information and Communication Technology (ICT) expertise to expand and liaise with the core investigation team areas to determine the reason(s) for ARMS' failure to deliver as per its original objectives and to provide good service to consumers. PwC was engaged as per engagement letter dated 14 February 2011 to provide specialist skills in Information Systems auditing to supplement the NAO with the above terms of reference taking in consideration:

- a legacy system that had been in use for a number of years and that was deemed to be no longer adequate for modern-day management, manned in a co-joint effort by Enemalta Corporation (EMC) and Water Services Corporation (WSC);
- a procurement process covering, apart from the Billing and Customer Relations Management packages (replacing the legacy system as per above), other distinct areas, namely: Automatic Metering Management, the Supervisory Control and Data Access system (SCADA) and the Enterprise Resource Planning;
- the resulting acquisition and deployment of the chosen solution through the above-mentioned process, and
- a data migration process in the interim.

The findings and conclusions in this Report have been prepared following a fact-finding exercise performed in conjunction with the NAO investigation team consisting of meetings, interviews, and review of relevant documentation and information made available.

2. Summary of Technical Findings

The Integrated Utilities Business Systems (IUBS) programme's primary objective was an ICT/Business Process Transformation across four main themes:

- Enterprise Resource Planning (ERP);
- Customer Relationship Management and Billing (CRM);
- Automated Meter Reading (AMM), and
- Energy Management System (EMS).

In summary, the benefits that were expected to be derived through this programme were:

- reduction in non-technical losses;
- automation of meter reading will eliminate the need to bill on estimate readings, reduce incorrect bills and eliminate mistakes in data inputting;
- improved distribution information to drill down on losses in specific areas;
- remote service suspensions;
- reduction of the read-to-bill time through improved and faster meter data acquisition permits utilities to increase billing frequency or to offer more billing options to the customers (such as prepayment) and reduce debt financing costs and also reducing the risk of bad debtors;

- introduction of flexible tariff structures similar to those already in use in other countries (e.g. charging lower tariffs during off-peak hours);
- reduction of meter reading costs;
- ability to access difficult to read meters;
- reduce customer disruption by reducing visits, and
- improve the quality of consumption data available to consumers to make calculated decisions vis-à-vis energy conservation.

Limited business benefits were achievable by the Billing and CRM theme on its own as part of the IUBS programme and a significant portion of these benefits are dependent on the AMM components (smart meters, etc.) of the overall programme for the complete benefits to be delivered to ARMS Ltd., the corporations and ultimately customers. As at October 2010, there were no key changes to the billing cycles and the process was still dependent on manual meter reading processes to issue one actual bill every six months and two interim estimates. Significant improvements may only be achieved through the AMM project that should result in timely bills based on regular actual readings without the need to have meter readers visits.

Some back office improvements were achieved as a modern, more robust and integrated system was introduced to issue bills, manage customers through a centralised system to view the information of a customer including bills, customer queries, and to have available reporting capabilities and improved audit trail functionality.

In general, expectations by customers for service improvements could not have been satisfied between January and October 2010 solely through the implementation of the CRM and Billing theme.

On the other hand, complaints made by customers on the service provided by ARMS Ltd. that could be associated to systems and technology issues were the result of a number of contributing factors, some of which were specific incidents, and some of a more generic nature. The technology-specific transition factors that contributed to the reasons for complaints by consumers regarding the services provided by ARMS Ltd. include:

- limited data quality checks performed over data from the legacy billing system prior to the migration of data to the new system;
- insufficient staff to handle (resolve) automated system locks over meter reading, invoice and accounts that stopped bills from being issued and that had a direct impact on the frequency of bills received by several customers;
- energy allowances cheques that were based on data originating from legacy systems (including Number Of Persons (NOP), account holder, address details) that was outdated (mainly due to customers not notifying the corporations) resulting in cheques issued for incorrect amounts and to the wrong payee;
- breakdown in controls over the timely identification of a failure in the automated replication of customer data between the CRM and Billing components of SAP;
- failure to have comprehensive customer contact/complaints information analysed in such a way to pre-empt problems from escalating rather than the reactive approach to customer complaints on a case by case basis, without necessarily addressing the cause to avoid such problems recurring, and
- failure to measure the performance of customer contact policies through various channels (primarily email and physical correspondence).

The following factors that contributed to the reasons for complaints by customers need to be taken into consideration:

- efficiency-related issues typically associated with changes to systems and processes (learning curve);
- the significant increase in customer contact over the same period of time for various reasons (including increase in tariffs for utility services);
- the distraction of key resources that had to be allocated to the activities surrounding the energy allowance cheques that were not planned as part of the IUBS programme implementation, including the sudden need to correct personal, household and address details that were tolerated in the case of utility bills but had an impact on the validity of cheques, and
- energy-conscious customers who had reduced their consumption in reaction to the increased tariffs but for whom the estimate generated by the billing system still projected an increase in consumption based on the previous year's consumption.

There were no indications at anytime that the hardware server infrastructure underlying the ERP and CRM was insufficient, inadequate or that any problems encountered were due to the performance of such infrastructure. Overall, the desktop infrastructure used by systems users was deemed satisfactory other than a few instances where ARMS Ltd. stated that minor disruptions took place for a short period of time until a desktop was upgraded.

3. IUBS Programme

Introduction

The IUBS Strategic Partnership project was initiated in 2005 by EMC and WSC jointly to implement a series of mission-critical systems and associated services including business process outsourcing.

The Corporations had articulated the requirements through four main themes, that of:

- Theme 1 - Enterprise Resource Planning (ERP) with optional Procurement and Inventory Business Process Outsourcing (BPO);
- Theme 2 - CRM & Billing (CRM) with optional BPO;
- Theme 3 - Automate Meter Management (AMM) with optional BPO, and
- Theme 4 - Energy Management system (EMS) (only relevant to EMC).

A Request for Information (RfI) was issued by the two corporations in November of 2005 to which eight responses were received. Following the short listing of seven responses, a Request for Proposal (RfP) was subsequently issued to the short-listed entities in December of 2006. By the closing date of April 2007, only one bid was received - that of International Business Machines Ltd. (IBM).

A Core Negotiation Team (CNT) was set up and negotiations started in May of 2008. An Adjudication Report was prepared and presented by the CNT to the General Contracts Committee (GCC) in September 2008. The AMM contract was signed in September 2008, while the ERP and CRM contract was signed in December of 2008 following further negotiations. The Corporations no longer considered the BPO of the Cash to Meter as viable and therefore decoupled the BPO option of the meter-to-cash processes. The software licensing agreement was made for a term of five years (up to 2013). The agreement included software support and maintenance.

Key Players of the IUBS Programme

The overall IUBS programme was headed by a steering committee made up of the Chief Executive Officers (CEOs) of the respective Corporations. Programme management and programme support was performed by Malta Information Technology Agency (MITA) while each theme of the IUBS programme was assigned a Project Manager and supporting project resources.

A draft Heads of Terms outlining the responsibilities between ARMS Ltd., EMC and WSC was signed with an effective date of 1 January 2011and signed by the respective CEOs of each party. The Heads of Terms do not specify the Service Level Agreements (SLA) to be established, measured and reported between the respective parties but only states that SLAs will be established.

Billing and CRM Project of the IUBS Programme

The project for the Billing and CRM entailed two separate projects (P4) and (P5). The project kicked off in early 2009 with a planned 'go-live' date of 4 January 2010. Various detailed blueprints of the system, underlying functionality and business processes were prepared by IBM.

Key Findings - Change Control

Through the review of various blueprints, we noted that there is an overall lack of change control including lack of documentation of changes from July 2009 onwards. We were informed that prior to March 2010 software changes did not go through a formal documentation process to ensure that requests are track controlled, whilst ensuring adequate documentation is maintained of such changes.

Software change management procedures were formally in place in March of 2010 using *ClearQuest*, a tool provided by IBM to manage the workflow software change and bug tracking requirements. The management of ARMS Ltd. provided a list of change requests performed in 2010. This list was included in the Systems Audit report of Grant Thornton dated 14 June 2011. Around 100 requests were made with a resolution date in 2010. We are not in a position to assess how rigorous the *ClearQuest* approach was applied from March 2010 onwards, particularly since IBM personnel were on site during 2010 and changes were requested and performed on-site.

We were also not in a position to assess the criticality of software change requests raised in 2010 that are still open as at time of reporting. When requesting the prioritised list of open change requests for 2010 ARMS management stated that *"Priorities are set on the ClearQuests and whilst some are urgent and required immediate fixes, others were desirable to have but not a high priority or too expensive to do as an enhancement where the benefit was not high enough. Thus such requests may have fallen behind on importance on others that were more serious and possibly raised later"*.

Key Findings - Data Quality and Migration

Data migration tests for the Billing and CRM theme took place during the last two quarters of 2009. The migration tests revealed that the data migration exercise required the data to be broken down in further detail to ensure accurate transfer from the legacy billing system to the new system.

The migration strategy dated April 2009 states that the data quality and the data extraction from the legacy system, and that the cleansing of data is the responsibility of EMC/WSC. The migration strategy states that a separate Data Cleansing Strategy (and implied execution) was required as part of the migration. No evidence of a Data Cleansing Strategy nor results of successful execution of such strategy were made available at the time of reporting.
Responsibilities over data migration were split into two functions. The IBM Data Migration Manager was responsible to:

- ensure specialised skills are built to support the ERP/CRM data migration;
- plan the data migration sequence and schedule;
- provide guidance to EMC/WSC on data cleansing;
- manage the development of data migration programs;
- execute the data migration test runs;
- manage the data matching process to prepare EMC/WSC data for migration;
- communicate the migration status on an ongoing basis, and
- manage the production data loads.

The EMC/WSC Data Migration Manager was responsible to:

- work with the IBM Data Migration manager in the planning of the migration sequence and strategy;
- manage and supervise the execution of data cleansing activities;
- manage the development of data extraction and transformation programs;
- set up the test environments of the legacy systems for each of the migration test runs;
- execute, together with the IBM migration team, the data migration test runs;
- provide the statistics of the legacy extracted data for the purpose of data reconciliation, and
- manage the data extraction and transformation from the production legacy systems.

During the migration tests, it became evident that issues were being faced on data quality from the legacy billing system and although attempts were made by the respective Corporations to clean data or update data through customer enquiry where possible, the migration had to be completed based on what information was available at that time. It is understood that the cleansing of data had to be performed by the Corporations, but when issues were identified during such migration, not enough resources were available to address the issues identified. The CEO of ARMS Ltd. stated that *"Prior to migration a number of mock migration tests were done to test the move into the new system. The exception data that resulted was passed on to the Billing Section for correction when possible"*.

An area that was known to have created issues during the migration of data resulted in a number of bills which were either not sent immediately (due to incorrect addresses) until addresses were corrected or were sent to a wrong flat within blocks of apartments. This was also noted in correspondence between IBM and officials from MITA and ARMS Ltd. that during the third migration tests dated 13 November 2009, issues around addresses sourced from the Common Database (CDB) were still prevailing.

Migration results reports dated 27 December 2009 from IBM shows an overall high percentage of migration success, however this does not reflect the quality of data being migrated. A key issue that emerged after going live with the new system was, for example, the number of persons in a household. This was one of the predominant issues faced in the distribution of the Energy Allowance cheques later in 2010. Although the migration of data was correct from the legacy system to the new system, it was known that the data stored in the legacy system with respect to the number of persons in a household carried inaccuracies that should have been reported by customers.

A separate report was also prepared by Grant Thornton on the migration of data from the legacy system to the new system dated 14 June 2011. The conclusions of this report state that the consumer scheme, meter serial number and meter reading data were correctly migrated as at 4 January 2010 in all material respects. The report states that with respect to the number of persons, it was not possible to express an opinion on the migration of such data as at 4 January 2010, however the data could be confirmed to be correctly migrated by 15 March 2011.

As from January 2010, ARMS Ltd. had to follow up data correction requests made through its customer support function on a case-by-case basis and no detailed information analysis was available through the customer support function to classify data correction requests and analyse them accordingly.

Key Finding - Testing and User Acceptance Testing

The objectives of User Acceptance Testing (UAT) were defined in the testing strategy of the CRM-Billing components of IUBS. The objectives state:

- Acceptance by the end-user organisation of the developed and implemented business processes.
- To initiate the transfer of ownership of the SAP system from the CRM - Billing Project team to the end-user organisation.
- The user acceptance test will focus on testing and accepting the following elements:
    - Migrated data
    - User authorisations
    - Manual Procedures
    - Outbound/inbound relationships (customer invoices, incoming payments, etc) and interfaces with legacy systems.
- Formal acceptance will be done by formal sign-off of the test scenarios by the Team Leads and the Business Process Owners defined for each test scenario.

A sample schedule of UAT execution was provided to us, which, however, reflects various items with a status of "pending". We were also not in a position to assess how representative the samples provided were of the overall population.

Based on the above, we were not able to assess whether all UAT were executed and completed successfully, and we have not been provided with a complete schedule of UAT activities planned, executed, and successfully achieved with an assessment of their criticality and impact on the 'go-live' decision.

KPMG were engaged to test the arithmetical accuracy of a sample of utility bills issued through SAP. The testing was performed by KPMG between January of 2010 and June of 2010. Email correspondence between KPMG, ARMS Ltd. and IBM shows that no significant deficiencies were noted in the sample calculations of bills tested, however a number of issues that did not relate to the arithmetic accuracy of bills, were assessed to be of a serious nature including wrong service charge used. Further review of email correspondence between the parties indicates that either:

- the issues identified in the sample testing were eventually addressed by ARMS Ltd. and IBM, or,
- the issue was already known to ARMS Ltd. and IBM, and a solution was being worked on at that time.

Key Finding - Impact assessment at 'Go-live'

According to response provided by ARMS management, 'go-live' decisions were discussed by the Project Review Board (PRB). Minutes of the PRB meeting of 30 December 2009 refer to the fact that the migration of data with respect to CRM/Billing was being finalised. ARMS Ltd. stated that migration results of the 27 December 2009 presented to the PRB, which showed an overall positive result.

No risk assessment plan was prepared and presented in the PRB meeting and no reference was made to any pending matters that should stop the 'go-live' decision from being taken. Minutes state that *"pending items arising prior or carried forward to the date of the 4 January 2010 will not hinder the 'go-live' date since these will be recorded and tackled accordingly as the process unfolds"*. No reference was made to results from User Acceptance Testing or any pending matters related to data quality.

The minutes also state that: *"It was decided that on Sunday 3 January 2010 at 09.30am, both (Chief Financial Officers) CFOs and other key users and process owners from the finance divisions and other sections of both corporations, including top management and ARMS team with IBM, would engage in this exercise (i.e. slow motion exercise), in order to have a clear indication of any critical issues that might compromise the going live date of 4 January 2010"*.

We are not aware of any issues reported formally from the events that took place on 3 January 2010.

4. Difficulties encountered over utility bills and energy vouchers

Key Finding - Backlog of bills generated by validation locks

Bottlenecks created through validation locks were identified to be one of the main factors that contributed to the fact that customers were not receiving utility bills according to the planned frequencies.

During a normal billing run process, validation locks had been implemented in the system to lock the process of a specific transaction/activity if it did not meet pre-established criteria and thresholds. Locks had been established at three different levels of the billing process. These are (1) meter reading processing, (2) billing of a specific transaction (e.g. electricity service charge), and (3) at overall invoice level. The following are the five reasons that explain why the system would lock a particular step in the process:

- Meter Recommencements (new reading lower than the previous actual reading);
- Reason Limits (a considerable higher actual reading, than the one expected by the system, based on previous average consumption);
- Previous reading locked (new reading entry gets locked because previous reading is already locked);
- Bills Locked (invoice a consumer for two different consumption periods), and
- Invoice Locked (invoices amount is beyond threshold values configured in the system).

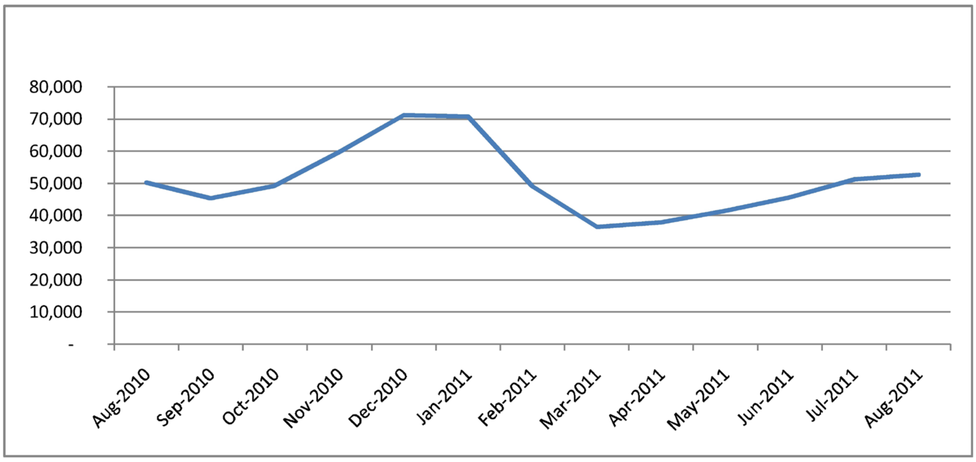
The validations introduced in the new system included those that replaced validation controls in the legacy system and manual controls that were previously required before mailing invoices, but they also provided the opportunity to enhance the controls during the billing processes beyond what was previously available. Once a transaction is locked, this needs to be reviewed by Billing Officers of ARMS Ltd. on a case-by-case basis to be released to proceed to the next step in the process.

In an internal report on the operational effectiveness of the organisation up to October 2010, it was stated, *"Following the improvements on Customer Care, it becomes a prerequisite to improve Billing Operation performance as several complaints are stemming from the bottleneck in the Billing Section… However there are around 15,000 accounts that have not received any bills this year. The reasons are mainly related to data problems. Processing of these bills is moving at a very slow pace since the resources allocated are mainly part time Philip Toledo Ltd (PTL) engaged students or during the spare time available of the billing agents."*

Monthly analysis of all locks was not prepared between January and October of 2010. A backlog release strategy was prepared by IBM on the 2 December 2010 and presented to ARMS management. The strategy document states that as at June 2010 there were around 20,000 reading locks whilst in November 2010 the reading locks stood at 47,800. In explaining the release efforts, IBM noted that previously there was no statistical data tracked to reinforce the need to address reading locks. ARMS Ltd. stated that the *"Backlog was due to locked accounts aggravated by limited human resources to handle the backlog"*. It was also confirmed that the volume of locks generated by the validations in the system were not anticipated during testing performed in 2009.

An analysis of locks shows that during December 2010, total locks reached a peak of 70,000, and the subsequent actions by ARMS Ltd. started to address the backlog of all locks. However, this backlog was not addressed completely as indicated in the figure below.

Figure 1: Reading Locks



Source: Document - ARMS Ltd.

Key Finding - Onsite Meter Reading Validations

The integration between the Route Management Software (RMS, used to store and relay reading to the billing system) and the legacy billing system allowed for various on site meter reading verifications that is not possible with the new SAP system. ARMS Ltd. stated that the technology used for the RMS system and the handheld meter readers were close to the end of their lifetime and it was not possible to find replacement parts when these failed. A decision to replace the handheld technology was taken whilst in the meantime the handheld devices were still going to be used to capture meter readings. However, onsite validations were no longer possible.

ARMS Ltd. stated *"Previously, possible errors in meter readings were flagged when the meter reader was keying in the reading at the consumers premises, and then prompting him to double check the reading by re-entering it. Currently, this facility no longer exists thereby allowing incorrect readings to remain undetected at source."* The validations to detect unusual and high readings are still enforced by SAP however when such instances occur, the reading is locked and requires the intervention of the Billing Officers to address the lock.

We understand that EMC has taken over a project to replace the RMS system and handheld technology to tightly integrate the handheld technology to SAP, and therefore reinstate onsite validations to minimise the possibility of inaccurate meter reading.

Key Finding - Inconsistencies in Customer Standing Data

In November of 2010, a weakness was noted in the system whereby it allowed a user to select the applicable scheme rates for the service charge and for the consumption tariffs of a customer in two different points in the system, however it allowed the user to disjoin the relationship between the two (service charge vs. consumption tariff) in these two different points. The result is that in one part of the system, a customer account could be set as single phase, whilst in the other location it was set as three-phase.

Once identified based on feedback obtained through the Customer Care function, ARMS Ltd. stated that an exercise was carried out in November of 2010 to check all accounts for this consistency and identified around 2,000 accounts that had this problem resulting in wrong bills being issued. These instances were reported in the media around the same period.

ARMS Ltd. stated that a control was designed to ensure that a customer account is recognised with the same meter type in the two different standing data areas in SAP. Although the control was designed, it was not made clear whether this control has yet been released into the live environment at the time of reporting.

Key Finding - Breakdown in the Synchronisation of Customer Information between the CRM and Billing modules in SAP

Master data pertaining to customers is held in two different locations in SAP. One data set is located with the CRM module and another data set is located within the Billing module. Automated replication was configured by IBM to ensure that the same data stored in the two different locations remains synchronised at all times. This replication functionality was a custom development specific to the implementation of IUBS.

At some point in time around March of 2010, Customer Care personnel at ARMS Ltd. reported that although changes were being made to customer information through the CRM module, these changes were not being reflected in the Billing system. Customer Care personnel were increasingly facing frustrated customers who would have requested changes to their standing data.

The issue was particularly relevant to the NOP field that had a direct impact on the calculation of utility bills. Once identified, the issue was reported to IBM. We were not in a position to identify how long this problem had persisted, how many accounts were affected, and what impact resulted. Once identified, temporary remedial action was taken by IBM, by requesting ARMS' personnel to trigger the replication processes themselves, however it was noted that it took around two months for IBM to completely remedy the issue identified.

ARMS Ltd. stated that it was IBM's responsibility to monitor logs that would have indicated that the automated replication was not functioning successfully as planned.

Issues surrounding the consistency of customer data held with respect to the NOP have also been highlighted in the testing performed by Grant Thornton and reported in the Systems Audit Report dated 14 June 2011.

Key Finding - Data Quality Issues Resulting in Complaints over Energy Allowance Cheques

During discussions held with management of ARMS Ltd., it was noted that no specific analysis or report was prepared to classify the types of complaints received by customers with respect to the Energy Allowance cheques that were issued as from July of 2010.

However based on the feedback management of ARMS Ltd. received from the Customer Support personnel, three types of information held in SAP were identified to have had an impact on the accuracy of the cheques issued and the subsequent customer complaints received. These are:

- Number of Persons (NOP);
- the Account Holder, and
- the account mailing address.

In the case of NOP, there was no indication that data pertaining to NOP was not migrated accurately to SAP. In the case of accounts where the NOP was set to zero persons, with the introduction of tariffs systems in October of 2008, customers that had neglected or failed to notify and update the NOP to reflect the correct number of persons residing in the household, were not issued with the Energy Vouchers.

In the case of the Account Holder name, ARMS Ltd. stated that there were instances where the account holder was deceased, however, relatives continued to pay bills without changing the account holder name. Subsequently, the cheques were issued based on the information stored on SAP, and therefore cheques were issued in the name of the deceased account holder.

In the third instance, it was noted that difficulties were encountered during the migration of account details pertaining to flats and apartments. In some cases the details of the flat or apartment number were either lost, or where swapped with other flats in the same block. This was highlighted in Data Quality and Migration section of this Report.

The above issues indicate that ARMS Ltd. had not anticipated the issues emerging from the underlying data quality in the legacy systems, particularly in the context of issuing Energy Vouchers based on that data, and did not take pre-emptive action to minimise the impact accordingly.

5. Developments after November 2010

The following are various technology related actions taken subsequent to November 2010:

- a review of standing data consistency was performed during November 2010 to address the issue identified earlier about inconsistent standing data stored in different locations across SAP. Management confirmed that a control was designed after November 2010 to prevent such errors being repeated however, they could not confirm whether the control was implemented effectively as at the time of reporting;
- Backlog Release Strategy provided by IBM on the 2 December 2010 to address the backlog of account locks. The strategy reflected the guidance that ARMS management required to address the backlog problem. Additional resources were allocated early 2011 to support ARMS Ltd. in addressing the backlog problem;
- additional resources have been allocated to support ARMS Ltd. in exploiting further Business Intelligence tools, and
- recruitment of additional business analysts to support ARMS Ltd. in translating business needs into technology solutions.

CHAPTER 5 - ARMS' CUSTOMER CARE FUNCTION

1. Introduction to Customer Care Function

One of the key stakeholders of ARMS Ltd. is the consumer. As a result, the customer care function is critical for the smooth operation of an organisation such as ARMS Ltd., and likewise is the provision of the highest standard of customer care possible. In this regard, ARMS management contends that the most basic and critical expectation of its clients is to have all queries and/or complaints answered in a single visit/call without the need of other visits/calls or any type of additional interventions. Customers also expect a minimal turnaround time.

As per MISCO International Report issued prior to the inception of ARMS Ltd., customers were primarily expecting that the service provider reacts promptly to their needs in a more customer-oriented fashion and with a greater commitment towards the resolution of their queries and complaints. Customers also expressed their desire to see a follow-up system in place which re-establishes contact with customers after a certain period of time so as to identify the status of the query and/or complaint. In addition, the introduction of online services aimed at providing a wide range of information, bill payment facilities as well as the facility to report faults, were other features deemed desirable by customers.
Although to date ARMS Ltd. does not have a documented set of complaint-handling procedures, management contends that it seeks to segregate and prioritise complaints as necessary. For instance, complaints on technical issues, such as water leakages, are given priority over other complaints.

2. Customer Care Function during Period July to September 2010

The customer care function was notably under public scrutiny between July and September 2010 when the number of customer contacts with ARMS Ltd. increased drastically. In fact, as per the 'Technical Review of the Operations of ARMS Ltd. in connection with Water and Electricity Billing and Customer Relationship Management' carried out by the Malta Resources Authority (MRA), customers' turnout during August 2010 amounted to 6,230 as compared to the 2,393 customers attended to during August 2009.

Customers' concerns varied from requests for the explanation of the new bill format, wrongly issued and delayed bills and late payments related to Government's energy allowance. In addition, other issues such as the move of ARMS' offices from Valletta to Luqa as well as the daily, long queues and unanswered emails and enquiries were irritating customers and constantly getting the media's attention.

As per media claims and criticism, customers were also complaining about the inadequacy of the customer service as provided at ARMS' offices in Luqa. Such protests revolved around the excessive waiting time prior to being served, the poorly maintained waiting area and the lack of information available to consumers regarding documentation required to have their queries attended to effectively. This lack of information often led to consumers having to effect multiple visits to ARMS' offices when dealing with the same issue. Various consumers also claimed that ARMS Ltd. had an insufficient number of front-line officers to meet demand and that employees were not adequately trained to operate the new system.

Concern was also expressed by the Ombudsman in September 2010, where it was claimed that the service provided by ARMS Ltd. was inefficient and insensitive to customers' needs. Government and the Opposition also intervened and discussed the issue at length in Parliament. As described in Chapter 1 of this Report, it is as a direct outcome of this parliamentary debate that this Report was commissioned. The major concerns and relative actions taken are discussed hereunder.

- *Closing down of Valletta Customer Care Office and relocation to Luqa*

Customer Care offices were relocated to WSC Head Office, Luqa due to the City Gate Project which was initiated in March 2010. Relocation may have created a number of problems including:

- Luqa is not easily accessible especially to elderly and people with special needs;
- the layout of Luqa offices is not designed to serve as customer care offices;

- a lack of parking spaces in the vicinity of Luqa offices and public transport not as convenient;
- an increase in customer care workload due to centralisation of all complaints at one location in turn causing increases in waiting and service time to consumers, and
- increased pressure on front-line officers and support staff facing annoyed and irritated customers.

Following the relocation to Luqa offices and in order to deal efficiently with the high turnout of customers visiting the Customer Care Section during summer 2010, ARMS Ltd. increased the number of front-line officers from 11 to 15 officers and organised queuing systems so as to reduce customers' waiting time and speed up the overall service time. A number of parking slots previously used by employees were reserved exclusively for ARMS' clients.

- *Long queues and excessive waiting time*

As noted by the 'Technical Review of the Operations of ARMS Ltd. in connection with Water and Electricity Billing and Customer Relationship Management' carried out by the Malta Resources Authority, customers' waiting time increased from 9 minutes in August 2009 to 1 hour 29 minutes in August 2010. The increase in waiting time between 2009 and 2010 may be due to a variety of new queries and/or complaints from the part of customers, occurring simultaneously. ARMS management attributes this longer waiting time to queries related to:

- new billing system in place with teething problems that had to be dealt with and data issues;
- increase in billing rates, and
- issue of Government's subsidy

To mitigate the situation and serve customers more efficiently, ARMS Ltd. took a number of actions:

- increased number of counters to serve customers[1]
- extended the opening hours by a further 2 hours
- introduced fast track lanes for customers with minor queries
- liaised with MaltaPost which started to accept ARMS' bill payments
- commenced continuous monitoring of queues and waiting times to balance out queues as much as possible. This approach consists of the screening of a real-time, five-line queuing system and varies in a way that enables support staff to increase or decrease resources allocated to specific queues accordingly. In this regard, NAO requested statistical, historical data related to the screening process. ARMS management claims that the statistics maintained relate to each queue in terms of individual waiting times and services times, as well as number of customers serviced.

ARMS Ltd. contends that waiting time may have also increased due an increase in service time. This is due to the fact that front-line officers were seeking to process all customers' requests immediately, thus eliminating the former system where employees only collected applications and the relevant documentation to be processed later on implying a shift from a mix of real-time and off-line processing to a more direct, definitive issue resolution.

- *Lack of clarity and confusion in bills received*

Many customers were asking for an explanation of the new bill format, complaining that the new bill was unclear and complicated.

ARMS management claims that the bills are designed to give extensive information. Despite its usefulness, this information sometimes overwhelms customers. Management claims that it is difficult to come up with a format which will ultimately satisfy all consumers[2]. In this regard, it is pertinent to note that customers also used to complain about the bill format previously used by WSC. As per MISCO International Report, the old bill format was confusing for many reasons including an unclear distinction between the estimate figures and the actual reading figures and different dates for water and electricity readings.

[1] This has already been discussed in the previous section *'Closing down of the Valletta Customer Care Office and relocation to Luqa'*

[2] It is to be noted that in this regard ARMS Ltd. made notable effort through sending out brochures, explaining to those calling at ARMS' customer care offices and contacting ARMS' call centre etc.

There were other issues related to bills received such as customers receiving a number of simultaneous bills bearing the same invoice date and wrongly addressed invoices. The latter was later attributed to issues related to the transfer of data from the old system to the new system. In the meantime, ARMS Ltd. sought to resolve errors by updating the system and database, making reversals and re-issuing invoices accordingly.

- *Billing estimates and billing errors*

Various customers complained about receiving estimated bills which contained errors or imprecise information relating to high consumption in estimated bills, wrong computations and being charged double the price for actual consumption, an incorrect service charge, changes to account details such as the number of registered persons and the issuance of double bills. Clients also complained about meter readers taking actual readings, with their bill mailed only a few days later in estimated form.

ARMS management notes that, during this period, tariffs were actually increased resulting in a large number of high consumption complaints. Management also contends that a number of billing errors may be attributed to the data transfer from the old system to the new system. To mitigate this situation, the new database was updated.

ARMS management further claims that errors may be also attributable to limited or incorrect data in the WSC database being migrated to the new system. Such errors, according to ARMS Ltd., were corrected over time.

- *Timeliness/Frequency of bills issuance*

Another complaint was the non-regularity of the issuance of bills. In addition, there were various instances where customers complained about delayed bills or having received no bills at all.

ARMS Ltd. contends that every year, clients are to receive approximately six bills. The billing process consists of a continuous cycle of two estimates (E) followed by a bill with an actual reading (A). However, some bills were not being sent due to locked accounts, wrong information available in database and other issues as highlighted in Chapter 4 of this Report. Upon receiving complaints, ARMS Ltd. was invoicing customers who were not receiving bills.

Matters related to the frequency of bills issuance are further discussed in the Chapter related to meter reading and billing.

- *Energy Allowance*

During July and August 2010 there were approximately 10,000 allowance cheques which were either issued to wrong account holders or whose allowance was wrongly computed. This resulted in complaints from those customers who failed to receive the allowance. The causes of such an occurrence are discussed in Chapter 4 of this Report. To date ARMS Ltd. claims to have issued all energy allowance cheques.

- *Issue of legal letter to defaulting consumers*

In October 2010, ARMS Ltd. issued a legal letter asking customers to settle payment within 3 days in order to avoid legal action taken against them. The unsigned letter, also submitted to a number of non-defaulting customers, was sent even though ARMS Ltd. holds no legal office. In addition, the letter sent mentioned an administrative charge of €12 levied on the legal letter.

Eventually, the legal letter was retracted and any administrative fees levied were deducted from customers' bills.

- *Unanswered calls, letters, emails and queries not followed up*

Customers were complaining that they were not getting any feedback when trying to contact ARMS Ltd. to pose a query or register a complaint. Specifically, customers were mostly complaining of:

- being unable to get through to ARMS Call Centre
- unanswered letters and e-mails
- complaints made by telephone not being followed up.

With regard to unanswered calls, during August 2010, ARMS Ltd. reached an agreement with World Aviation Group (WAG) for the latter to take spill-over calls and reduce the amount of lost calls during peak hours.

- Employees' knowledge and confidence in using the new system

Customer service provided by ARMS Ltd. may have been inadequate due to employees' lack of knowledge and confidence in the new processes and system in general. ARMS management contends that initially it was difficult for employees to adapt to the new system. This may be due to employees not being afforded sufficient time for the necessary training. As illustrated in Chapter 10 (Perceptions of Non-Managerial Grades regarding various related issued), matters were complicated further due to a situation where some individuals had dual roles: being responsible for specific operations (such as the Head of Operations) whilst simultaneously supporting other people with training.

ARMS management contends that although it took some time for employees to grasp the new system, they did manage to learn to work effectively with the new software during a time in which they were undergoing a transition phase and serving customers in real-time mode. In this regard there is concern, at ARMS and Ministry level that the Human Resources (HR) element of the programme did not keep up with the technical implementation part.

3. Process

With regard to queries and complaints, clients can contact ARMS Ltd. through various means: calling at ARMS Ltd. in person, contacting the Call Centre via phone and/or sending a letter or email. ARMS' web portal is yet another means of communication which enables contact with the organisation. The phone and email remain the two most frequently used media by ARMS' clients.

Officially, there are no set timelines related to query and complaints handling. ARMS management claims that the company seeks to fully address and serve the queries and complaints of those customers who call at ARMS' offices in person. The same can be said for those clients phoning ARMS' call centre. With regard to correspondence, management claims that an email acknowledgement is automatically sent to those clients contacting ARMS Ltd. via email (auto-reply), while an acknowledgement to those clients contacting ARMS Ltd. via postal mail is usually sent within a week. Unless clients contact ARMS' customer care themselves, it is not common practice that ARMS Ltd. keeps complainants informed of the progress of their complaints. Details about each medium of communication are discussed further below.

Calling at ARMS Ltd. in person

Queues at the ARMS Ltd. waiting room are managed through a ticketing system and a five-line queuing system. The queuing system has not always been in place. In fact, although in January 2010 tickets were already being distributed to customers, there was no splitting and monitoring of queues. The ticketing system was only eventually fully enforced after ARMS' reactive decision to introduce split queues.

The real-time nature of queues allows ARMS' supervisors to balance resources allocated to the different queues and manage peaks in the most efficient manner possible. The queuing lines are categorised as follows:

A: Applications with notifications
B: Transfer of accounts
C: Applications for change of details on account
D: Bill-related
E: Credit Agreements.

This approach is by default but changes flexibly according to customer demand.

Prior to entering the waiting room, customers are directed to a specific queue according to their query and/or request. In view of the previously referred to notion of a one-stop shop adopted by ARMS Ltd., it is to be noted that customers can be served by one front-line officer for whatever service request, queries and/or complaints they have without having to queue again in a different line. Should the client have more than one type of request, he/she can still be served at the same booth. For a snapshot of the whole process, reference can be made to Appendix 9.

Knowing what documentation is required for the different types of applications prior to calling at ARMS Ltd. is vital as this avoids situations where customers queue only to be informed they lack necessary documentation when called to the front office desk. Such information can be obtained through various means, including ARMS' call centre and its web portal. This information is also found on every application form, in a section dedicated specifically to provide details about the documentation which needs to be enclosed and/or presented for the service in question. In this regard, it is to be noted that since ARMS' inception, all application forms were redesigned to convey a standard corporate image and revised to facilitate completion by the client.

ARMS management affirms that clients with multiple requests are served by appointment in order to reduce stress on queues. This also gives a holistic service to clients with multiple requests.

Contacting the Call Centre - Telephone calls

ARMS' clients can also be served through the telephone service provided by the organisation's call centre. Call centre personnel access the personal file of the client in question during the call, to be able to follow up the query and/or request more efficiently.

ARMS management claims that the call centre aims to serve the client in full, avoiding the necessity of the client having to resort to ARMS' offices in person. In addition, the call centre aims to answer the maximum number of calls possible. In October 2010, ARMS' call centre answered a total of 11,310 calls whereas in May 2011 15,589 calls were taken. The number of calls lost, calls in mailbox and calls abandoned for October 2010 and May 2011 amounted to 7,322 (39.3% of total calls) and 6,345 (28.9% of total calls) respectively. ARMS management claims that as regards calls found in ARMS' voicemail, call centre personnel check the mailbox and retrace callers every day.

Telephone calls to ARMS' call centre can be also taken by WAG, who reached a contractual agreement with ARMS Ltd. to provide a support service aimed at taking spill-over calls and releasing the pressure of incoming calls during peak periods. This initiative aims to provide a more efficient service whilst decreasing the amount of lost calls.

Contacting the Call Centre - Correspondence

Call centre personnel are responsible for all correspondence received at ARMS Ltd. Since March 2011, all correspondence received is being scanned and embedded in the clients' accounts for employees to have a holistic picture in each client's file. ARMS management claims that with regard to emails and following an automatically generated acknowledgement, queries are usually answered within 3 weeks. NAO requested evidence of such a practice but no activity log audit trail is available.

It is to be noted that at present there is no integration between the logging of customers' contacts and the system in general, with the consequence that time taken to solve a query cannot be measured. ARMS Ltd. claims it has future plans to introduce an electronic information management system and maintains that this will integrate contacts to the system.

ARMS' Web Portal

Clients can also benefit from a number of services available on the new ARMS' web portal, accessible at https://www.smartutilities.com.mt, as discussed in further detail in Section 5 of this Chapter. ARMS Ltd. encourages its clients to handle their own cases via the organisation's portal without resorting to ARMS' customer care (in person or via other media) wherever possible. Such an approach is aimed at serving customers from the comfort of their homes whilst reducing the number of people calling in person at ARMS' offices, whenever this is possible.

4. Analysis of Customers' Contacts with ARMS Ltd.

Every week, ARMS management meets to discuss and review various matters and issues impinging on the day-to-day running of the organisation. reviews include analysis of statistical figures related to the calls received at the call centre, number of persons calling at ARMS' front office and weekly funds collected. The discussed reports also include statistics related to direct debits such as the number of bills sent by post daily, information about credit control, disconnections carried out and suspension letters issued. ARMS' Management Board also analyses weekly statistics related to the number of processed and outstanding customer requests and a non-comprehensive set of categorised complaints per item (such as meter reader visit notification, declaration of premises not in use and opening of new services). Such statistics keep management updated on the status of requests and complaints (including backlog) being dealt with by customer care staff but most importantly give management a snapshot, albeit lacking sufficient detail, of the type of requests being raised at ARMS Ltd.

In addition, ARMS Ltd. has implemented a series of Key Performance Indicators (KPIs) that are monitored and reviewed during management's weekly meetings. The usefulness of such KPIs is further discussed in the Chapter related to meter reading and billing. It is the opinion of NAO that despite providing a general overview of some of the key aspects impinging on the organisation's overall performance, these are not thoroughly indicative of the holistic operating scenario and only illustrate part of the situation. The categories addressed are generic and limit ARMS' ability to analyse prevailing trends and behaviours. As a typical example, KPIs fail to address all customers' contacts through physical mail and email. As a result, more fine-tuning is necessary to allow for more specific and meaningful KPIs.

ARMS management claims that in addition to the review of such statistics, there are instances where faults and/or errors are triggered by customers' complaints rather than through analysis. In particular, there was an instance where a customer's complaint led to the identification of a batch of wrong bills which were then retrieved, corrected and re-billed.

In order to be able to better understand the analytical process carried out by ARMS Ltd., it is worth noting the type of information available. In theory, for each interaction with the customer, employees create an interaction record to record all types of contacts with ARMS Ltd. This forms part of the account of the client in question and enables front-line officers and call centre personnel to have access to every record in the clients' accounts. Management notes that although it is practice to create an interaction record for every contact with ARMS Ltd., at times some employees at customer care front-office by-pass this practice to speed up the number of customers being serviced. The practice is however strictly enforced at the call centre since this is the highest volume of interaction per day received at ARMS Ltd. Management claims that it continues to enforce the need to create an interaction record as these help employees in that they facilitate any action or rectification needed. Such logs can in theory be beneficial for analysis in that they would enable management to examine the type and the causes of calls at ARMS Ltd. in sufficient detail to further improve its service levels. However, it can be noted that when logging, ARMS Ltd. does not distinguish between queries and complaints when it comes to the number of customers' contacts. This hinders comprehensive analysis of the type of contacts at ARMS Ltd. The lack of availability of detailed nature of queries and/or complaints when carrying out analysis exercises likewise hinders the production of meaningful results in management and statistical reports. This is also discussed in Chapter 4 (Technical Report on the Transition from the Legacy System to IUBS) of this Report.

One other direct consequence of this deficiency is the non-availability of trend analysis. ARMS management claims that knowledge related to the trend of the major type of complaints is obtained through customer feedback. NAO opines that an in-depth, formal analysis of past information is critical in this regard as it helps management to better understand current trends and predict, with a certain degree of assurance, future events. Such analysis is also a critical component when ensuring corrective action and timely resolution of issues arising. In addition, these exercises help gauge a company's performance over time, enabling management to compare prevailing with previous performance.

The fact that no studies and trend settings are being carried out limits ARMS management in comprehending what progress is being made in specific areas. NAO requested a trail of the periodical analysis carried out per query or complaints category. More specifically, NAO requested a list of complaints received by ARMS Ltd. through all communication channels per complaint type, per communication channel, per month. In view that NAO was informed that such data is not available, the same list of complaints without analysis by communication channel would have been considered and was requested. Eventually, NAO was provided with two lists; the first illustrating the number of contacts per category for the period January 2010 to mid-July 2011 and the second one illustrating a less detailed breakdown of contact per category per month, starting from January 2011. The latter was not as comprehensive as the first list of statistics and only included the following generic categories: Bill Enquiry, Fix Appointment, Meter Reading, Smart Meter, Subtotals and Technical Water. The lack of information per detailed nature of complaint hindered NAO from determining a comprehensive trend with customer complaints in general over the months deemed beneficial for this exercise. Even more critical, the lack of information, as explained above, hinders ARMS management from being in a position to run on-going detailed analysis of customer complaints.

In addition, the same data is not being analysed consistently. Methods of analysis are non-standard and none are leading to the establishment of trends. It seems that, to date, ARMS Ltd. has not established a fixed set of contact categories for analytical purposes but is making its analysis through changing dimensions. In general, this does not enable the monitoring of trends through the availability of data.

For instance, following issuance of bills it would be useful for ARMS Ltd. to work out and analyse the correlation between batches of bills sent, and customers' complaints during that same period of time. The proportionality of complaints and issued bills keeps management attentive to particular trends and, if possible and within its control, avoid similar situations in the future. Such analysis, however, is not really possible as in the recorded logs, there is no distinction between those customers complaining on 'wrong bill' and those complaining that they did not receive the bill, rather such complaints are all classified under the generic category 'Bill Enquiry'.

5. Developments since October 2010

ARMS management claims that it adopted various measures in its aim to give a better customer service to its clients and reduce the amount of complaints being registered during peak periods July to September 2010. They mentioned a number of initiatives and measures taken after October 2010 which include the following:

- ARMS Ltd. started accepting payments at Birkirkara Local Council. ARMS management expressed its intentions to extend this service to Mellieha and Cospicua Local Councils in the near future.

- In May 2011, ARMS Ltd. launched the new web portal. Clients were made aware of the new website and the related on-line services through various marketing initiatives, including the distribution of a flyer to all customers promoting the launch of the portal, news articles on newspapers, word of mouth through ARMS' call centre and offices and other promotions during the Malta Trade Fair. Besides news and updates, information on the new portal includes details about changes to water and electricity bills, instructions related to the direct debit application and the smart meter user manual. The website also offers a variety of services, some of which follow. Clients can:

    - amend their personal and accounting details
    - apply for payment via direct debit
    - send a declaration for social service assistance
    - transfer an electricity/water account for property rent/sale.

    Customers can also provide their electricity and/or water reading, request an up-to-date bill, update the registered number of persons and verify any pending dues. All application forms can be downloaded through the web portal. On-line facilities for payment were also enhanced. In July 2011, ARMS Ltd. recorded 1,153 online payments via the website. ARMS management claims that the online portal will add even more value to consumers once smart meters are connected as this will enable customers to have direct access and thus monitor their own consumption in real time.

- ARMS Ltd. reviewed the whole list of application forms, eliminating the old combined forms for different services. The new forms are individualised for different services, complete with documentation requirements.

- ARMS Ltd. introduced 6 per cent interest in favour of the client on paid overestimated consumption when compared to actual consumption in subsequent bills. Besides bringing about equality between the company and its clients, such a measure was also aimed at decreasing the clients' perception that ARMS Ltd. is inflating the estimated bills on purpose for better cash flow.

- Following the introduction of smart metering in Mdina during August 2010, ARMS Ltd. extended this to Manikata in December 2010 and Zurrieq in June 2011.

- In August 2011, ARMS Ltd. moved to Gattard House, Blata l-Bajda. Such a move was aimed at providing a more efficient customer service through a better layout designed to handle customer queues. ARMS management claims that changes in the traffic system and pedestrian zones in the area aim to facilitate customers' experience even further. However, it is to be noted that the area does not have sufficient parking for the amount of customers who will be served at Gattard House with the only available parking being across a busy arterial road.

6. Concluding Remarks

During 2010, especially between July and September, various reports related to ARMS' customer care function featured in the media. ARMS management attributes this situation and the radical increase in customers' contacts with ARMS Ltd. to a number of factors, including the following:

- closing down of Valletta offices and relocation to Luqa;
- excessive waiting time prior to being served at ARMS offices;
- the introduction of a new billing system, implying a number of teething problems to be dealt with and time required by employees to get familiar with the new system;
- increase in utilities' tariffs;
- errors in customers' bills, and
- issuance of government's energy allowance resulting in an increase in queries from consumers.

ARMS Ltd. took a number of measures to mitigate this situation. However, it is the opinion of NAO that matters could have been dealt with more efficiently if ARMS Ltd. had a customer care manager dedicated solely to strive towards the smoother running of the customer service operation.

With regard to resolution of customers' complaints, although relevant figures are frequently discussed during management's weekly meetings, trend analysis of the gathered information is not being carried out. In addition, despite being dealt with by the officers at the Call Centre, complaints put forward to ARMS Ltd. through email and physical correspondence are not measured to be analysed by the organisation. Reference to this factor is also made in Chapter 4 (Technical Report on the Transition from the Legacy System to IUBS) of this Report.

Through the number of logs registered within the Company's Information System, ARMS Ltd. can further analyse the root cause of major issues and problems. As previously noted, the situation is further complicated due to the fact that ARMS Ltd. does not distinguish between the queries and complaints registered.

CHAPTER 6 - PREMISES

1. ARMS Relocation from Valletta to Luqa Offices

Amongst other complaints, customers criticised the decision to relocate ARMS' offices to Luqa, with Valletta offices being completely vacated on 26 March 2010 due to the commencement of the City Gate Project. This decision was partly attributable to the fact that WSC offices were also in Luqa. ARMS management claims that, given the circumstances during that time where an alternative place had to be found at once, Luqa premises were deemed as satisfactory for the function of ARMS Ltd.

Complaints were made in view that the offices in Luqa were not as easily accessible as those in Valletta. This was creating problems, especially for customers who had to take two buses to reach the new offices in Luqa and for elderly persons. In addition, there were customers who complained about the lack of parking space availability at Luqa.
With regard to employees, ARMS management claims that the impact of the move to Luqa offices on the former was the normal temporary reaction expected of any change.

ARMS move from Valletta to Luqa may have created some problems. The reduced accessibility may have created an additional barrier to those wanting to contact ARMS Ltd. physically. NAO believes that greater efforts should have been exerted to find an alternative location in closer proximity to the original (Valletta) premises from where to operate.

2. ARMS Relocation from Luqa to Gattard House, Blata l-Bajda

On the 24 August 2011, ARMS Ltd. transferred its workforce and operations to Gattard House, Blata l-Bajda. ARMS management claims that the easily accessible location was one of the key factors in the decision taken by Ministry of Finance, the Economy and Investment (MFEI) to opt for Gattard House as the premises for ARMS Ltd. In order to make it easier for clients to get used to the new location at Gattard House, and to ensure that clients were served better a number of changes were put in place:

- a welcoming reception area and offices;
- a new logical walking flow for clients, which avoids confusion and waste of time;
- cash being handled by all front-line officers which is another step forward to achieve a one-stop shop service;
- the installation of a new queue display and audio system aimed at providing customers with a real time update of their progress in the respective queue;
- the setting up of 3 meeting rooms which are used by clients in specific cases, and
- segregation between customers and back office staff so that noise does not disturb support staff.

Traffic management and road safety were also addressed through the installation of pelican lights for the benefit of customers and employees parked across the main road.

It is to be noted that ARMS Ltd. also carried out an information campaign through newspapers, radio, internet and their call centre informing clients of the relocation of services to Gattard House.

Lease conditions of ARMS Offices at Gattard House

With regard to ARMS' 8-year lease agreement at Gattard House, reached with the MFEI via a direct order, ARMS management notes that the offices lease per annum amounts to €78,757 for property rent.

Management also claims that initial refurbishment and move-in costs amounted to €1,160,000. In addition, it is calculated that cleaning costs will amount to €25,000 per annum whereas budgeted security costs will amount to €6,000 per annum. Management claims that, to date, recurrent costs related to general maintenance, water and electricity costs and administrative costs are difficult to quantify and thus costs have not been projected.

ARMS Ltd. is purchasing Network, UPS and IT Support services as part of its IT services and products for Gattard House. Networks and Uninterruptible Power Supplies (UPSs) are expected to cost €40,000 whereas IT Support services are expected to cost €25,000 per annum.

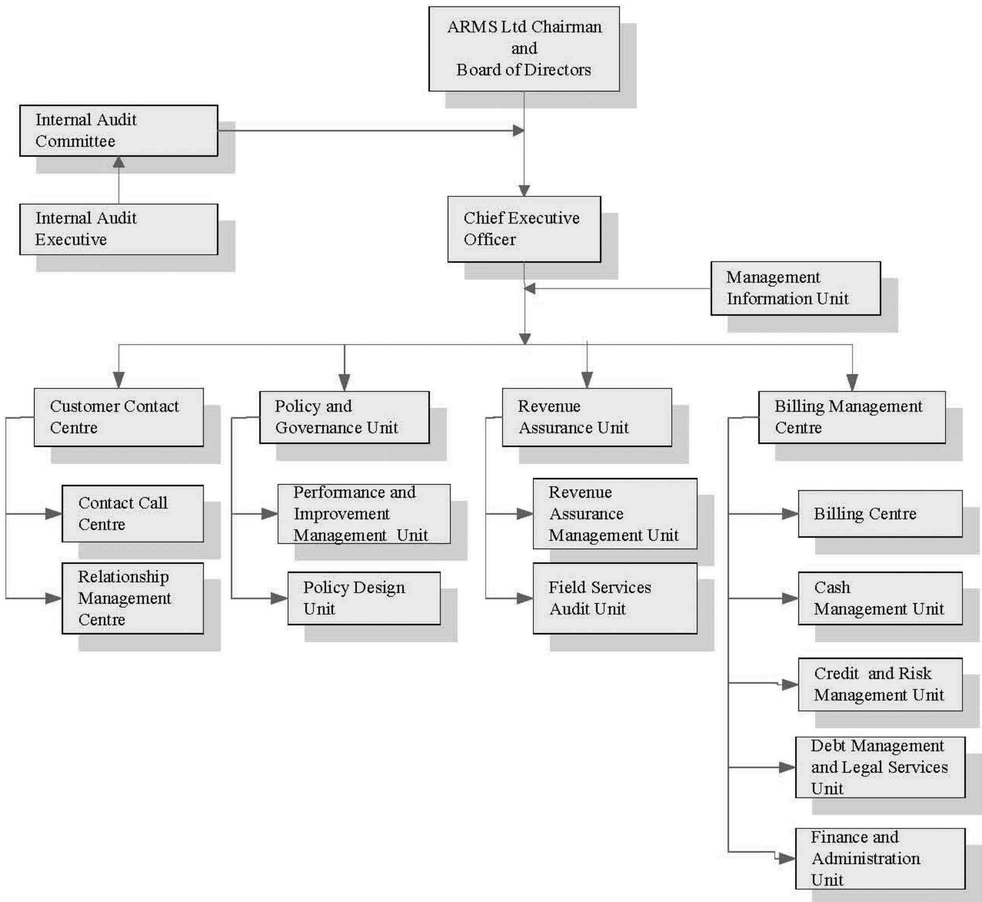
It is to be noted that, with the opening of ARMS offices at Blata l-Bajda, the Luqa premises were closed down. Thus, clients wishing to query a bill in person can still only do so at one particular location in Malta. While payments can be effected at third parties' offices, such as local councils and MaltaPost, the latter are not resourced or empowered to deal with customers' queries.

CHAPTER 7 - LINE MANAGEMENT AND KEY STAFF RECRUITMENT

1. Proposed Organisational Structure

The initial design of ARMS' organisational structure was drafted by the ARMS Ltd. Change Management Team (CMT)[1] in their July 2009 document titled "Proposed Organisational Design". Figure 2 below refers.

Figure 2: Functional Organisational Design of ARMS Ltd.



Source: Document 'ARMS Ltd. - Proposed Organisational Design'

The structure provided for a Chairman and a Board of Directors to head ARMS Ltd., with a Chief Executive Officer (CEO) and four Line Managers to be responsible for the day-to-day running of the company. An Audit Committee and a Management Information Unit were to provide added support to management.

The above organisational structure was approved by ARMS' Board of Directors and was, for the most part, adopted as the company's organisational set-up.

2. Current Organisational Set-up

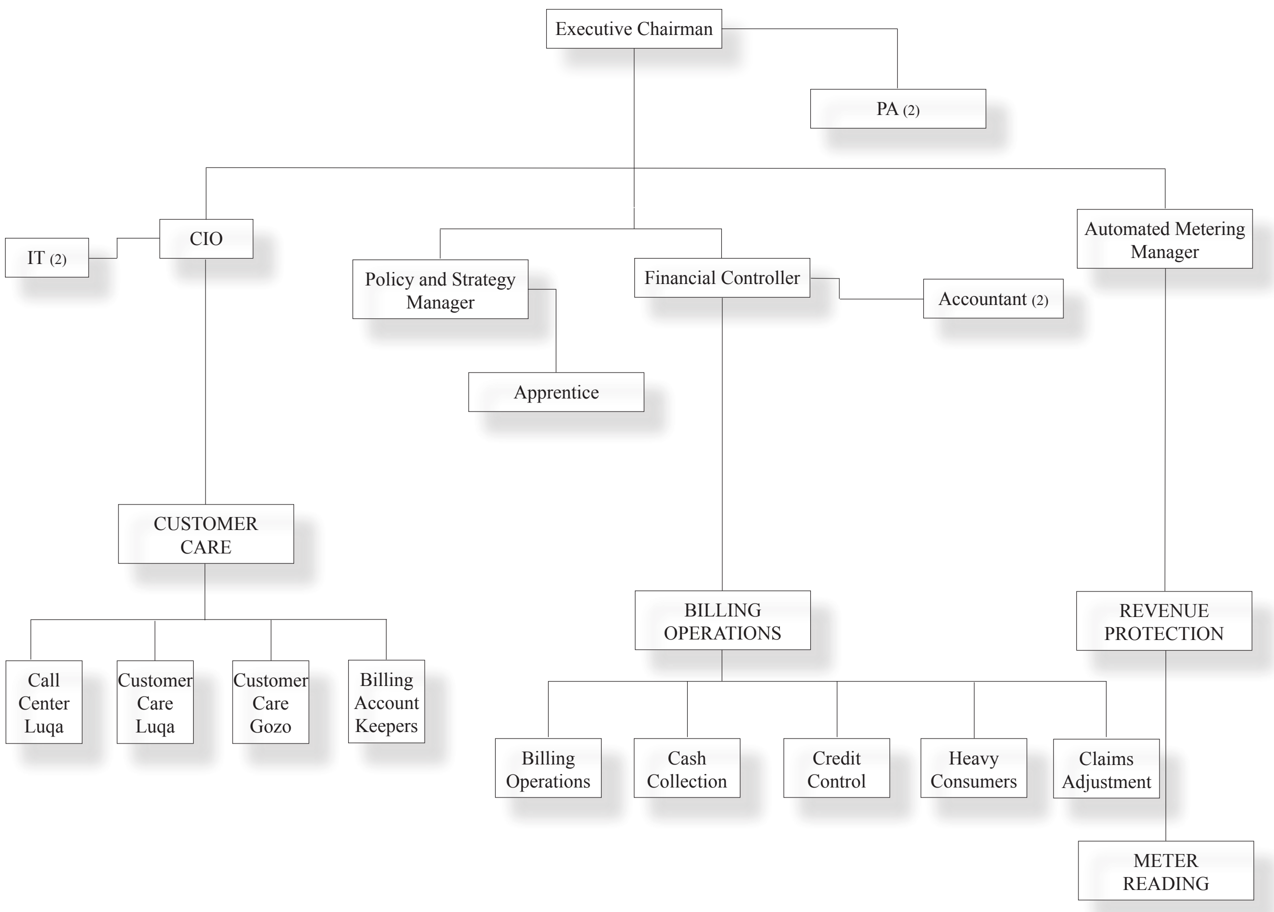
ARMS Ltd. is currently headed by an Executive Chairman and four Departmental Heads responsible for (a) Automated Meter Management (AMM), (b) Customer Relationship Management (CRM), (c) Finance, including Billing and Credit Control and (d) Strategy and Policy. According to ARMS management, the company is still not administratively equipped

[1] The Change Management Team, supported by an external consultant, was responsible to draft a Strategic Plan for ARMS Ltd.

to handle administration-related functions, except for finance which is managed by one of the Departmental Heads (the Financial Controller). It is the company's intention to employ a Corporate and Human Resources Co-ordinator to handle administrative issues. ARMS Ltd. intends to outsource other functions, such as ICT support[2], office cleaning, maintenance, and security. Currently these functions are being provided by WSC. ARMS Ltd. also employs a number of administrative support staff. Employees with WSC/EMC assigned on customer care and billing functions are at present seconded to ARMS Ltd. since it has assumed the responsibility for these functions. However, various changes to this set-up are envisaged, not least because certain functions - such as meter reading - will eventually become automated and personnel on these duties will, in due course, need to be redeployed elsewhere. Subsequent to meetings with the Central Bargaining Unit, and in line with directives that the company's organisational structure needed to conform to government existing structures elsewhere, discussions between the Union representing WSC and EMC personnel seconded to ARMS Ltd. and the company are being held so that these personnel, now deployed with ARMS Ltd., are actually transferred onto the books of the company. This matter is discussed in more detail in Chapter 8 of this Report.

An organogram of ARMS Ltd. set-up as at October 2010 is given at Figure 3 below.

Figure 3: Organisational Set-up of ARMS Ltd. (as at October 2010)



Source: Document: ARMS Ltd. - Billing/Customer Care (October 2010)

a. Board of Directors

According to the Memorandum of Association, ARMS Ltd. *"shall be managed and administered by a Board of Directors to be composed of not less than three (3) and not more than nine (9) Directors"*. The first Board was made up of three Directors who, at the time, were officers within the Ministry responsible for the Utilities and each of the Corporations. One of the Directors was appointed as Chairman of the Board.

[2] In August 2011, ARMS Ltd. issued a call for tender for the provision of ICT support services. *(Ref. ARMS/T/46/2011).*

b. Executive Chairman/CEO

Initially, the organisational structure of ARMS Ltd. provided for the post of a CEO to be responsible for the running of the company. There was, in fact, a recruitment process for this post and a number of interviews were held. A candidate was selected; however, the position was declined. In the circumstances, and in order not to leave the company without a full-time CEO, it was decided to go for a direct appointment. In the interim, the Utilities' CEOs were responsible for ARMS Ltd. although the CEO WSC oversaw the day-to-day operations of the company. The rationale for this decision was based on the fact that the employees carrying out customer care and billing duties on behalf of ARMS Ltd. were WSC employees. During this time, ARMS' Chairman was responsible for the company's internal operations and formally stood in for the missing CEO in company matters.

In October 2010, an Executive Chairman for ARMS Ltd. was directly appointed by the Minister of Finance, the Economy and Investment, under whose portfolio the company was by then allocated. The post was deemed to be a position of trust. The Executive Chairman signed a 5-year term contract with ARMS Ltd.

Additional insight into the appointment of ARMS' Executive Chairman, and the problems encountered by ARMS Ltd. as a start-up company operating without a CEO, is given in Chapter 9 of the report dealing with Management Perceptions.

c. Departmental Heads

The four Officers currently occupying the posts of Departmental Heads at ARMS Ltd. were previously Chief Officers or Managers within either of the Utilities. According to the company, *"they were identified on the basis of their expertise, experience and knowledge in the different areas they service. The AMM Manager was previously in charge of the Revenue Protection and Meter Section within Enemalta Corporation, and was made responsible for the implementation and operation of the AMM system at ARMS Ltd. The former Chief Information Officer at WSC was given the responsibilities of Project Manager of the CRM and Billing functions and the ICT infrastructure, and now occupies the post of Chief Information Manager (CIO) at ARMS Ltd. The former Finance Manager at Enemalta Corporation was appointed Financial Controller within ARMS Ltd. and was also entrusted with the implementation of the ERP platforms across both Corporations. He is also responsible for the Billing and Credit Control Functions within ARMS Ltd. The ex-Corporate Strategist at Enemalta Corporation had contributed significantly to the drafting of the IUBS tender and has extensive knowledge with regard to the scope of the project. He was appointed Strategy and Policy Manager within ARMS Ltd. and is responsible for Change Management within the Company. All Departmental Heads were engaged in May 2009 and are on a three-year definite contract"*.

Asked who was responsible for the decision to go for incumbents rather than issue a call for applications, ARMS management stated that, when the company was set up, the CEOs of both WSC and EMC took the decision to go for serving officers within the Corporations. This decision was taken in view of the experience and knowledge which these Officers had gained during their tenure with the Utilities and which was required for the positions within ARMS Ltd. All four Departmental Heads had been employed with their respective Corporation for a considerable number of years before being recruited by ARMS Ltd.

d. Other Support Staff

Since its setting up, a number of administrative support staff was recruited by ARMS Ltd. An Accountant and an Accounts Clerk were engaged through a public call for applications issued by ARMS Ltd. They were respectively engaged in February and June 2009. Two Personal Assistants were recruited by EMC in January 2009 and were seconded immediately to ARMS Ltd. According to ARMS management, at the time the company did not have the necessary administrative set-up to cope with recruitment, therefore the task was handled by EMC. ARMS Ltd. has also recruited a Business Analyst and a Quality and Service Coordinator. The Company is in the process of recruiting a second Business Analyst and a Corporate Services and Human Resources Co-ordinator.

CHAPTER 8 - SECONDMENT OF NON-MANAGERIAL GRADES AT ARMS LTD.

1. Employees' Secondment at ARMS Ltd.

Since commencement of its operations on 19 January 2009, ARMS Ltd. was manned by WSC personnel and 2 EMC staff, with employees, however, being answerable to ARMS management. Employees were verbally informed that they would report to ARMS management by the Chief Executive Officer of WSC. All employees, of whom 114 worked on a full time basis and the remaining on reduced hours (as at October 2010), were transferred en bloc to ARMS Ltd. and secondment of employees was agreed between ARMS Ltd. and the employee union representatives.

From the very beginning, the idea was to transfer those WSC employees who were previously carrying out duties of Customer Care and related meter-to-cash operations to ARMS Ltd. This notion was supported by a proposal drafted by the Change Management Team and accepted by the Board of Directors of ARMS Ltd. Subsequent to a meeting with the Central Bargaining Unit, discussions and negotiations commenced with the General Workers Union (GWU) so that those WSC and EMC staff working with ARMS Ltd. would be eventually transferred onto the books of ARMS Ltd. In the interim, it was agreed for WSC to continue to pay employees' salaries and then recoup it from ARMS Ltd.

2. Employees' Job Descriptions and Working Conditions

Prior to the actual secondment, ARMS management was charged with the responsibility for communicating and explaining the set objectives to all the company's stakeholders, primarily WSC - as the employer - and WSC employees so as to instantly start off with the necessary input and support from the parties involved. When seconded at ARMS Ltd., employees' job descriptions were not changed from the ones at WSC, as it was deemed that the original job descriptions covered all the related roles and responsibilities. In this regard and as per ARMS management declaration, the only difference was that since ARMS' inception all roles and responsibilities were being enforced as opposed to the approach adopted pre-ARMS. This was mostly due to the adoption of a new approach; the notion of a one-stop shop which, unlike the previous system, entails dealing with all those requests and queries relating to utilities except for applications for new electricity services (which are, to date, still handled by EMC). The idea of a one-stop shop should, in theory, increase economies of scale through the reduction of resources to man it. In addition it offers a far more convenient and consistent service to customers. Furthermore, a customer can be served by one front-line officer for whatever service request, queries and/or complaints without requiring that the customer re-queues or waits for a reply from another ARMS' officer. Similar to the concept of having the same job descriptions, employees' pay package remained the same. In this regard, NAO requested salary details and tried to reconcile figures provided by ARMS Ltd. for years 2008 and 2010, taking into consideration the explanations being furnished by ARMS Ltd. to describe the variances. However, on the basis of the datra provided, such a reconciliation exercise was could not be carried out and NAO was unable to conclude whether salaries had in effect remained the same or not.

No changes were effected to employees' job conditions and working hours although there was more frequent resort to overtime; however changes were made in the number of hours that the offices were open to the public to the address the considerable increase in 'contacts' by the public with ARMS Ltd. Specifically, prior to August 2010 customers were served between 8am and 12pm.

Notwithstanding the unchanged job descriptions and working conditions, cognisance needs to be taken of a number of factors that may have impinged on employees' mindset following their secondment at ARMS Ltd. Besides change in the work environment from the Valletta offices to the Luqa premises and the consequences of such a move on clients' behaviour towards the ARMS' customer care centre, employees underwent a process of familiarisation with the newly deployed system replacing the legacy one. Furthermore, the aforementioned notion of a one-stop shop entailed that employees became more familiar with the various phases involved and the specific ways of handling all types of queries and complaints. In addition, the new system required employees to document each query and/or complaint and unlike the previous system, the new system had an audit trail. This meant that the system required more accountability regarding daily tasks and duties on the part of employees.

3. Employees' Initial Experience at ARMS Ltd.

ARMS management opines that the above issues (particularly the secondment issue) may have generated a general sense of uneasiness and insecurity amongst employees. It is ARMS management's opinion that this was further complicated by a number of other events which increased the number of customers' 'contacts' with ARMS Ltd. Such occurrences included issues related to bills issuance, utility rates hikes and the issue of subsidy cheques through the use of ARMS database as taken over from the legacy system. The consequence of the combination of such events meant that ARMS' employees were facing and dealing with worried, agitated and angry customers on a daily basis. It is to be noted that at the period in question, specifically mid to third quarter 2010, various reports highlighting the prevailing situation featured in the media.

ARMS management claims that rather than a question of resistance to new regulations, procedures and practices, employees were enduring a sense of uncertainty due to various changes and new approaches that had to be adopted simultaneously at the new work place. In tandem with the aforesaid events, employees were aware that their 'employment' conditions were still at preliminary discussion stage between management and unions. The ultimate objective of these meetings is to arrive at a mutually acceptable position that would be solidified through the endorsement of a collective agreement on the basis of which ex-WSC employees would be transferred formally to ARMS Ltd.
On the same note, the new system necessitates users to document each query and/or complaint, for the purposes of audit trail creation and maintenance. This feature, while recommendable as it provides greater accountability regarding daily tasks carried out by system operators and provides a history of transactions, correspondence, interventions etc. per consumer, requires more (user) input than the legacy system it was replacing.

It has been established that the project's primary focus revolved around changing and implementing the actual software system (replacing the legacy one) and related applications, and thus employees' issues were initially, to a certain extent, put aside. NAO opines that, in view of the potentially disruptive experiences discussed above and of the fact that success of the changeover was also dependent on the level of ownership of these employees, it would have benefited both ARMS Ltd. as the eventual employer and the employees themselves had a dedicated Human Resource (HR) function been in place.

On its part, ARMS management contends that, in an attempt to ease the effects of these negative influences on the workforce, the line managers themselves were actively guiding personnel in dealing with the general change and the new system. Management also claims they participated in dealing with customers' queries and complaints, aiming to reinforce the customer care division and showing employees management was also present to share the 'burden' and the difficulties that arose.

4. Temporary Staff Assisting ARMS Ltd.

Initially, ARMS Ltd. recruited temporary staff to support data cleansing and other project related activities. Following this recruitment in June 2009, ARMS Ltd. opted to continue with the assistance of a number of temporary personnel. As affirmed by ARMS management, the decision to opt for temporary staff was taken by the former ARMS' Board and was also approved by the Ministry of Finance, the Economy and Investment (MFEI). Despite being deployed at the organisation prior to the appointment of ARMS' CEO, the latter fully co-divides and approves the engagement of such temporary services.

From a one-off agreement, ARMS Ltd. kept on extending this service on a month by month basis to cover busy hours and meet the increase in customer contacts. Off days, maternity leave and reduced hours utilised by ARMS Ltd. personnel were also to be covered by the engaged temporary staff. ARMS management claims that the cost per capita of hiring temporary staff is generally less than that for WSC and EMC employees. Assuming that all employees are entitled to the same remuneration package, the average rate per hour for WSC and EMC employees is estimated at €12.80 (allowing for leave days, holidays and reduced hours). In contrast, the average temporary's staff rate is estimated to cost ARMS Ltd. €8.61 per hour. This confirms that the amount paid to WSC and EMC personnel is still noticeably (48.7%) higher than the charge-out rate of temporary staff.

Currently, the request for temporary staff is on a demand basis, with around 12 to 15 employees at any one time. Temporary staff performs the same tasks as those carried out by WSC and EMC employees seconded at ARMS Ltd. Between the period February to December 2010, temporary staff was paid a total of €175,136.20 (inclusive of VAT). During this period, temporary staff increased from one employee during February to 11 employees in December.

Management also claims that as per studies carried out it is envisaged that through the new system, the increase in automation will lead to a natural decrease in personnel. As a result, in view of the fact that various parts of the prevailing workload will eventually be phased out, resorting to temporary staff is deemed to be a solution preferred to recruiting.

Training to temporary staff was given on-the-job by employees seconded at ARMS Ltd. Furthermore and as per ARMS management claims, at any point in time and just like other employees, temporary staff can refer to the organisation's Standards of Procedures (SoPs).

With regard to the working relationship between WSC/EMC employees and the engaged temporary staff, ARMS management claims that the two have integrated well together.

5. Developments

Opening times prior August 2010, as stated above, were 8 am to 12 pm. Between August 2010 and June 2011, servicing hours were extended to 2 pm. With effect from 27 June 2011 the opening hours were reverted back from 8 am to 12pm. One can comment that NAO hopes ARMS Ltd. carried out proper analysis prior to reducing opening hours. One may have kept the extended hours for consumers' benefit and simply reduced servers if system was depleted.

Initially employees were not cognisant of conditions related to their definite employment with ARMS Ltd. and this created a sense of uneasiness in employees. In addition, ARMS' employees were constantly facing worried and angry consumers at Luqa and with billing in general. The situation was also copiously being reported and commented upon in the media. As a result, employees may have felt uneasy being associated with ARMS Ltd. ARMS management opines this uneasiness as subsided, claiming as evidence the fact that the employees themselves, through their union, agreed to be seconded to ARMS Ltd. under the terms of the agreement reached between WSC, ARMS Ltd. and General Workers Union (GWU), and claims that this illustrates that this situation has since improved. Details about this agreement follow.

During the period January 2009 (ARMS formation) to March 2011 there had never been any formal agreement regarding employees' secondment at ARMS Ltd. and the employees retained their previous duties and conditions as at WSC. A tripartite Interim Agreement regarding employees' secondment was reached between ARMS Ltd., WSC and the GWU (as the recognised union) on 10 March 2011. The agreement stipulates that 137 employees were to be seconded from WSC and EMC to ARMS Ltd. *"with a guarantee that they would continue to enjoy working conditions not less favourable than those that they currently enjoy at the WSC"* until a new collective agreement would have been discussed, agreed to and endorsed. The seconded employees fall under the direct responsibility of ARMS Ltd. management and were ultimately accountable to the Executive Chairman and/or his representatives. Employees were to continue carrying out duties pertinent to their salary scale. With regard to seniority and seniority computation, it was agreed that ARMS Ltd. would recognise years of service with the WSC or the Government (if the latter is the case). A copy of the agreement in question features as Appendix 10 of this Report.

Following the endorsement of the above-mentioned Interim Agreement and in line with its provisions, ARMS management was to proceed with the negotiation process related to the formulation of a new employees' collective agreement. As at end October 2011, the above mentioned collective agreement has not yet been signed, and as such the Interim Agreement is still in force. However, ARMS management claims that the process of arriving at a mutually acceptable collective agreement has reached an advanced stage.

ARMS management describes the collective agreement as ensuring the financial viability of the salary structure within the organisation, while simultaneously ensuring that employees are kept motivated to retain their posts and to reach levels of performance in line with and in support of ARMS Ltd. objectives.

In this regard, ARMS management claims that during the negotiation period it keeps employees updated and informed of the situation and proceedings in general. This is not co-divided by employees, as discussed in Chapter 10 (Perceptions of Non-Managerial Grades Regarding Various Related Issues).

CHAPTER 9 - ARMS MANAGEMENT'S PERCEPTIONS REGARDING VARIOUS RELATED ISSUES

1. Introduction to Management's Perceptions regarding Various Related Issues

Management's way of seeing, understanding and interpreting behaviours and events within an organisation has significant influence on the organisation's overall direction and corrective actions taken in response to such behaviours and events. As a result, for a better understanding of the whole scenario it is worth taking into consideration management's perceptions relating to a number of key issues, notably:

- challenges related to the new system adopted;
- challenges faced and problems tackled after the 'go-live' date;
- snapshot as at October 2010 and remedial action taken;
- lack of CEO for the first 10 months of ARMS operation;
- the appointment of ARMS CEO;
- employees deployed at ARMS Ltd.;
- the organisation's Human Resource (HR) function, and
- further action taken after October 2010.

These key issues are discussed in further detail below.

2. Challenges Related to the New System Adopted

Initially the Utilities were considering the Business Process Outsourcing (BPO) model of the IUBS (Integrated Utilities Business Systems Strategic Partnership) solution, however this option was rejected due to the extent of proposed related costs which were deemed to be excessive. The BPO option may have also created potential issues regarding the re-deployment of WSC employees.

Apart from the BPO model, there were, according to the Ministry for Infrastructure, Transport and Communication (MITC), another three options as listed below.

- *Withdrawal of the tender*
  According to MITC, this option was a no-go for various reasons, primarily the fact that WSC was making use of a thirteen-year old billing system which had become archaic and was not serving its purposes despite all the enhancements. In addition, management claims that the tender could not be withdrawn because the Utilities required a system which facilitated the sharing of data by both EMC and WSC.

- *WSC to take over the operation*
  WSC had always been the entity responsible for handling operations related to the billing of water and electricity services, hence being responsible for both WSC and EMC funds. The option where WSC was to take over the operation was deemed not desirable by EMC as the Corporation wanted to restore control on its share of funds once bills were issued.

- *WSC and EMC to join forces*
  Ultimately, the Utilities opted for the joining of forces and setting up of a special-purpose-vehicle option. In the circumstances it was deemed (by the Utilities) that this was indeed the best solution to go forward.

With regard to the decision relating to the opted-for system, ARMS management notes that it was not involved in the decision to set up ARMS Ltd. Indeed, ARMS Ltd. had not been yet set up at the time.

3. Challenges Faced and Problems Tackled after the 'Go-live' Date

Similar to other complex Information Technology (IT) projects, the IUBS programme had several challenges prior to and after the system's 'go-live'. According to Malta Information Technology Agency's Project Manager, challenges after the 'go-live' date included the following:

- the installation of the IUBS programme had to be done in WSC, EMC and ARMS Ltd. at one go, further increasing the project's complexity;
- all implemented systems within these 3 entities were consolidated in one central system, requiring the 3 entities to re-align to a single set of procedures;
- in view of a considerable number of installations to be carried out within a relatively short timeframe, some of the modules had to be further fine-tuned after 'go-live' to improve performance;
- in view that the new installed software had very tight criteria for issuing bills, the situation was further complicated in that a bill would not have been issued if data was not entered correctly;
- many employees required training in several software modules, initially making it very difficult for users to be confident and fluent in using the system whilst also serving the customer;
- user acceptance and testing of new enhancements had to be carried out by the same limited recourses that were required for the manning of operations of the new system;
- problems related to energy allowances resulted in large queues and increased pressures on the Customer Care Section;
- efforts related to Data Cleansing and Data Migration were severely underestimated, and
- late changes to the bill layout during the implementation of the programme resulted in a tight schedule to reach the deadlines set.

Enhancements Carried Out

Following the initial installation, the system's actual enhancements carried out from the 'go-live' date up to October 2010 included the following:

- simplification of the bill layout;
- Account Statement similar to previous layouts;
- calculation of the bill based on number of persons;
- enhancements in voucher benefits;
- introduction of time window in Customer Relationship Management (CRM) to upload meter readings;
- Management Accounts Reports including aged debtors;
- Net Metering;
- installation groups (for water services), and
- direct debit facility for an additional local bank.

4. Snapshot as at October 2010 and Remedial Action Taken

As discussed in Chapter 5 of the Report related to ARMS' Customer Care function, ARMS management attributes the radical increase in customers' contacts to a number of reasons, mainly:

- a new billing system and the resultant teething problems;
- issues related to quality of data being migrated;
- a significant increase in billing tariffs;
- the closing down of Valletta offices and relocation to Luqa;
- no decision taken as regards to staff at WSC being seconded to ARMS Ltd., and
- errors identified in consumers' data during issuance of government's energy allowances.

Increase in customers' waiting time, and consequently service time, may be also attributable to centralisation of all complaints at one location (as opposed to the multiple areas receiving complaints prior to ARMS inception).

It is pertinent to note that these reasons are management's perceptions. NAO, as reported extensively in Chapter 5 related to the Customer Care function, attempted to obtain analysed figures of complaints submitted, without much success. Such an exercise would have provided substantiation of these perceptions.

To mitigate the situation, ARMS Ltd. took various initiatives including the following:

- increased the number of front-line counters (from 11 to 15);
- extended the working hours to serve customers (by 2 hours);
- liaised with MaltaPost to start receiving part payments from a minimum payment of €100, and
- in May 2011 launched the new web portal which provides a number of services such as the payment facility and customers' provision of their electricity and/or water reading, news and other updates.

Concurrently, ARMS Ltd. continued to make use of services provided by temporary staff and affirms that through such services ARMS Ltd. manages to meet the increase in customer contacts and covers busy hours. Management believes that the envisaged increase in automation will eventually result in a decreased requirement of personnel. Thus services provided by temporary staff avoid the need to recruit employees on a permanent basis that would later have to be redeployed elsewhere. Matters relating to temporary staff have already been discussed in Chapter 8 discussing secondment of non-managerial grades.

During the period July to September 2010, ARMS management decided that the situation could also be mitigated through partnering with another service provider, as discussed below.

World Aviation Group Contract

In order to better serve customers, decrease waiting time, reduce the number of unanswered calls and release the pressure of the increased workload at the Call Centre, ARMS' Board of Directors decided it would be wise to outsource part of the organisation's support service. The Board's intention was for World Aviation Group (WAG) to take over the spill-over calls and reduce the amount of lost calls during peak hours rather than to take over the function. According to ARMS' Chairman at the time, WAG was chosen as the service provider through a direct order in view of the organisation's extensive experience in the sector. Prices and the relevant Service Level Agreement were negotiated and approval was obtained from the Department of Contracts.

According to ARMS management the agreement with WAG proved to be very successful. Management claims that as at July 2011, average answered calls varied between 80 and 85 per cent of all received calls, deemed by ARMS Ltd. to be very positive for call centres in general. ARMS management claims that they meet with WAG representatives regularly to discuss and review WAG's performance. In addition, management claims that they review performance to ensure that actual service levels from the part of WAG is according to the agreed upon service levels found in the relevant Service Level Agreement.

5. Lack of CEO for the First Ten Months of ARMS' Operations

In this regard, ARMS management highlights the importance of realising the difference between the two principal phases of the actual project; project implementation and commencement of actual operations at ARMS Ltd. With regard to project implementation the Board of Directors of the time claims that, even from the very start of ARMS' inception, the lack of a CEO did not really affect project implementation. Management claims that this is probably attributable to the fact that, at the time, the former ARMS' Chairman was following the implementation structure agreed upon with IBM. Furthermore the members of ARMS' Board of Directors, constituted of MITC's policy manager as well as EMC and WSC CEOs, were also present and involved so as to oversee issues and to take the relevant decisions.

Upon the commencement of the actual operations after January 2010, the Board of Directors of the time claims that the lack of CEO at ARMS Ltd. may have affected the organisation's operational side, particularly with regard to the customer care aspect. In this regard the incumbent ARMS management notes that, had the CEO been appointed earlier, ARMS Ltd. would have fared better especially with regard to the overseeing of the customer care section to identify issues and act accordingly.

6. The Appointment of ARMS' CEO

As of 14 October 2010, ARMS' CEO was appointed. During that time, various problems were being faced by ARMS Ltd. and thus a stock take of the situation had to be carried out. ARMS' CEO claims that the main problematic areas were identified and the relevant actions taken, including:

- drawing up and negotiating the business model of the organisation, with the relevant Heads of Terms endorsed in December 2010;
- setting regular management meetings relating to the monitoring of customer contact performance;
- obtaining an interim agreement between ARMS Ltd., WSC and the GWU related to official secondment of staff to ARMS, endorsed in March 2011;
- commencing a concerted effort to drastically reduce the substantial backlog in most sections;
- introducing a 2 per cent rebate on direct debit accounts;
- introducing a 6 per cent interest to clients who paid estimated bills which were overestimated;
- planning, negotiating and launching the move to Gattard House, which occurred in August 2011;
- launching the new ARMS web portal;
- commencing the billing process via smart meters on a locality basis - Mdina, Manikata and Zurrieq;
- reviewing of Key Performance Indicators during the monthly Board Meetings;
- launching a bill payment facility at Birkirkara Local Council, and
- answering generic questions about ARMS and its operations through various means of communication including media programmes.

7. Employees Seconded at ARMS Ltd. and the Organisation's HR Function

Employees Seconded at ARMS Ltd.

Initially, management had planned to operate parallel streams with regard to project implementation and the integration of employees within the structure. During actual implementation of the system, discussions with the employees' representatives were initiated but at a certain point there were a number of issues which, due to the negotiations involved, introduced an element of time lag desynchronising the HR function from project implementation target dates. During the same period other discussions and negotiations relating to a number of EMC employees which were to join the credit control and customer care sections in Luqa were also taking place. Management notes that certain related disagreements were resulting in a number of directives, and other forms of industrial actions that were all having an impact on negotiations with employees' representatives.

ARMS management claims that at a certain point, despite the fact that ARMS Ltd. was still open to discussions regarding the integration of employees' within the new structure, focus had to be concentrated more on the implementation of the project as it was getting critical for the system to be fully functional and in place.

In the mean time the CEO of WSC was in continuous open communication with employees to explain that they were to start reporting to ARMS management.

In March 2011 ARMS Ltd., WSC and GWU reached an interim agreement, whereby it was established that 137 employees were to be seconded from WSC and EMC to ARMS Ltd., enjoying same working conditions as those at WSC until the endorsement of a new collective agreement.

ARMS management expressed satisfaction at the level of adherence eventually achieved by employees to the new work scenario. In particular, management refers to the process of learning to use SAP and the processes involved whilst dealing with a radical increase in customers' contacts.

On a different note, ARMS management notes that at the very initial stages of ARMS' inception, there were tensions and uncertainties amongst employees. Management claims that such behaviour is natural during transitions and major changes, and attributes such uncertainties to a question of ownership from the part of employees as well as the introduction of the new system. Another area of concern during this initial period was the undesired association of WSC employees with ARMS Ltd. which, at the time, was being publicly criticised. Management believes that nowadays employees feel at ease with the idea of being associated with ARMS Ltd.

HR Function

The original plan was to maintain a lean organisation, riding on WSC and EMC Corporations for certain support functions such as procurement and the human resources function so as to enable ARMS Ltd. to focus on its core operations.

ARMS management attributes the fact that the company does not have an HR department as to date employees are still not officially employed with ARMS Ltd.

8. Further Action Taken after October 2010

ARMS management affirms that the type of customers' requests, queries and complaints vary. To deal with this situation as efficiently as possible, management explains that ARMS Ltd. strives to be as flexible as possible through support staff assisting front-line officers.

By way of example, ARMS management quotes the company's involvement in serving consumers' requests brought about by the Photovoltaic panels' scheme. In a holistic drive to give a better service to clients and reduce complaints as much as possible, ARMS management claims to have implemented the following key measures:

- *Introduction of the new web portal in May 2011* - Management believes that customers can be also served through the number of services provided via the new web portal and they expect a significant impact on the overall system within a year. Furthermore, management claims that once smart meters are fully integrated to the back-end, the web portal will give more essential information to customers who will have the ability to monitor their own consumption in real time.

- *Relocation to Gattard House in August 2011* - According to management, ARMS relocation to Gattard House will prove to be an effective move to a layout designed to handle and serve customers better.

- *Smart metering* - Following the introduction of smart metering in Mdina during August 2010, ARMS Ltd. coordinated the introduction of smart metering in Manikata and Zurrieq. In addition, it is planned that by end 2011 smart metering will also be extended to another 2 localities, one in Malta and another in Gozo.

- *Introduction of a 6 per cent interest rate scheme* - This initiative favours the client in cases of overestimated consumption when compared to actual consumption in subsequent bills. Management believes that such a scheme reinforces equality between individual clients and companies and simultaneously moderates the clients' perception that ARMS Ltd. is inflating the estimates bills on purpose for better cash flow.

- *Accepting bill payments at a local council* - ARMS Ltd. started accepting payments at Birkirkara Local Council. Management is planning to extend this service to Mellieha and Cospicua Local Councils in the near future to reach a wider area of customers.

9. Concluding Remarks

While it is being acknowledged that an organisation's management would have sufficient 'hands-on' contact to enable it to form perceptions regarding clients' complaints and nature thereof, it is also possible for such perceptions to derail themselves from reality, if not based on actual clients' complaints analysis. In this respect, ARMS Ltd. is strongly urged to embark upon complaints analysis as reported upon Chapter 5 earlier.

It is also pertinent to note that on the one hand ARMS management admits that the HR 'stream', namely the integration of WSC employees into the new structure lagged behind the project implementation stream, while on the other states that no HR function has been set up due to the fact that (technically) ARMS Ltd. is still not employing this workforce.

CHAPTER 10 - PERCEPTIONS OF NON-MANAGERIAL GRADES REGARDING VARIOUS RELATED ISSUES

1. Soliciting the Perceptions of Non-Managerial Grades

Understanding employees' perception is crucial as it helps management to get acquainted with their staff's perspectives and views of a situation which affects the general behaviour of employees.

The perceptions of management have already been discussed in Chapter 9 (ARMS Management's Perceptions regarding Various Related Issues). By way of presenting a more holistic picture NAO solicited the perceptions of employees:

- to see how the change from the old to the new system (under new management) was implemented from the point of view of non-managerial grades, and
- to gauge the extent to which management's perception of Industrial Relations, Human Resources and operations in general was supported by that of non-management.

It is worth mentioning again that the employees in question (with the exception of 3 to 4 employees) are the same people that used to work for WSC prior to the setting up of ARMS Ltd.

2. Methodology of Staff Interviews

Employees' perceptions were collected through a survey consisting of interviews with twenty officers who come into direct contact with consumers. The selected employees were interviewed through a structured questionnaire covering various topics ranging from duties-related issues, customer contacts, changes, training and the situation prevailing between July and September 2010. The questionnaire form features as Appendix 11 of this Report.

A list of staff comprising the workforce at ARMS Ltd. by section was obtained. Employees of those sections that come into contact with consumers were retained, namely employees from the Call Centre, Customer Care and Cash Office. From each of these sections the section head was chosen, together with a number of other employees (the latter at random).

With regard to the nature of employment of the selected employees, sixteen officers out of the selected twenty employees work on a full-time basis whereas the remaining four officers are on reduced basis.

The nature of the sample taken is better illustrated in the Table below.

Table 16: Sampled Employees

Nature of employment		Section		Grade/post	
Full time	16	Customer Care	9	Officer	13
		Cash Office	4	Senior Clerk	4
Reduced	4	Reconciliation	2	Administrator	2
		Call Centre	5	Acting Head	1

Following completion of all interviews, responses were validated and analysed. The results of the analysis are presented in the next section of this Chapter.

The purpose of the exercise was to solicit the general perceptions and ideas of the workforce, in a qualitative manner. In view of this, the methodology used for sample sizing and selection did not, by design, follow specific statistical rules. Results are to be considered as being indicative of the workforce perceptions and views rather than statistically representative inferences.

3. Employees' Perception - An Analysis

Employees' duties

The majority of interviewed employees claim that they have been furnished with a job description and that their duties are as per the mentioned job description. In this regard, almost all employees working in the customer care section, the cash office, reconciliation and the call centre claim that their present duties are identical to the ones they had before they started reporting to ARMS management. Only four of the selected twenty officers claimed that they had been assigned with extra duties since the ARMS take-over. In general, and as discussed in Chapter 8 (Secondment of Non-Managerial Grades), this confirms management's claims that employees' job descriptions were not changed from the ones at WSC, as it was deemed that the original job descriptions covered all the related roles and responsibilities.

Working conditions

The majority of employees agree that since seconded at ARMS Ltd. they have maintained the working conditions previously enjoyed at WSC or EMC. In this regard, however, half of the selected sample of employees show their concern with regard to the information received regarding the collective agreement negotiations. Specifically, ten out of the interviewed twenty officers are dissatisfied with the information received from ARMS management about the collective agreement, both in the past and present. This contrasts with claims made by ARMS management about their efforts to try and keep their employees informed about the collective agreement being negotiated by management and the employees' representatives.

Temporary staff

Generally, employees believe that temporary staff performs the same tasks as WSC and EMC personnel. This is mostly expressed by employees working at the customer care section and call centre.

Employees confirmed management's claims, as discussed in Chapter 8 that they have integrated well with temporary staff and that the working relationship between employees and temporary staff is a good one.

Employees' empowerment

In the majority of cases, employees feel that their job and the general prevailing work environment allow them to be proactive and take initiative. In this regard, the majority of employees refer to how they have become familiar with the necessary processes and actions without the need to (in 50 per cent of the cases or less) refer to Standard Operating Procedures and manuals in order to answer query and complaints.

Employees claim that when dealing with customers they are empowered to take the necessary actions in 50 per cent of the cases or more, without the need to ask permission from their superiors. Permission is only sought in instances where the case appears to be unique and requires the assistance of the section's superior.

As discussed in Chapter 8, ARMS management claims that they believe in being present on the work floor and actively participating in dealing with customers' queries and complaints. In this regard, the majority of employees affirm that management's presence on the work floor facilitates dealing with queries and complaints, especially when dealing with a query or complaint which would have never been tackled before.

Customers' queries and complaints

When asked for their general opinion on customers' contacts, employees said that when lodging a complaint customers prefer to go to ARMS' offices and deal with the issue in question in person. With regard to queries, employees believe that the medium most frequently resorted to by customers is the phone, thus through the Call Centre. Such an opinion is shared by management. In this regard, it is pertinent to note that it is ARMS policy not to distinguish for purpose of statistical analysis between complaints, queries and suggestions.

The majority of interviewed employees affirm that they deal with all stages of a complaint or enquiry. This is acknowledged particularly by employees working in the customer care section, reconciliation and call centre. Furthermore, 8 out of the twenty interviewed employees state that they deal with customers' complaints in real time in approximately 50 per cent or more of the cases, without the need to keep on working on the matter after customer contact hours.

Almost all employees claim that in 50 per cent of the cases or more they do document enquiries and complaints. This assertion confirms management's claims that for every interaction with the customer, employees create an interaction log to record all forms of customer contacts.

Following the 'Go-live' Date

Employees claim that since the go-live of the new system, changes were indeed affected to work practices. In this regard, the majority of employees affirm that some of the mentioned changes were triggered by suggestions made either by themselves and/or their colleagues.

Almost all the interviewed employees believe that ARMS Ltd. was successful in deploying the one-stop-shop principle, with the aim of serving its customers better. The remaining employees question the success of such an approach due to a number of reasons, notably the following:

- flexibility is taxing on employees;
- longer serving time in view of increased duties carried out in real time mode, and
- in view of a lack of proof of identity, the one-stop notion is not really effective for phone-in contacts.

Employees' Training and Development

Almost all employees confirm management's claim that they have underwent formal training since their transfer to ARMS Ltd. However, half of the interviewed employees claim that they have not received sufficient training to enable them to start operating the software effectively. In addition, 8 employees feel that they have not received sufficient training to enable them to cope with the changes in operations effectively. The latter is mostly felt by those employees working on reduced hours.

Furthermore, the majority of employees confirm management's claims that they have received the training in question before the changes were actually effected.

In contrast with management's claims, the majority of interviewed employee believes that training at ARMS Ltd. is not an on-going process and was mainly given at the time the system went live. This perception is prevalent amongst employees working on reduced hours.

Customer Care Function during period July to September 2010

Employees were asked to give their opinion with regard to the major problems that caused the situation prevailing during the period July to September 2010, when ARMS' customer care function was notably under public scrutiny following a radical increase in customer contacts. According to employees, the prevalent occurrence which caused such a situation concerned Government's energy allowances. Employees explain how their clients were asked to inform ARMS Ltd. about the number of persons residing in a particular household and update account details as necessary. However, it seems that a lot of consumers failed to take notice of such an announcement. As a result and in view of the fact that ARMS' database was not fully updated and may have contained incorrect information, cheques were either wrongly computed or issued to the wrong account holders.

In this regard, employees affirm that the fact that consumers did not inform WSC of changes to account and/or account holder over time was another cause which did not make matters any better during July to September 2010.

A significant number of employees attribute the high turnout of customers and customer contacts to changes in the system and the fact that initially the system was not working properly. As a result, this may have created backlogs which led to a boom of complaints in July 2010. One of the employees comments how in his opinion the system still has a number of unresolved problems to date.

Other employees attribute this peak period of customers' queries and complaints to a hurried change-over, lack of communication between management and employees relating to critical changes and considerable media exposure. The closure of ARMS' offices in Valletta was also cited as a source of customer frustration.

The majority of employees are of the opinion that, given the circumstances, management took adequate corrective measures immediately and kept on doing so during the course of time.

In this regard employees were asked to express their views about any other measures that could have been taken besides the ones implemented by management. Employees' responses included:

- better piloting and less rush with the 'go-live' process;
- further improvements to the new system;
- a more gradual move from Valletta premises to Luqa offices;
- refunds through direct credit to accounts rather than through cheque issuance with regard to Government's energy allowance;
- deployment of relievers to reduce the daily long queues;
- more training to MaltaPost employees, and
- greater resort to overtime for all personnel.

4. Concluding Remarks

There were employees who stated that they believe that ARMS Ltd. has received unfair criticism as the majority of problems attributed to the company (especially during the period July to September 2010) were in existence before its formation. These employees believe that many positive changes have indeed been implemented since the formation of ARMS Ltd.

Others mentioned the company's greater efforts in addressing customers' locked accounts, better checking of correspondence sent out to consumers and a better direct contact between consumers and ARMS' officers.

Following the inception of ARMS Ltd., employees also comment about the inefficiencies and discomfort caused by certain duties, such as cash acceptance by all employees (not just cash officers), and the resultant longer serving time caused by such an extension of duties. Other inefficiencies, such as those caused by the occasional need to rely on WSC sections in Luqa and the re-design of the bill printing process, which in their opinion is still a chaotic occurrence, were also highlighted by ARMS' employees.

On a different note, there were employees who expressed their concerns about what they deem is insufficient communication between management and employees, and casual instances in which they learn about certain initiatives or occurrences through other colleagues rather than management. At times, this is also evident in cases where specific instructions are passed on to employees.

CHAPTER 11 - NAO COMMENTS AND CONCLUSIONS

This Investigation was commissioned by the House of Representatives (HoR) and focused on the setting up and operations of ARMS Ltd., particularly the reasons which led to a considerable number of complaints.

It is however pertinent to note that, while ARMS Ltd was, especially in summer of 2010, the focus of public outcry and negative media coverage, the Company was one of the components, albeit a major one, that led to the prevailing situation.

This Report attempted to review the situation prevailing, leading up to the summer of 2010 and of ensuing developments. In doing so, the Report attempted to correct perceptions and to give HoR and readership a fair and clear picture of the scenario at the time.

As a principle, it is pertinent to keep in mind that when, generally speaking, 'ARMS Ltd.' is referred to, as the 'agency' that took over the billing function from Enemalta Corporation (EMC) and Water Services Corporation (WSC), in reality what was involved was a mega-project designed to effect a major overhaul within the two Corporations, with a scope that was much wider than the actual billing function. This project included:

- the replacement of the core business software - accounting and inventory - used by both WSC and EMC;
- the introduction of software enabling better data storage, analysis and processing - leading to more informed business decisions;
- the nation-wide installation of smart meters, replacing existing electricity meters and enhancing water meters;
- the transition from a manual meter reading/provisional estimates approach to smart metering whereby consumer readings would be transmitted periodically to the service provider systems;
- a customer relations management system, and
- the enabling of remote monitoring and control of equipment in electricity distribution centres (SCADA).

It is likewise pertinent to note that ARMS Ltd., as an offspring of the two Corporations, handling the meter-to-cash function on their behalf, came in late in the life of the tendering process for the acquisition of the entire hardware/software/maintenance/training (termed IUBS - Integrated Utilities Business Systems). Originally, the project had been looked upon as a Business Process Transformation Strategic Partnership where the successful bidder, apart from supplying the above products and services, was also to take over operations and responsibilities dealing with cash to meter tasks, under the Business Process Outsourcing (BPO) model. However, once it transpired that the costs related to the BPO were more than anticipated, the decision was reached by the Corporations to handle meter-to-cash operations in-house. In this regard, one may make mention of the fact that, while the entire IUBS project was embarked upon in 2005, ARMS Ltd. was only formed in 2009, implying that major decisions related to the project had been taken before the Company was set up.

In broad terms, the Investigation considered multiple perspectives of the change-over, with ARMS Ltd. being looked upon as the IUBS interface with the general public. More specifically, these perspectives covered:

- Core ARMS business functions and related issues:

  - **Meter reading and billing** - in the context of the IUBS contract; as an operational cycle; the invoicing process and estimated billing; payment of interest; bills' viding and reversals; locked accounts; billing frequency and intervals; key performance indicators as deployed by ARMS Ltd.; the move to smart meters; bills' designs; payment channels and credit control.

  - **Technical issues** related to the IUBS, to include change control; data quality and migration; testing, and impact assessment at system go-live; backlog of bills through system locks; breakdown in synchronisation of customer information and inconsistency in standing data.

  - **Customer care** related issues such as customer complaints' receipt and handling; issues dealing with premises; queue management; clarity of bills issued; errors in bills; billing timeliness and analysis of customer contacts' with ARMS Ltd.

  - **Premises issues** - specifically the move from Valletta to Luqa and from Luqa to Blata l-Bajda.

- HR related issues:

  - o **Management** - proposed versus implemented organisational set-up; the Board of Directors; Senior Management and Departmental Heads and support staff.

  - o **Non-Managerial Grades** - secondment of non-managerial grades; secondment of employees; job descriptions/ working conditions; initial experience at ARMS Ltd. and the recourse to temporary staff.

  - o **Management perceptions** related to the new system adopted; challenges faced/problems tackled after 'go-live' and enhancements carried out.

  - o **Non-Managerial Grades perceptions** in connection with various aspects to include: duties; working conditions; relations with temporary staff; empowerment; customers' complaints and/or queries; system changes; training and development and problems faced.

It is believed that such a comprehensive insight into ARMS Ltd. and its operating scenario will furnish the reader with a clear picture of the Company and its operational setup. This, in turn, puts the problems that were manifestly evident in the third quarter of 2010 within a context.

What follows are NAO's comments with regards to these various perspectives.

Change in the nature of the Project

What started off as a BPO-modeled acquisition, with the successful bidder taking over operations and relevant responsibilities, was stripped down, with the removal of these, effectively turning the acquisition into procurement of the IUBS components and maintenance thereof. This signifies a major change to the nature of the purchase, midway through a tendering process.

ARMS Ltd. Formation

Although ARMS Ltd., was a separate legal entity jointly owned by the two Corporations (EMC and WSC), the company was in effect line-managed and staffed by EMC and WSC personnel. Similarly, Senior Management from the Corporations sat on the Company's Board of Directors. It was only in the case of support staff and, eventually, of the CEO (when employed) that persons not hailing from the Corporations were in employ at ARMS Ltd.

In this respect, NAO questions whether it was necessary to go to such an extreme solution as to create an agency, with implied additional costs, or whether it would have been possible to arrive at a solution whereby the Corporations would have maintained more direct control over the meter-to-cash function.

The creation of an agency, or middleman, may lead to situations whereby the goals of the agency diverge from those of the owners.

One point of particular interest related to ARMS Ltd. formation is the company's mission statement. This speaks of benefits to be obtained for the business owners but fails in any way to denote customer orientation.

The Software Maintenance Contract

SAP Customer Relationship Management (CRM) is a critical component of the IUBS where billing and customer contacts are concerned. It is to be noted that, under the terms of the prevailing contract, while licences were procured on a perpetual basis, maintenance and support services were procured for four years commencing at the end of the warranty period.

The Meter Reading and Billing Cycle

It is pertinent to note that no significant changes to the meter reading process have been made since the responsibility for meter reading was passed to ARMS Ltd. This notwithstanding, since the changeover to SAP, hand-held terminals used by meter readers no longer retain a record of previous consumption readings. While such validation has, according to ARMS management, been shifted to a later stage in the bill processing operation, the option to correct readings at source is no longer available.

The Malta Resources Authority had noted '*there may be significant errors arising from incorrect inputting of meter readings'* but was unable to ascertain root cause(s) due to a lack of an adequate level of analysis criteria maintained by ARMS Ltd. in its data.

This deficiency was deemed by NAO to be one of the critical areas to which ARMS management needs to dedicate resources for problem resolution. The chronic absence of analysable data where customer complaints are concerned inhibit ARMS management from being able to gauge situations with an acceptable degree of accuracy. Such lack of analysis likewise eliminates the possibility of ARMS management to run comparative analysis to (relative) performance levels over time.

The billing cycle itself, prepared annually, is supported by a master billing schedule divided into routes. For the majority of accounts, namely residential, domestic and small commercial customers, the unit cycle spans a six-month period and comprises two estimated bills and an actual reading.

SAP validates the issue of bills at various stages of the transaction process. Failure in validation results in locks. This is another area where, in NAO's opinion, ARMS Ltd. needs to step up problem resolution efforts. Despite various such efforts since 'go-live' to reduce locks, in July 2011 the average number of locks still stood at 51,193, the peak (67,762) having been reached in December 2010.

Locks stop bills from being issued and create disruption in the ARMS-consumer relationship. One common complaint voiced is the seemingly haphazard inter-bill periods experienced by a large number of clients and, in even worse instances, of clients who did not receive a bill for a very long period of time, if ever. Apart from this undesirable effect, locked bills/accounts have a negative effect on the monies collected and hence on the Corporations' cash flows.

Estimated bills were another source of complaints. While ARMS Ltd. is legally entitled to calculate estimated consumption and issue bills based on these estimates, customer complaints on high (estimated) readings were commonplace. Eventually, this problem was addressed by ARMS Ltd., albeit in a partial fashion. In this regard, it is pertinent to comment that such a problem, together with the one addressed earlier on errors generated during meter reading, and a number of other issues currently being faced would be solved with the deployment of smart meters.

Yet another area that caused concern to NAO was the number of bills reversed under the new system at ARMS Ltd. During the period January 2010 to August 2011, 7 per cent or 146,607 bills were reversed. While ARMS management seemingly accepts this figure as being *"generated by the requirements of the system"*, NAO feels that terming the problem is inevitable is no valid solution.

Bearing in mind the resources required to issue a reversal (and the subsequent bill re-issue), NAO opines that ARMS management should dedicate efforts to reduce recourse to bill reversals. The considerable time thus saved can be utilised more productively and profitably.

One area NAO specifically advises ARMS management to look into is reversals in instances where bills are not sent to customers within three days of invoice date. ARMS Ltd., in order to ensure its customers benefit from the full 15 days' credit period, reverses bills not sent out within three days. In the period January 2010 to August 2011, 35,350 such reversals were effected (a quarter of all reversals issued during the period). NAO opines that ARMS management seriously considers alternative solutions to this problem, with the aim of doing away with the need to issue such a large amount of reversals and bill re-issues.

The issues of billing frequency and inter-bill periods were often raised by the public and the media as concerns. NAO investigated accordingly. ARMS' own benchmark is to issue 7,000 invoices daily. This benchmark has never been reached. During the period January to June 2011, the maximum (average) number of bills issued was 6,558 - the minimum being 3,685.

NAO carried out independent tests, basing on primary (source) data extracted from ARMS' systems. For a sample of 2,336 domestic accounts[1] (making up the bulk of ARMS' clients), it transpired that 71 per cent of projected activity was actually achieved (9,948 bills issued out of a projected total of 14,016). The projection was based on ARMS' policy of issuing three bills to such clients every six months. The period under review was 1 July 2010 to 30 June 2011. For

[1] Out of a population of 224,482 accounts.

comparative purposes, NAO divided the review period into two six-month periods. Performance increased by 15.4 per cent to 76.1 per cent.

The same exercise sought to establish the number of times each account had been billed - according to ARMS policy, the optimum number was six bills per annum. NAO's exercise revealed that 79 per cent of accounts had been invoiced less than six times during the period 1 July 2010 to 30 June 2011 (basing on the sample selected).

Inter-bill periods were also investigated by NAO, this being the source of frequent complaints on the part of ARMS' customers. Here, it resulted that 4 per cent of (the sampled) accounts had never been invoiced during the 12-month period under review. A further 7 per cent had been invoiced only once. Of the bills pertaining to the remaining 89 per cent of accounts, 44 per cent were dated within two months (62 days) of each other.

ARMS management has, over time, established a number of Key Performance Indicators (KPIs) to measure output through monitoring of various parameters. This is good business practice and is laudable. However, NAO notes that the selected indicators, while certainly shedding light on various aspects related to performance, fail to address other areas deemed of critical importance to ARMS Ltd. NAO opines that ARMS management should revisit its list of KPIs and update this, in a manner that the fresh set gives a more holistic picture of operations, output and outcome at ARMS Ltd.

The independent quantitative exercise run by NAO referred to earlier served a dual purpose: (a) it enabled the Office to verify ARMS' performance basing on source data and (b) is meant to furnish examples of the performance indicators that can be created through analysis of readily-available system data.

Yet another area where, in NAO's opinion, ARMS management should step up efforts to improve performance is revenue-related. While positive improvement has been reported upon by ARMS management with respect to increased daily bill issues and a decrease in debtor days, ARMS Ltd. is still finding difficulties reaching its established daily quota of 7,000 bills. Additionally, the debtor days figure stands at 122.65. Billing and payments are ARMS Ltd. major raison d'etre and the Corporations' lifelines. NAO opines that ARMS Ltd. should address the issue of Revenue Assurance with greater effort, acting along the parameters originally set out in the July 2009 Proposed Organisational Design and set up an (internal) Revenue Assurance Unit.

The level of service ARMS Ltd. offers its consumers is, in part, based on ARMS' ability to issue bills with accuracy and at the specified frequency. While improvement has been registered in this regard, the approach adopted is still not the ideal. Even for those accounts (the majority) where no problems exist in billing, two-thirds of bills are based on estimates, with the third bill, based on an actual reading adjusting the difference at the end of the 6-month period. Additionally, NAO tests revealed that the established billing frequency was not always being met. Delays in the issue of bills results in consumers receiving exorbitantly high bills and would possibly face difficulties settling same, even though the amounts in question would be, strictly speaking, overdue. This in turn creates overheads in terms of resource allocations at ARMS Ltd., with the need to establish contact with the defaulting consumer to attempt agreement to a repayment schedule.

For the above reasons, and many others, it is imperative that the smart metering project forges ahead. ARMS Ltd. has already reported delays - by end August 2011, Fgura and parts of Paola had to be switched over to smart mode. This target was not achieved. ARMS management is however still confident that it will achieve its ultimate 2013 goal by which date the entire country will have smart metering enabled. This implies that domestic consumers will start receiving an actual reading bill every two months. NAO strongly recommends that ARMS Ltd. aggressively manages this project, to ensure completion within established timeframes. Until such time as this occurs, it is impossible for ARMS Ltd. to offer optimal service where billing is concerned, and for ARMS Ltd., through the Company the two Corporations, and the consumers themselves to reap significant benefits from the very considerable investment in the IUBS project.

One notable area where the new system has offered improvement is in the format and contents of the bill itself. This is now highly detailed and offers consumers ample information related to consumption, rates, charges and historic data, even in graphic form. While some consumers complain of confusion with the amount of information being furnished, it is pertinent to note that ARMS Ltd. has undertaken notable efforts to ensure consumer comprehension of the new bill.

Finally, since ARMS Ltd. has taken over the meter-to-cash function, consumers are being offered a wider selection of payment channels, both online and conventional.

Technical Aspects of the Transition from the Legacy System to IUBS

NAO, in formulating the plan for the Investigation, decided that the problem was to be addressed from two distinct perspectives - the managerial/administrative and the technical. The former was handled by the NAO Investigative Team, while the latter was farmed out to a specialist.

The deliverable of the technical exercise was a report which supplemented and complemented NAO's main texts.

Whilst noting that system-derived benefits of materiality could only be reaped following the completion of the IUBS project in its entirety, the technical report identified technology-specific transition factors that gave rise to customer complaints. These included:

- problems associated with data quality checks prior to migration;
- insufficient resources allocated to resolve system locks;
- breakdown in controls during a failure in the automated data replication of data between CRM and billing;
- lack of analysis of customer complaints, and
- failure to monitor performance of response to customer contacts through various communication channels, notably email and hard copy correspondence

It is pertinent to note that the technical experts deem the following factors also need to be taken into consideration:

- the transition in systems necessitated a learning experience for ARMS management and workforce;
- during the third quarter of 2010, there was a significant increase in customer contact, brought about by various reasons other than the new system, most notably the increase in utilities rates;
- considerable (unplanned) resources redeployed (off planned tasks) to correct errors related to the issue of energy allowance cheques, and
- wrong estimates due to changes on the base (utility) rates which had increased .

Customer Care Function at ARMS Ltd.

The fact that ARMS Ltd. is a service provider with its consumer base being the entire nation imposes on the Company the moral obligation to be customer-oriented. The customer care function was notably under scrutiny during the third quarter of 2010, even due to the pronounced increase in customer contacts.

The public outcry was caught up by the media, with complaints being varied - confusion with the new bill format, wrongly issued/delayed bills, issues with the government energy allowance cheques, the shift of ARMS' main premises from Valletta to Luqa, the long queues, unanswered emails and correspondence, and the inadequacy of the customer service level provided at Luqa, often leading to the need for multiple visits to resolve problems.

It is pertinent to note that the Ombudsman expressed concern, in September 2010, claiming ARMS' service was inefficient and insensitive to customer needs. The House of Representatives discussed the issue at length, the outcome being the commissioning of this Investigation.

On the topic of customer care and related issues, this Investigation looked into the more salient points, a brief review of which follows:

The move to Luqa (from Valletta) was necessitated by the commencement of the City Gate Project. NAO opines this move brought about considerable access problems, especially to elderly persons dependent on public transport for mobility. The move to Luqa also coincided with the centralisation of all complaints' reception, in turn causing the notorious increase in queue length and waiting times.

In this respect, it is pertinent to note that ARMS management took remedial action, both in the short and long term. Front-liner officers were increased. The workforce was, as a short-medium term measure, supported and complemented by the addition of temporary personnel called in peak periods. Queues were organised and rationalised, parking facilities for visitors were extended. ARMS Ltd. was experiencing difficulties handling all incoming phone calls. This problem was mitigated by coming to an agreement with a third party organisation that took the spill-over calls, reducing the amount of lost calls during peak hours.

In August 2011, ARMS Ltd. moved yet again, this time to a more centralised location, with the premises themselves being refurbished in a manner that, according to ARMS management, suited best the operation run by the Company. This refurbishment included dedicated reception and offices areas, design of a logical walking flow for customers, cash handling function extended to all front-liner officers in implementation of the one-stop shop concept, installation of queue display and an informative audio system, setting up of meeting rooms offering privacy and confidentiality, segregation between the customer and the back office areas. Traffic management in the vicinity was also improved, to assist pedestrians needing to cross the major and very busy road.

Customer contact is critical in service provision. ARMS Ltd. may be contacted in various manners, and the manner with which the Company has handled phone calls has been described above. Hard copy correspondence is another medium via which ARMS Ltd. can be contacted, as are emails. However, the Company does not maintain any logs enabling the quantification of response times. Access to ARMS Ltd., with clients retrieving information and requesting services can also be made through the Company's website.

One area deemed crucial to the provision of an excellent customer care service as is being aimed for by ARMS Ltd. is that of maintaining logs of complaints and queries, suitably analysed into meaningful categories. Already referred to earlier, such a practice would enable ARMS Ltd. to monitor and gauge its performance, in absolute terms and in relative ones compared to previous periods. When NAO requested the list of complaints received by ARMS Ltd. through all communication channels per complaint type, the Office was informed that such a list was not available. Eventually what was supplied was a list that lacked detailed subdivision of the nature of the complaint, being based solely on generic headings such as 'Bill Enquiry'. In this regard, NAO strongly urges ARMS management to revisit the approach the company is taking towards analysing customer records. It does not make business sense to invest in state of the art systems and then utilise merely a fraction of the functions such tools provide.

It is fair to note that, since the third quarter of 2010, ARMS management implemented various changes related to customer care in order to improve the situation. The more notable ones have already been mentioned above - the May 2011 launch of the website, offering clients the access to information and a variety of services; the August 2011 move to new premises at Blata l-Bajda; the introduction of interest payment by ARMS Ltd. to its clients in cases of over-estimation; and the initial rollout, albeit on a small scale, of smart metering.

NAO can state that ARMS Ltd. took measures to mitigate the situation that had materialised by July 2010. However, the Office is of the opinion that at the time, the situation would not have deteriorated so much and/or would have been remedied quicker if ARMS Ltd. had a (dedicated) customer care function.

Management and Key Staff Recruitment

One area that HoR instructed NAO to investigate was the method of selection of ARMS' employees. ARMS management comprises an Executive Chairman and four Departmental Heads. Of these, two head parts of the IUBS project, namely the Automatic Meter Management (AMM) and the CRM. The third and fourth managers cover Finance and Strategy/Policy respectively. All four were previously in the employ of the two Corporations and, according to ARMS Ltd., 'they were identified on the basis of their expertise, experience and knowledge in the different areas they service'. The Office opines that in view of the fact that there may have been other contestants for the posts in question, the vacant posts should have been advertised and a traditional call for recruitment followed. This would have rendered the entire process more transparent.

Originally, it had been intended that ARMS Ltd. would have a Chairman heading the Board of Directors and a (separate) Chief Executive Officer (CEO). While a Chairman was effectively appointed when ARMS Ltd. was formed, the Company remained without a CEO until October 2010. During this time, the Chairman was standing in for the CEO. Eventually, the appointment, made directly by the Minister of Finance, the Economy and Investment, was for an Executive Chairman. While cutting down on administrative costs, NAO opines that such an appointment may not be conducive to good governance, in that situations of conflict may arise when the same official occupies the post of Chairman and CEO.

ARMS Ltd. is a service provision company, being in a peculiar position of having the entire nation as its client base. For this reason, it makes business sense to have a dedicated customer service function. This issue has already been addressed previously in this Chapter.

The Company is likewise dependent on its workforce for the provision of the service to its extensive client base. Yet again, this, in NAO's opinion, necessitates the creation of a dedicated human resource function.

Yet another need for investment (already referred to earlier) is in an in-house resource responsible for revenue assurance. Income from billing is critical for the Corporations.

As the Company envisages a 'metamorphosis' with the implementation of smart meters and the gradual take-up of online payments and services request, management should start evaluating the shift in employment as of now.

Finally, the need for ARMS management to exploit the vast data sets its systems are collating has already been referred to. The data being gathered, if properly tagged, will give management the possibility to devise reports that will serve as tools in decision-making, and in gauging situations. Careful and judicious use of the data will produce reports that will serve management in taking preventive, rather than reactive, actions, as the reports will facilitate projections and forecasts through trend analysis. This will, however, involve the employment of personnel well-versed in querying the deployed databases and in the extraction of meaningful results.

Secondment of Non-Managerial Grades

ARMS Ltd., since its formation in January 2009, was manned by WSC and EMC employees. These were seconded to ARMS Ltd., keeping their original job descriptions. Reputedly, remuneration remained unchanged, although NAO was not in a position to reconcile (payroll) figures provided by WSC for the years 2008 and 2010, despite the various explanations offered.

Despite the nominally unchanged working conditions, NAO opines that a number of factors may have impinged on employees' mindset following their secondment. In turn, this may have effected the morale of the workforce and hence its output - in quantity and quality. In this respect, one can make mention of a number of changes that took place simultaneously: the secondment; the move from Valletta to Luqa; the replacement of the legacy system by the new one; the implementation of the 'one-stop shop concept[2]'; the need to document each contact; the fact that the new system created an audit trail; the increased customer contact; the ever more frequent occurrence of having to serve angry customers; and the general feeling of uneasiness brought about by an unclear future, given that employment conditions were still at preliminary discussion stage between ARMS management and the concerned unions[3].

NAO opines that the above concerns and issues would have weighed considerably on employees' minds and again stresses the critical need for a dedicated HR function in similar situations.

Management's Perceptions on Various Issues

As part of its investigation, NAO sought to obtain an insight into ARMS management's perception on various issues related to the investigation. One such area covered challenges faced after 'go-live'. According to the Project Manager responsible, these were, in the main, the typical challenges faced in any project of complexity - the sheer bulk of tasks to be implemented simultaneously, the re-alignment of multiple entities at one go to one common set of procedures, short timeframes necessitating fine-tuning post 'go-live', the need for extensive training for users, limited resources, under estimation, in this instance of concerns related to data cleansing and migration, changes commissioned late in the project life cycle, further restricting already tight deadlines.

ARMS management identified the same problems described above as contributing to the situation in the third quarter of 2010. On the matter of the late appointment of the CEO, ARMS present-day management feels that had the post been filled earlier, the Company would have fared better in address the many challenges it faced. As proof of this, management listed a variety of issues and concerns that were handled since the present CEO took up office. These ranged from formalising the business relationship of ARMS Ltd. with the Corporations, the implementation of a system of management meetings, an interim agreement regarding the workforce with their unions, launch of initiatives to address backlogs, and varied customer-oriented incentives.

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[2] Although covered by the original job descriptions, the policy to provide a one-stop-shop was implemented following the take-over of the meter-to-cash function by ARMS Ltd.

[3] To date, a final agreement has not yet been endorsed.

Management also believes that tensions and uncertainties manifested by the workforce during the initial stages of ARMS' inception have, since then, eased. On the other hand, it is accepted that the IUBS project ran two parallel streams - a systems one and an HR stream. ARMS management accepts the fact that the HR stream lagged behind the systems implementation. This notwithstanding, the fact that no dedicated HR function exists is attributed to the fact that, technically, as things stand, ARMS Ltd. does not employ the workforce. NAO has already expressed an opinion earlier on the matter - ARMS Ltd. is in the services provision sector, it is dependent on its workforce for its output. It makes business sense to protect that investment by deploying an HR specialist.

Perceptions of Non-Managerial Grades

In any service provision entity, as likely as not it is the front liner who is most familiar with the 'inner workings' of the system. For this reason, NAO solicited the views of a group of non-managerial employees at ARMS Ltd. A structured questionnaire was compiled, covering diverse areas: duties; customer contact; changes and decisions; training; and the third quarter of 2010.

Various points worth noting emanated from the exercise. While ARMS management perceived itself as having briefed the workforce well regarding collective agreement negotiations, employees complained of lack of such information.

Another point of interest is that, while ARMS Ltd., in its data gathering exercise, does not distinguish between complaints, queries and suggestions, ARMS' workforce differentiates quite strongly between these.

Implementation of the one-stop shop was considered a success, even by the workforce. However, some did comment on the fact that such an increased flexibility was taxing on them and created longer serving times[4].

The general feeling on training differs from management's perceptions. While management states that sufficient training is provided and that this is an on-going process, a number of sampled employees opined they had not been sufficiently trained and that such training had been supplied only at go live.

Problems during the 2010 third quarter as described by the workforce coincided with the general picture formed - the increase in rates, the change-over to the new system and related teething problems, closure of Valletta and transfer to Luqa, errors in data disrupting the energy allowance cheque scheme, the learning curve and delays brought about by this, an increase in customer queries and complaints, and the resulting spiral of ever-increasing backlog and queues.

NAO solicited the interviewees' ideas in connection with solutions that could have been implemented in addition to help ease the situation as quickly as possible. The more notable of these included: better piloting and less rush with going live with the new system and refunds effected through crediting accounts rather than the issue of cheques for the energy allowance.

One final remark expressed by various elements of the workforce was concern regarding what they termed to be insufficient communication between management and the workforce. These employees claimed there were cases when they learned of initiatives or occurrences through colleagues, rather than officially from ARMS management. NAO feels that such a practice is not conducive to a peaceful and harmonious relationship between management and workforce and should be avoided.

Conclusion

In concluding, NAO notes that ARMS Ltd. performance has improved significantly since its inception and since the period under investigation, namely July to October 2010. With reason, one would argue, given the very significant investment that has gone into the IUBS project, of which ARMS Ltd. is the consumer interface.

The project's anticipated benefits cannot be reaped today. In all fairness, project implementation is still under way and ARMS Ltd. can only perform with excellence when the entire country is running smart meters.

4 The one-stop shop concept is supported by real-time resolution of problems. Previously, client problems were taken note of and addressed outside customer hours, in batch mode.

Notwithstanding this, there are a number of lessons to be learnt from the initial 'go-live'. It is generally accepted by all that the complexity of the project was further complicated by issues of premises and customer access thereto, the increase in rates, errors in the data that had gone unchecked and uncorrected prior to migration to the new system, inability to comprehend the immensity of the lock strategies of the new system and hence inability to address the resulting situation, the employees' uncertainty regarding their future employment, their relative lack of familiarity with the new system, the ever-increasing number of complaining customers, frayed tempers…

Apart from problems related to the 'go-live', of which a good number have been solved or surpassed, other issues remain, as have been amply described in this report.

ARMS Ltd. misses various key strategic posts within its management cadre - dedicated Revenue Assurance, Customer Care and HR functions. In addition, now that the initial implementation phase is over, and the company has started amassing historic data on its state of the art systems, it is time management sets up a think tank to identify reports that can be compiled and that would assist them in running ARMS Ltd. in a professional manner, serving the interests of the two Corporations and those of their very extensive client-base.

APPENDICES

Appendix 1 – Chronological Timeline

Year	Date	Event
2005	Early 2005	Enemalta Corporation (EMC) embarked on a comprehensive ICT/ Business Process Reengineering whereby a thorough overhaul of its business methods was undertaken.
	4th November 2005	EMC and Water Services Corporation (WSC) issued a Request for Information (RfI) for an Integrated Utilities Business System (IUBS) - A Businness Process Trandformation Strategic Partnership through the Department of Contracts.
2006	12th December 2006	Following the publication of a Request for Proposal (RfP), seven of the tenders were invited to put forward offers for a strategic partnership with both utilities for the Supply and Implementation of IUBS.
2007	3rd April 2007	The closing date for the submission of offers; one-bid form by International Business Machine Ltd. (IBM).
2008	24th April 2008	The General Contracts Committee (GCC) found the bid as having met the requirements stipulated in the RfP and recommended that a letter of intent be issued to IBM so that the utilities will be in a position to negotiate the best deal with the bidder.
	25th September 2008	The Automated Meter Management (AMM) contract, following the award and closure of the appeal process was signed.
2009	19th January 2009	ARMS Ltd. was registered with Malta Financial Services Authority with number C46054.
	18th June 2009	The GCC approved after the endorsement by the Ministry for Infrastructure, Transport and Communication (MITC) the award of the contract to IBM. This brought to closure the process relating to the IBM tender.
	June 2009	Temporary staff was initially engaged to support data cleansing and other project related activities.
	July 2009	ARMS Ltd. Change Management Team/IBM Transformation team prepare the Final Report on ARMS Proposed Organisational design.
	December 2009	The static part was migrated in the first week of December 2009.
2009/2010	17th December 2009 - 4th January 2010	The second part of the migration took place.
2010	February - March 2010	Customer Care Offices in Valletta were closed due to commencement of City Gate Project and ARMS offices were relocated to Luqa.
	11th February 2010	WSC and EMC, and hence ARMS Ltd., transferred from MITC portfolio to Ministry of Finance, the Economy and Investment (MFEI).
	August 2010	Date when first bill with AMM was issued in Mdina.
	August 2010	ARMS Ltd. reached an agreement with World Aviation Group (WAG) to take spill-over cells and reduce the amount of lost calls during peak hours.

Appendix 1 – Chronological Timeline (continued)

Year	Date	Event
2010	July - September 2010	Customers' contacts with ARMS Ltd. increase drastically resulting in daily long queues at ARMS offices and a number of complaints related to an inefficient customer service.
	July/August 2010	Approximately 10,000 energy allowance cheques were either issued to wrong account holder or wrongly computed.
	September 2010	The Ombudsman expressed concern that the service provided by ARMS Ltd. was inefficient and insensitive to customers' needs.
	29th September 2010	The Parliamentary Opposition presented a motion in parliament whereby it stated that government had refused to publish a contract for the procurement of utilities' smart meters, a system for smart billing and other related services, which contract was valued at least Euro 70 million.
	14th October 2010	ARMS CEO was appointed.
	11th November 2010	The House of Representatives (HoR) resolved that the Auditor General (AG) was to investigate; (a) the decision to and process used to set up ARMS Ltd; (b) the method of selection of ARMS Ltd employees; (c)the reason for compliants by consumers regarding the service provided by ARMS Ltd; (d) any other related matters of interest to taxpayers.
	December 2010	Bills with AMM could be also sent to Manikata residents; Manikata being the second location with smart metering.
2011	24th January 2011	The Head of Terms which lays the framework of the relationship between ARMS Ltd., WSC and EMC was signed by all three parties.
	February 2011	ARMS CEO also appointed as the organisation's Chairman
	14th February 2011	ARMS Ltd. took on the function of Credit Control of heavy consumer from EMC.
	1st April 2011	ARMS Ltd introduced 6 per cent interest in favour of the client on overestimated consumption when compare to actual paid consumption in subsequent bills.
	13th May 2011	ARMS Ltd. new web portal was launched; Birkirkara Local Council starts accepting bill payments.
	June 2011	Smart metering also introduced in Zurrieq.
	August 2011	ARMS Ltd. started operating from Gattard House, Blata il-Bajda.

Appendix 2 – Motion presented by the Opposition

L-Onor Marlene Pullicino, f'isem il-Kap tal-Oppożizzjoni, ipproponiet:-

Din il-Kamra

TINNOTA li l-Korporazzjoni Enemalta u l-Korporazzjoni għas-Servizzi tal-Ilma, fuq direzzjoni tal-Gvern, iffurmaw il-kumpannija ARMS Ltd, suppost biex tipprovdi servizz eċċellenti lill-konsumaturi billi ddaħħal sistema avanzata tal-informatika u, fost affarijiet oħra, toħroġ bi preċiżjoni, u kull xahrejn il-kontijiet tad-dawl u l-ilma f'pajjiżna;

TOSSERVA li l-Gvern b'mod persistenti rrifjuta li jippubblika l-ftehim li saru biex jiġu installati *meters* tad-dawl u l-ilma li kellhom ikunu *state of the art* biex iwasslu għal monitoraġġ dettaljat dwar konsum tad-dawl u l-ilma bla bżonn li jinqraw mill-*meter reader,* flimkien ma' servizzi relatati, liema kuntratt jiswa mill-anqas €70 miljun mill-flus tat-*taxpayers;*

TAGĦRAF li s-sistemi kkummissjonati mhux qed jagħtu r-riżultati mixtieqa skont kif maqbul, anzi qegħdin iwasslu għal taħwid eżaġerat u żbalji li jkomplu jitfgħu piżijiet kbar fuq iċ-ċittadini tagħna minħabba negliġenza u traskuraġni;

TITĦASSEB li għad hemm familji u persuni li qed jirrappurtaw li għadhom ma rċevewx il-benefiċċju tal-enerġija li l-Gvern tant ilu jsemmi, b'mod li qed jinħolqu problemi u piżijiet żejda għal dawn il-familji;

TIFHEM li n-nies fil-karigi għolja ta' tmexxija ta' ARMS Ltd. intagħżlu b'mod dirett mill-Ministru responsabbli.

F'dan il-kuntest, din il-Kamra:

TITĦASSEB li l-konsumaturi Maltin u Għawdxin qed ikollhom iħabbtu wiċċhom ma' servizz ta' *customer care* minn ARMS Ltd li huwa ta' livell baxx ħafna, kultant orribbli, tant li wassal biex il-Prim Ministru nnifsu jammetti din il-problema u japoloġizza;

TIFHEM li apoloġija u wegħdiet ta' investigazzjonijiet interni waħedhom mhux biżżejjed;

TAGĦRAF li t-tort ta' dan is-servizz ħażin mhux tal-ħaddiema, li saħansitra ġibdu l-attenzjoni u qed jaħdmu bl-aħjar mod possibbli, iżda tat-tmexxija magħżula mill-Ministru responsabbli;

TIDDEPLORA li t-tmexxija ta' ARMS Ltd lanqas kienet kapaċi taħseb minn qabel biex issib u tħejji post alternattiv fil-Belt Valletta minn fejn tkun tista' taqdi l-ħtiġijiet tal-konsumaturi;

TIDDEPLORA li t-tmexxija ta' ARMS Ltd saħansitra lanqas kienet kapaċi tieħu ħsieb il-*management* tal-għeluq ta' uffiċċju fil-Belt Valletta u għal xhur sħaħ konsumaturi qed ikollhom jgħaddu mill-inkonvenjent li jmorru Ħal Luqa biex forsi jinqdew, filwaqt li kien biss ftit ilu li tħabbar li fil-futur se jinfetaħ post ieħor fil-Blata l-Bajda;

Appendix 2 – Motion presented by the Opposition (continued)

TIDDEPLORA li qed ikun hemm inkonvenjent kbir għal pensjonanti u persuni oħra b'diffikultajiet ta' mobilità u mingħajr il-mezzi neċessarji, li qed ikollhom jaqbdu aktar minn karozza tal-linja waħda sabiex jaslu sal-uffiċċji tal-ARMS Ltd u jippruvaw jinqdew.

Għalhekk, din il-Kamra tar-Rappreżentanti ta' Malta:

TIRRIŻOLVI li fi żmien mhux aktar tard minn ġimgħa mill-approvazzjoni ta' din il-Mozzjoni, il-Ministru responsabbli:

- Jippreżenta f'din il-Kamra l-ftehim iffirmati fir-rigward tal-provvista u stallazzjoni tal-i*smart meters* ġodda, u servizzi relatati;
- Jippreżenta f'din il-Kamra Pjan ta' Azzjoni għal kif se jiġi trattat il-ħruġ ta' kontijiet u s-servizz lill-konsumaturi għas-sentejn li ġejjin.

TIRRIŻOLVI li l-Awditur Ġenerali jiġi mitlub jinvestiga s-sitwazzjoni f'ARMS Ltd, b'mod partikolari:

- Id-deċiżjoni u l-mod ta' kif twaqqfet ARMS Ltd;
- Il-mod ta' kif ġew magħżula l-persuni f'din l-istruttura;
- Ir-raġunijiet għaliex il-konsumaturi mhux moqdijin mis-servizz ta' ARMS Ltd;
- Kwalunkwe materja oħra fir-rigward ta' ARMS Ltd li jħoss li hija pertinenti u fl-interess tat-*taxpayers* li tkun sollevata;
- Jagħmel ir-rakkomandazzjonijiet meħtieġa dwar ARMS Ltd.

TIRRIŻOLVI li wara li l-Awditur Ġenerali jippreżenta r-rapport dwar ARMS Ltd, isir dibattitu Parlamentari dwar is-sejbiet tiegħu.

TIRRIŻOLVI li l-Awditur Ġenerali jiġi mitlub jagħmel investigazzjoni sħiħa tal-aspetti kollha tal-kuntratt u tal-proġett tal-i*smart* metering u servizzi relatati, fejn jingħata mandat li:

- Jeżamina t-tfassil u l-għoti ta' dan il-kuntratt u jara jekk dan tmexxiex bl-aħjar mod possibbli;
- Jeżamina jekk dan il-proġett tmexxiex u qed jitmexxa tajjeb skont dak li kien imwiegħed u ppjanat;
- Jeżamina jekk il-Gvern hux qed jieħu l-*value-for-money* mistenni u mwiegħed f'dan il-proġett;
- Jeżamina jekk il-mod kif qed jitmexxa dan il-proġett hux qed ikollu effett fuq il-korrettezza tal-kontijiet tad-dawl u l-ilma li qed jintbagħtu lill-konsumaturi;

Appendix 2 – Motion presented by the Opposition (continued)

- Jagħmel ir-rakkomandazzjonijiet meħtieġa biex jittieħdu l-miżuri effettivi biex jittaffa l-piż li ntefa' fuq il-familji u n-negozji Maltin u Għawdxin.

TIRRIŻOLVI li wara li l-Awditur Ġenerali jippreżenta r-rapport dwar l-*ismart metering* u servizzi relatati, isir dibattitu Parlamentari dwar is-sejbiet tiegħu.

L-Onor Michael Farrugia ssekonda.

Bil-permess tal-Kamra l-Ministru tal-Finanzi, l-Ekonomija u Investiment ressaq din l-emenda:-

(a) Ħassar il-kliem kollu minn:

"Tinnota li l-Korporazzjoni Enemalta….

sa u inkluż

"jippreżenta f'din il-Kamra Pjan ta' Azzjoni għal kif se jiġi trattat il-ħruġ ta' kontijiet u s-servizzi lill-konsumaturi għas-sentejn li ġejjin."

(b) Ħassar l-aħħar tliet paragrafi tal-Mozzjoni li jibdew bil-kelma "TIRRIŻOLVI" u ssostitwihom b'dan li ġej:-

"TINNOTA b'sodisfazzjon il-miżuri li ttieħdu riċentement li tejbu s-servizz offrut mill-ARMS Ltd;

TIRRISOLVI li r-Rapport tal-Awditur Ġenerali meta jitlesta jiġi diskuss fil-Kumitat Permanenti dwar il-Kontijiet Pubbliċi".

Il-Ministru għall-Infrastruttura, Trasport u Komunikazzjoni ssekonda.

Mr Speaker informa lill-Kamra li skont ftehim milħuq fil-Kumitat Permanenti dwar ix-Xogħol tal-Kamra, il-ħin tad-diskussjoni fuq din il-mozzjoni kellha tieħu 5 sigħat bil-ħin jinqasam indaqs bejn kelliema tal-Gvern u tal-Oppożizzjoni bl-introduzzjoni u l-*winding up* għall-Oppożizzjoni.

Appendix 3 – Amended Motion

KAMRA TAD-DEPUTATI HOUSE OF REPRESENTATIVES

MALTA

'al-Kamra Office of the Clerk

15 ta' Novembru 2010

Is-Sur Anthony Mifsud
Awditur Generali

Qed nibgħatlek għall-attenzjoni tiegħek mozzjoni dwar il-kumpannija ARMS Ltd li ġiet mgħoddija b'mod unanimu fis-seduta ta' nhar il-Ħamis, 11 ta' Novembru 2011.

Qed nibgħatlek ukoll kopja tal-minuti approvati tas-seduta ta' nhar it-Tnejn, 8 ta' Novembru 2011 fejn ġiet ippreżentata l-mozzjoni fl-istat oriġinali tagħha mill-Onor Marlene Pullicino f'isem il-Kap tal-Oppożizzjoni, u l-emenda sussegwentement ippreżentata mill-Ministru tal-Finanzi, l-Ekonomija u Investiment.

Pabela

Pauline Abela
Skrivan tal-Kamra

REGISTRY
15 NOV 2010
NATIONAL AUDIT OFFICE

Appendix 3 – Amended Motion (continued)

MOZZJONI APPROVATA MILL-PARLAMENT IL-ĦAMIS, 11 TA' NOVEMBRU 2010

Din il-Kamra –

TIRRIŻOLVI li l-Awditur Ġenerali jiġi mitlub jinvestiga s-sitwazzjoni f'ARMS Ltd, b'mod partikolari:

- Id-deċiżjoni u l-mod ta' kif twaqqfet ARMS Ltd;
- Il-mod ta' kif ġew magħżula l-persuni f'din l-istruttura;
- Ir-raġunijiet għaliex il-konsumaturi mhux moqdijin mis-servizz ta' ARMS Ltd;
- Kwalunkwe materja oħra fir-rigward ta' ARMS Ltd li jħoss li hija pertinenti u fl-interess tat-*taxpayers* li tkun sollevata;
- Jagħmel ir-rakkomandazzjonijiet meħtieġa dwar ARMS Ltd.;

TINNOTA b'sodisfazzjon il-miżuri li ttieħdu riċentement li tejbu s-servizz offrut mill-ARMS Ltd; u

TIRRISOLVI li r-Rapport tal-Awditur Ġenerali meta jitlesta jiġi diskuss fil-Kumitat Permanenti dwar il-Kontijiet Pubbliċi.

Appendix 4 – Description of the Four IUBS Themes

The four main themes of the Integrated Utilities Business Strategy

1. Enterprise Resource Planning:

ERP integrates internal and external management information, facilitating the sharing of information. ERP business processes provide the basis for the management of utility services, maximizing possible process efficiencies. Notwithstanding similarities between the business processes of both Corporations, the strategic partner was expected to provide each Utility with a separate transformation roadmap enabled through an ICT ERP Solution. Key ERP modules included:

- Cost Register Functionality
- General Ledger
- Cash Book
- Accounts Receivables and Payables
- Procurement and Inventory Management
- Works and Asset Management
- Budgeting and Business Planning
- Human Resource Management System Integrator.

2. Customer Relationship Management:

CRM is a business strategy that supports the retail operations of an organization. It involves using technology to organize, automate and synchronize business process including sales, marketing, customer service and technical support. Through the IUBS tender, EMC and WSC aimed to develop and manage an appropriate CRM function. The Utilities were willing to outsource this function with a view to significantly improve the existing level of performance. The modules included:

- Customer Care and Relationship Management Services
- Meter Reading and Billing Services
- Debt Collection Services.

3. Automated Meter Management:

AMM is the technology of automatically collecting consumption, diagnostic and status data from water meter or energy metering devices and transferring that data to a central database for billing, troubleshooting and analyzing. This also saves utility providers the expense of periodic trips to each physical location to read a meter. Another advantage is that billing can be based on near real time consumption rather than on estimates based on previous or predicted consumption. This timely information, coupled with analysis, can help both utility providers and customers to better control the use and production of electricity and water. In the IUBS tender, the Corporations were willing to outsource this function and infrastructure which included:

- the procurement and installation of closed-box consumer point equipment
- transducer and hardwiring with water meters
- communications equipment at substations
- metering software.

4. Energy Management System:

SCADA is a software package for data collection and presentation and can be used to monitor and control plant or equipment. In the IUBS tender, EMC had set the direction to implement a single-software IT platform to support the planning and management of EMC generation plant and distributed core electrical infrastructure through the implementation of a modular integrated GIS and SCADA/EMS/DMS and GIS solution. The various modules within this theme were:

- Supervisory Control and Data Acquisition (SCADA)
- Energy Management System (EMS)
- Distribution Management System (DMS)
- Control Room supervision
- Training module
- Interface to the Geographic Information System (GIS)
- Geographic Information System for EMC and optional GIS for WSC.

Appendix 5 – List of the Objects of ARMS Ltd. as outlined in the Company's Memorandum of Association

ARMS LTD
EXTRACT FROM THE MEMORANDUM OF ASSOCIATION

The objects of ARMS Ltd, as outlined in the company's memorandum of association, are:

a. To develop, set up, install, operate, administer and manage an integrated utilities business system with automated metering infrastructure for the purposes of billing services and management of information on utilities customers.

b. To undertake all action for the purposes of service registration, customer information and care, invoicing, billing, revenue management of and collection from utilities customers.

c. To conduct, manage and institute any legal and judicial action in relation to the billing of utilities and recover all and any amounts due for the provision of such utilities or any service ancillary thereto.

d. To develop business intelligence services, undertake product development and carry out all and any sales and marketing.

e. To undertake service registration, set up and run a call centre, maintain and manage a customer information system and conduct any analysis of information extracted, including for the purposes of establishing a benchmarking data base.

f. To purchase, rent, take on lease or in exchange or otherwise acquire any movable and immovable property necessary or convenient to carry on the business of the company.

g. To construct, improve and manage offices, stores or other buildings which may be required in connection with the company's business.

h. To lend and advance money or credit to such persons on such terms as may seem expedient to the Company, only where necessary and in relation to the business of the Company.

i. To draw, make, accept, endorse, negotiate, discount, execute and issue promissory notes, bills of exchange and other instruments and securities, whether negotiable or otherwise.

j. To enter into any arrangements with any government, authority, entity, person or company that may seem conductive to the objects of the Company or any of them, and to obtain from any government, authority, entity, person or company any rights, privileges, contracts, licences and concessions which the Company may think it desirable to obtain and to carry out, exercise and comply therewith in connection with the company's business.

k. To distribute among the members in specie any property of the Company or any proceeds of sale or disposal of any property of the Company, but so that no distribution amounting to a reduction of capital be made except with the sanction (if any) for the time being required by law.

l. To carry on any other business capable of being carried on in connection with the above or which is calculated to enhance or render profitable the business of the Company.

m. To do all such things as may be deemed to be ancillary or conductive to the attainment of the above objects or any one of them.

Appendix 6 – Heads of Terms Agreement

DRAFT

HEADS OF TERMS

1. Parties: Enemalta Corporation; Water Services Corporation; ARMS Ltd – (EMC,WSC, AL)

2. Effective Date: 01 January 2011

3. Scope: a) Appointment of AL to perform all meter to cash functions for EMC and WSC on an exclusive basis;

c) To improve (reduce) average debtors of both WSC and EMC by 5% per year compared to the debtor figures of 2008 (audit) taken as the benchmark year;
d) To provide the necessary analytical tools to both Corporations in order to reduce the currently unbilled non-technical losses compared to 2009 audited figures being taken as a benchmark;
e) To ensure the timely transfer and reconciliation of funds to WSC and EMC;
f) To coordinate the provision of support on SAP software when required by WSC and EMC as per agreed schedules; g) Provide the Corporations with any reports, statistics and/or data required and;
h) liase and provide timely required data to NSO and other government bodies and Authorities as may be required by law.

4. Share Capital: The entire share capital of AL, as currently constituted and as it may be amended over time will be shared and paid up equally by EMC and WSC;

5. Capital Expenditure: All approved Capital Expenditure of AL will be funded equally by WSC and EMC; It is understood that AL will be taking out a loan to finance the CRM & Billing software; Both WSC and EMC will retain the option to direct AL to take out further loans to finance other parts of the IUBS project;

6. Resources: AL will take onto its books all WSC human resources as appear in the attached list, Appendix 1. Furthermore, AL will take onto its books the current EMC human resources handling Customer Care and Credit Control as per attached list, Appendix 2.. For the avoidance of doubt the, the current Compliance Section at EMC will not form part of the human resources to be transferred onto AL's books;

7. Equipment: IT, communications and other agreed equipment currently utilised by WSC and EMC staff mentioned in 6 above will be transferred onto Al's books at the written down value of same in the books of WSC and EMC;

1

Appendix 6 – Heads of Terms Agreement (continued)

8. AL Budgets: a) At least four months prior to the commencement of each accounting year AL will prepare a budget detailing all its projected costs and revenues and present same to its BOD for formal approval;
b) The BOD of AL will relay the approved budget of AL to WSC and EMC at least 3 months prior to the commencement of the financial year;
c) Differences between Budgeted and Actual costs at end of year will need be approved and justified by the BOD of AL;

9. Customer Charges: AL will retain to its revenue Customer Request Charges as per current practice;

10. Third Party Business AL will strive to obtain billing related business from parties other than WSC and EMS (third parties). Such business will be booked on a cost centre basis and net contribution from same clearly identified in AL's books;

11. Charges: AL will charge each of WSC and EMC a percentage of the total revenues collected for each such that, after accounting for 9 above, 10 above plus Finance Costs, Depreciation and amortisation a net pre-tax profit of not more than 5% of AL's total costs in any one year is generated. 5% of these revenues will reflect collection of aged dues in excess of 24 months . ;

12. Cashflow: AL will deduct and set off Charges due as per 11 above on a quarterly basis in advance from the revenues collected by AL on behalf of EMC and WSC. Such quarterly deductions will be in line with the approved budget (vide 7b) and year end adjustments will be made to reconcile with actuals.

13. Dividend Policy: For the first five year period commencing as of the Effective Date, AL will retain to reserves all profits generated by the company in each year. Profits wil be used to finance any capital expenditure required which will subsequently reflect a deduction in requests to the Corporations in terms of para 5 above.

14. SLAs: Formal SLA agreements will be entered into by AL with each of EMC and WSC such that:

    a) The services to be provided by AL and which will be capable of automated and regular measurement will be identified and listed;
    b) They will reflect as far as possible and allow for monitoring of the Scope as at 3 above
    c) The format and timing of the apposite reports will be defined and agreed;
    d) The SLA Agreement will be reviewed after the lapse of 1 year so that both sides could agree on amendments to same in the light of experience gained.

2

28/12

Mr. Wilfred J. Borg B.A. (Hons.) Econ
Chief Executive Officer
ARMS Ltd.

MARC MUSCAT
Chief Executive Officer
Water Services Corporation

Ing Karl V.A. Camilleri
Chief Executive Officer
Enemalta Corporation

Appendix 7 – Analysis of ARMS' Billing Activity

Table of Contents – Analysis Results
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Benchmark versus actual – 3 bill cycle ending with an Actual - RR, DR, DG, ALL
Benchmark versus actual – 3 bill cycle ending with an Actual - ALL – by geographical region

Appendix 7 – Analysis of ARMS' Billing Activity (continued)

a) A list of DGs (Domestic Garages – garages registered for domestic use), DRs (Residential on Domestic Rates – non-lived in residences) and RRs (Accounts with one or more persons registered as living therein) was extracted from ARMS Ltd database.

b) The data file was suitably filtered, in order to ensure that accounts opened more recently than 12 months prior to extraction date (19 July 2011) were deleted. The filtered population was separated into three sub-populations, per category. This was done so as to facilitate analysis of the individual categories.

c) Each sub-population was grouped according to locality. As framework, the Local Council setup, with the 68 council structure, was utilized. In order to ensure an efficient result of the stratification process to be utilized when sampling, localities such as hamlets were regrouped within their respective local council.

d) The table below details, for each of the three subpopulations, the categorization into the 68 local councils.

Local Council	RR	DG	DR
Attard	3,079	125	717
Balzan	1,417	94	572
Birgu	953	44	442
Birkirkara	7,744	673	2,117
Birzebbuga	3,094	239	1,855
Bormla	1,935	56	645
Dingli	1,070	70	231
Fgura	3,537	319	641
Floriana	844	31	454
Gudja	952	30	214
Gzira	2,763	284	1,645
Gharghur	963	78	373
Ghaxaq	1,442	58	281
Hamrun	3,535	299	1,054
Iklin	886	56	115
Isla	1,103	48	430
Kalkara	980	55	187
Kirkop	750	30	148
Lija	1,105	81	284
Luqa	1,709	91	383
Marsa	2,122	172	586
Marsaskala	3,592	292	3,170
Marsaxlokk	1,058	75	356
Mdina	73	4	55
Mellieha	2,862	297	3,724
Mgarr	1,046	55	509
Mosta	6,342	484	1,649
Mqabba	988	62	234
Msida	2,686	338	2,150
Mtarfa	720	49	82
Naxxar	3,986	280	1,252
Paola	3,625	206	883
Pembroke	848	13	148
Pieta	1,471	114	726

Local Council	RR	DG	DR
Qormi	5,656	605	1,293
Qrendi	893	39	270
Rabat	3,950	327	1,331
Safi	653	33	189
San Giljan	2,990	287	2,921
San Gwann	3,950	312	967
San Pawl il Bahar	5,687	700	11,793
Santa Lucija	1,047	35	72
Santa Venera	2,173	229	559
Siggiewi	2,585	172	775
Sliema	5,445	431	4,843
Swieqi	2,870	193	1,463
Ta Xbiex	616	58	319
Tarxien	2,600	202	533
Valletta	2,353	77	1,445
Xghajra	547	50	543
Zabbar	4,872	317	967
Zebbug	3,780	322	970
Zejtun	3,820	170	812
Zurrieq	3,448	139	843
Fontana (Gozo)	318	33	208
Ghajnsielem (Gozo)	918	80	793
Gharb (Gozo)	422	18	433
Ghasri (Gozo)	155	4	166
Kercem (Gozo)	564	37	310
Munxar (Gozo)	370	46	815
Nadur (Gozo)	1,501	98	951
Qala (Gozo)	651	42	616
Rabat (Gozo)	2,094	157	1,045
San Lawrenz (Gozo)	215	6	148
Sannat (Gozo)	609	35	289
Xaghra (Gozo)	1,393	92	1,186
Xewkija (Gozo)	1,071	48	476
Zebbug (Gozo)	793	154	2,787

Appendix 7 – Analysis of ARMS' Billing Activity (continued)

In all, these gave the figures as per above, namely 142,289 RRs, 10,750 DGs and 71,443 DRs.

e) A sample size of 1% was deemed to be sufficient for the purpose of the exercise at hand, namely that of establishing, through analysis of a sample, ARMS' billing activity for the three different categories. The resulting figure making up the 1% sample size was rounded up, to ensure that none of the samples were under the required percentage level. This resulted in a sample structured as per below:

Local Council	RR	DG	DR	Local Council	RR	DG	DR
Attard	29	2	8	Qormi	57	7	13
Balzan	15	1	6	Qrendi	9	1	3
Birgu	10	1	5	Rabat	40	4	14
Birkirkara	78	7	22	Safi	7	1	2
Birzebbuga	31	3	19	San Giljan	30	3	30
Bormla	20	1	7	San Gwann	41	4	10
Dingli	11	1	3	San Pawl il Bahar	57	7	118
Fgura	36	4	7	Santa Lucija	11	1	1
Floriana	9	1	5	Santa Venera	22	3	6
Gudja	10	1	3	Siggiewi	26	2	8
Gzira	28	3	17	Sliema	55	5	49
Gharghur	10	1	4	Swieqi	29	2	15
Ghaxaq	15	1	3	Ta Xbiex	7	1	4
Hamrun	36	3	11	Tarxien	26	3	6
Iklin	9	1	2	Valletta	24	1	15
Isla	12	1	5	Xghajra	6	1	6
Kalkara	10	1	2	Zabbar	49	4	10
Kirkop	8	1	2	Zebbug	38	4	10
Lija	12	1	3	Zejtun	39	2	9
Luqa	18	1	4	Zurrieq	35	2	9
Marsa	22	2	6	Fontana (Gozo)	4	1	3
Marsaskala	36	3	32	Ghajnsielem (Gozo)	10	1	8
Marsaxlokk	11	1	4	Gharb (Gozo)	5	1	5
Mdina	1	1	1	Ghasri (Gozo)	2	1	2
Mellieha	29	3	38	Kercem (Gozo)	6	1	4
Mgarr	11	1	6	Munxar (Gozo)	4	1	9
Mosta	64	5	17	Nadur (Gozo)	16	1	10
Mqabba	10	1	3	Qala (Gozo)	7	1	7
Msida	27	4	22	Rabat (Gozo)	21	2	11
Mtarfa	8	1	1	San Lawrenz (Gozo)	3	1	2
Naxxar	35	3	13	Sannat (Gozo)	7	1	3
Paola	37	3	9	Xaghra (Gozo)	14	1	12
Pembroke	9	1	2	Xewkija (Gozo)	11	1	5
Pieta	15	2	8	Zebbug (Gozo)	8	2	28
				Totals	**1,448**	**141**	**747**
							2,336

Appendix 7 – Analysis of ARMS' Billing Activity (continued)

f) On the basis of the above, confidence interval was calculated for each of the three categories, as follows:

Category	Population	Sample size	Confidence interval
RR	142,289	1,448	2.56
DG	10,750	141	9.38
DR	71,443	747	3.65

(Source: http://www.surveysystem.com/sscalc.htm, online, 2 August 2011
– Creative Research Systems, Sample Size Calculator).

The above confidence intervals were based on the worst possible scenario of 50 as percentage level.

In effect, this translates in a +/- margin of error of 2.56 for any given figure through the sampling exercise analysis for RRs, at the industry standard of 95% certainty . Hence, a result of 50 may, in reality, span from 47.44 to 52.56

g) Once sample size was decided, the sample elements themselves were selected from within the three sub-populations. The lists of sampled elements were used to extract the relevant data from ARMS Ltd databases. The extracted data was further cleaned, with the removal of reversal and adjustment transactions.

h) For the sake of the exercise, the activity markers as archived by ARMS Ltd were grouped. As a first run, the 'activity' markers 'S' and 'N' were grouped into the 'E' (estimate) category, while 'F' and 'C' were relabeled as 'A' (actual). In reality, such records were minimal compared to the vast majority of 'A's and 'E's.

i) Additionally, ARMS' data records activity for WSC and EMC meters separately. Again, in order to present a less complicated picture, both markers were collapsed into a common one. In instances (the majority) where both tallied, this presented no recoding. In instances where at least one of the markers was an 'A', the transaction was set as being 'A' in its entirety, on the assumption that physical intervention would have taken place.

j) Analysis of these days differences resulted in a number of cases where multiple transaction were effected (for the same account) within the time span of a few days. As this was indicative of some corrective action, rather than a 'fresh' billing activity, further record (transaction) cleansing was effected. This brought record (transaction) size to: 6,503 (RR); 2,935 (DR) and 510 (DG).

k) The geographical region (area) label was tagged to each record (depending on the locality name). Regions were allocated as follows:

[1] When reporting on the entire sample as one lot. Further subdivision of the sample, as for example when reporting at Local Council level, automatically increases the margin of error significantly, given the small size of sampled elements in absolute terms. In line with statistical norms, results are this level are best interpreted as being indicative of those prevailing in the population itself.

Appendix 7 – Analysis of ARMS' Billing Activity (continued)

Geographical region	Locality		Geographical region	Locality	
	Name	**Code**		**Name**	**Code**
Northern	Gharghur	12	South Eastern	Birzebbuga	5
	Mellieha	25		Gudja	10
	Mgarr	26		Ghaxaq	13
	Mosta	27		Kirkop	18
	Naxxar	31		Marsaskala	22
	San Pawl il Bahar	41		Marsaxlokk	23
Northern Harbour	Birkirkara	4		Mqabba	28
	Gzira	11		Qrendi	36
	Hamrun	14		Safi	38
	Msida	29		Zejtun	53
	Pembroke	33		Zurrieq	54
	Pieta	34	Southern Harbour	Birgu	3
	Qormi	35		Bormla	6
	San Giljan	39		Fgura	8
	San Gwann	40		Floriana	9
	Santa Venera	43		Isla	16
	Sliema	45		Kalkara	17
	Swieqi	46		Luqa	20
	Ta' Xbiex	47		Marsa	21
Gozo	Fontana	55		Paola	32
	Ghajnsielem	56		Santa Lucija	42
	Gharb	57		Tarxien	48
	Ghasri	58		Valletta	49
	Kercem	59		Xghajra	50
	Munxar	60		Zabbar	51
	Nadur	61	Western	Attard	1
	Qala	62		Balzan	2
	Rabat	63		Dingli	7
	San Lawrenz	64		Iklin	15
	Sannat	65		Lija	19
	Xaghra	66		Mdina	24
	Xewkija	67		Mtarfa	30
	Zebbug	68		Rabat	37
				Siggiewi	44
				Zebbug	52

Appendix 7 – Analysis of ARMS' Billing Activity (continued)

l) The file format now looked like:

Account 1	Locality Name	Locality Code	Geographical region	Posting Date 1	Activity 1	Dys 1-2	Posting Date 2	Activity 2
Account 2	..	..		..	..		..	..
..	..	..		..	..		..	..
Account x	..	..		..	..		..	..

Dys 2-3	Posting Date 3	Activity 3	..	Trn1	Trn2	Trn3	..	Trn15	Tot Trn
	..	..	..	..	..		..	..	..
	..	..	..	..	..		..	..	
	..	..	..	..	..		..	..	

m) This gave the first computation of performance results. For the 12 month period under review, namely 1 July 2010 to 30 June 2011, ARMS Ltd billing activity (for the sample chosen), in the form of invoices issued, for the categories RR, DR and DG was as follows:

Category	Accounts	Actual activity	Projected Activity[i]	Shortfall	Percentage Actual of Projected
RR	1,448	6,503	8,688	2,185	74.9%
DR	747	2,935	4,482	1,547	65.5%
DG	141	510	846	336	60.3%
Overall	**2,336**	**9,948**	**14,016**	**4,068**	**71.0%**

n) The period in question was divided into two six month periods, namely 1 July 2010 to 31 December 2010 (1st period) and 1 January 2011 to 30 June 2011 (2nd period). This split was introduced to provide an indicator of the trend ARMS' billing activity was following, during the period covered by the sample:

Category	Actual activity Jul-Dec 2010	Actual activity Jan-Jun 2011	Projected Activity per 6 mth period	Shortfall Jul-Dec 2010	Shortfall Jan-Jun 2011	Percentage Actual of Projected Jul-Dec 2010	Percentage Actual of Projected Jan-Jun 2011	Percentage Change between 1st and 2nd period
RR	3,041	3,462	4,344	1,303	882	70.0%	79.7%	13.8%
DR	1,354	1,581	2,241	887	660	60.4%	70.5%	16.8%
DG	223	287	423	200	136	52.7%	67.8%	28.7%
Overall	**4,618**	**5,330**	**7,008**	**2,390**	**1,678**	**65.9%**	**76.1%**	**15.4%**

Appendix 7 – Analysis of ARMS' Billing Activity (continued)

o) The projected-to-actual ratio tables as per above, for the entire 12 month period, and split into two 6-month periods were further analysed by geographical region. Results follow in the two tables below:

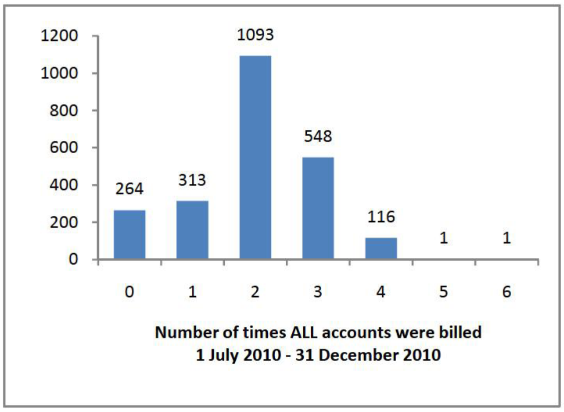
Geographical Region	Category	Accounts	Actual activity	Projected Activity	Shortfall	Percentage Actual of Projected
Northern	RR	206	900	1,236	336	72.8%
	DR	196	873	1,176	303	74.2%
	DG	20	67	120	53	55.8%
	Overall	**422**	**1,840**	**2,532**	**692**	**72.7%**
Northern Harbour	RR	434	1,967	2,604	637	75.5%
	DR	209	791	1,254	463	63.1%
	DG	45	167	270	103	61.9%
	Overall	**688**	**2,925**	**4,128**	**1,203**	**70.9%**
South Eastern	RR	211	1,097	1,266	169	86.7%
	DR	89	345	534	189	64.6%
	DG	17	52	102	50	51.0%
	Overall	**317**	**1,494**	**1,902**	**408**	**78.5%**
Southern Harbour	RR	290	1,168	1,740	572	67.1%
	DR	88	349	528	179	66.1%
	DG	25	99	150	51	66.0%
	Overall	**403**	**1,616**	**2,418**	**802**	**66.8%**
Western	RR	189	894	1,134	240	78.8%
	DR	56	198	336	138	58.9%
	DG	18	72	108	36	66.7%
	Overall	**263**	**1,164**	**1,578**	**414**	**73.8%**
Gozo	RR	118	477	708	231	67.4%
	DR	109	379	654	275	58.0%
	DG	16	53	96	43	55.2%
	Overall	**243**	**909**	**1,458**	**549**	**62.3%**

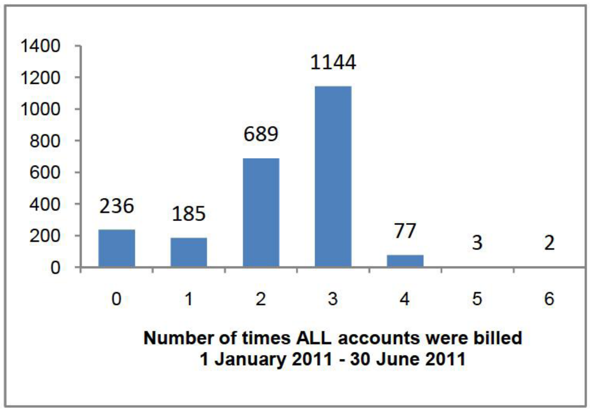
Appendix 7 – Analysis of ARMS' Billing Activity (continued)

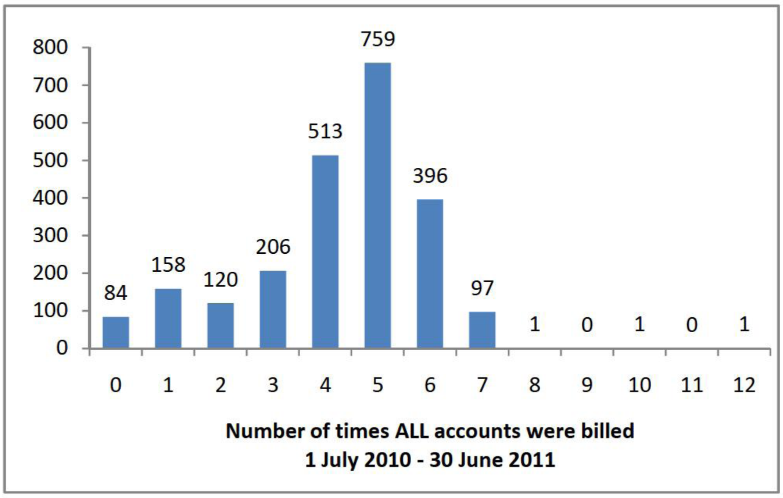
Geo Region / Category	Actual activity Jul-Dec 2010	Actual activity Jan-Jun 2011	Projected Activity per 6 mth period	Shortfall Jul-Dec 2010	Shortfall Jan-Jun 2011	Percentage Actual of Projected Jul-Dec 2010	Percentage Actual of Projected Jan-Jun 2011	Percentage Change between 1st and 2nd period
Northern								
RR	407	493	618	211	125	65.9%	79.8%	21.1%
DR	405	468	588	183	120	68.9%	79.6%	15.6%
DG	25	42	60	35	18	41.7%	70.0%	68.0%
Overall	**837**	**1,003**	**1,266**	**429**	**263**	**66.1%**	**79.2%**	**19.8%**
Northern Harbour								
RR	871	1,096	1,302	431	206	66.9%	84.2%	25.8%
DR	345	446	627	282	181	55.0%	71.1%	29.3%
DG	72	95	135	63	40	53.3%	70.4%	31.9%
Overall	**1,288**	**1,637**	**2,064**	**776**	**427**	**62.4%**	**79.3%**	**27.1%**
South Eastern								
RR	574	523	633	59	110	90.7%	82.6%	-8.9%
DR	173	172	267	94	95	64.8%	64.4%	-0.6%
DG	21	31	51	30	20	41.2%	60.8%	47.6%
Overall	**768**	**726**	**951**	**183**	**225**	**80.8%**	**76.3%**	**-5.5%**
Southern Harbour								
RR	565	603	870	305	267	64.9%	69.3%	6.7%
DR	165	184	264	99	80	62.5%	69.7%	11.5%
DG	48	51	75	27	24	64.0%	68.0%	6.3%
Overall	**778**	**838**	**1,209**	**431**	**371**	**64.4%**	**69.3%**	**7.7%**
Western								
RR	426	468	567	141	99	75.1%	82.5%	9.9%
DR	86	112	168	82	56	51.2%	66.7%	30.2%
DG	32	40	54	22	14	59.3%	74.1%	25.0%
Overall	**544**	**620**	**789**	**245**	**169**	**68.9%**	**78.6%**	**14.0%**
Gozo								
RR	198	279	354	156	75	55.9%	78.8%	40.9%
DR	180	199	327	147	128	55.0%	60.9%	10.6%
DG	25	28	48	23	20	52.1%	58.3%	12.0%
Overall	**403**	**506**	**729**	**326**	**223**	**55.3%**	**69.4%**	**25.6%**

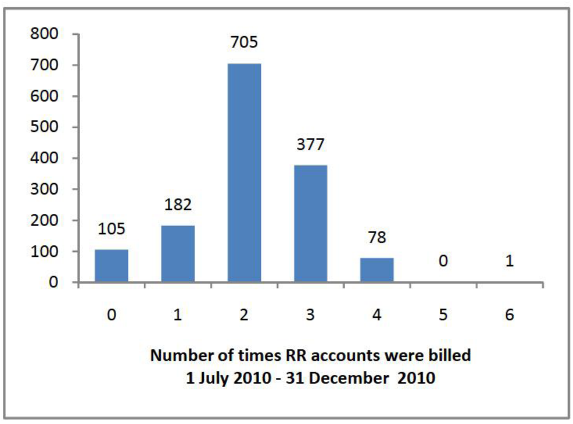
p) For the next series of data analysis, frequency of billing was examined, at account level. In this manner, for each of the three categories, and for all categories grouped as one dataset, a frequency chart depicting the above table graphically. The above results were, in each case, compiled for (a) the first six-month period under review; (b) the second six-month period; and (c) the entire 12-month period.

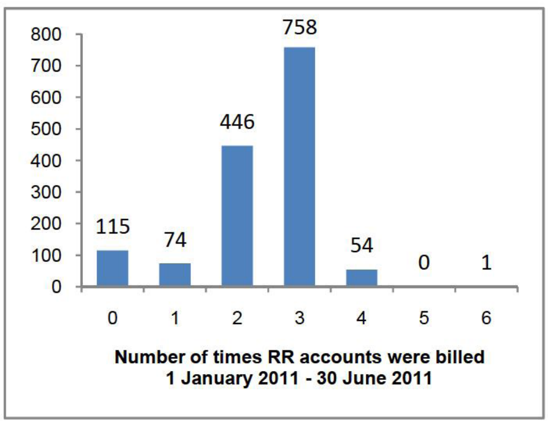
Appendix 7 – Analysis of ARMS' Billing Activity (continued)



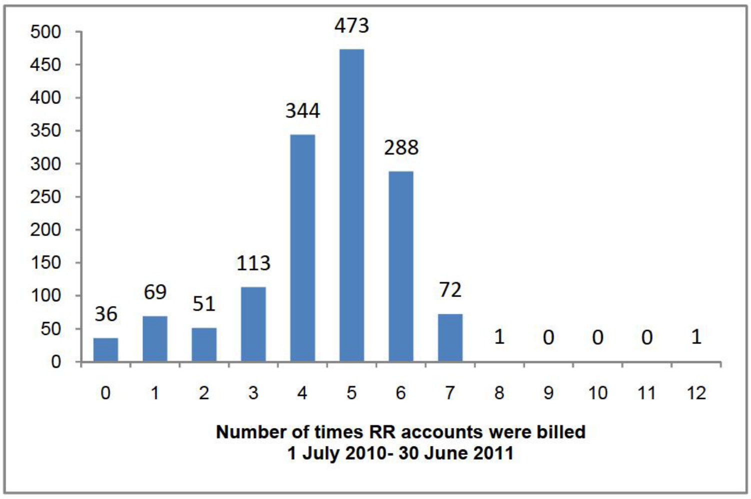


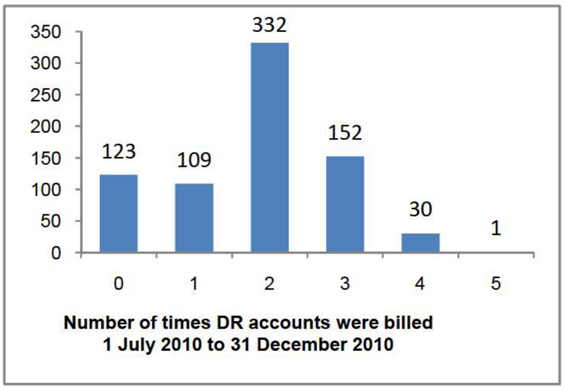


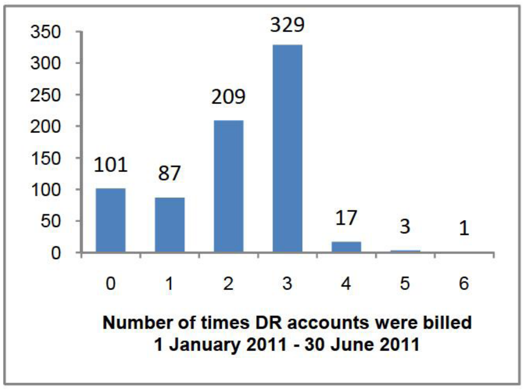


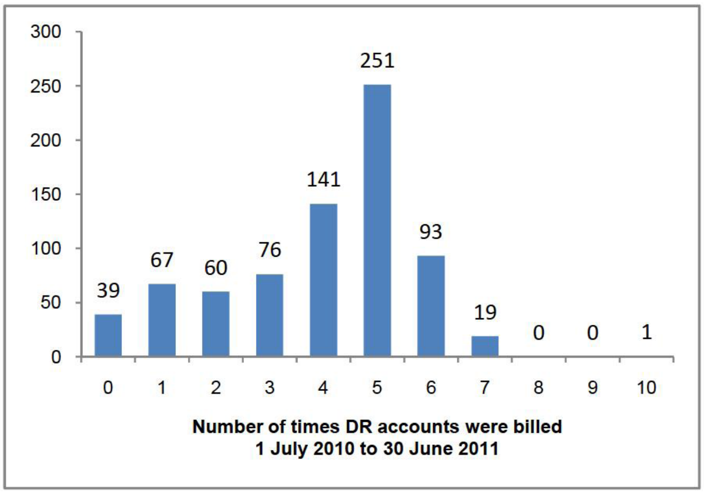


Appendix 7 – Analysis of ARMS' Billing Activity (continued)

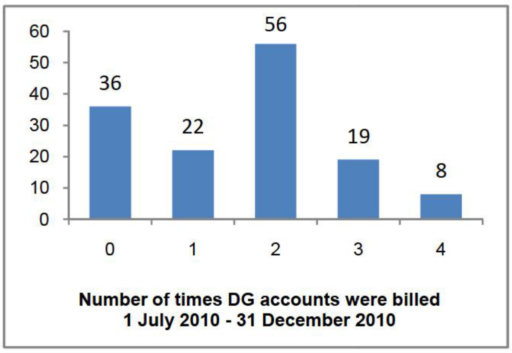


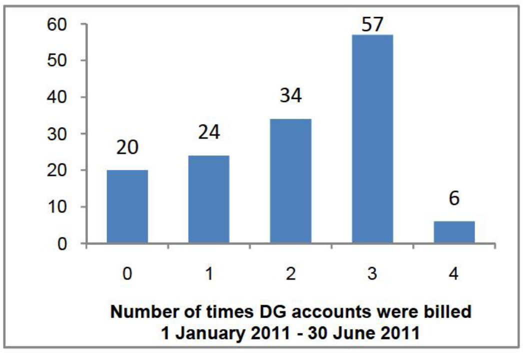


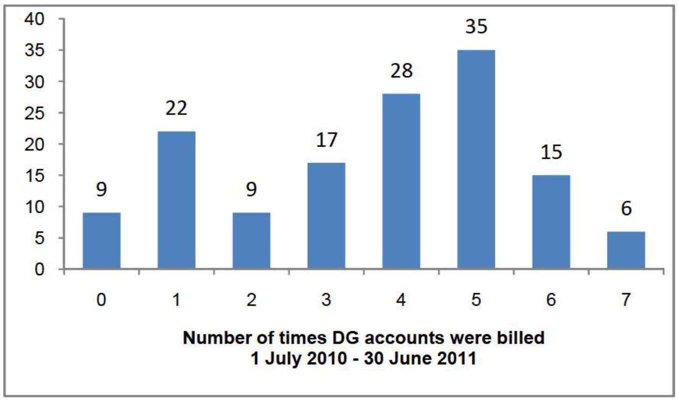




Appendix 7 – Analysis of ARMS' Billing Activity (continued)

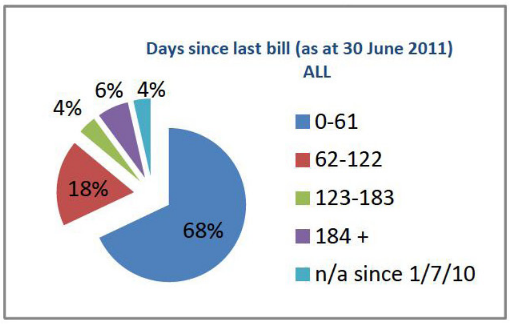


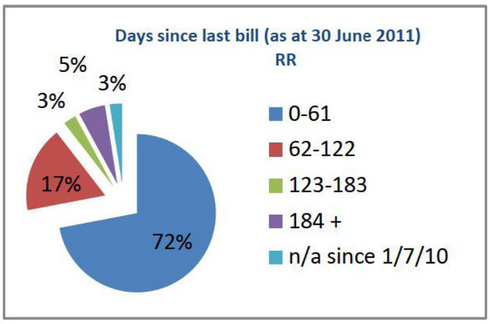




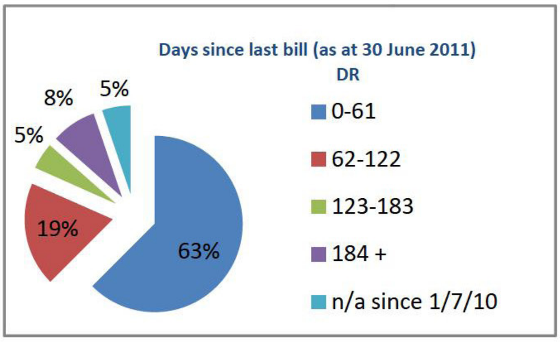
q) These results concluded the section on *billing frequency*. In preparation for the next set of results, dealing with *billing dates*, a new field was added to the datasets – days last bill, being the number of days from last billing activity to 30 June 2011. Separate results were computed for the three categories individually, as one set, and as one set divided by geographical region.

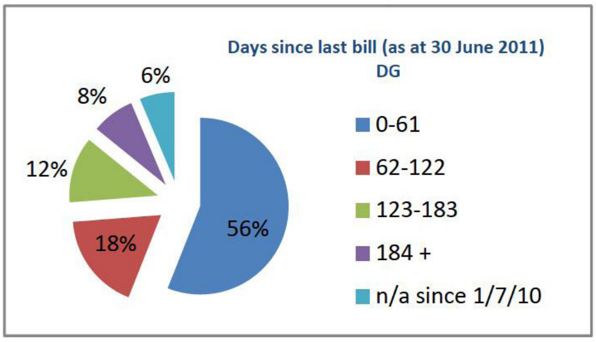
r) In each case, ranges of (number of) days (from 30 June 2011 to date of last bill) were utilized for reporting purposes: 0-61 days (signifying the two-month inter-bill period stipulated by ARMS); 62-122 days (approximately 2-4 months); 123-183 days (approximately 4-6 months); 184 + days (approximately 6 months and over); and never billed since 1 July 2010.

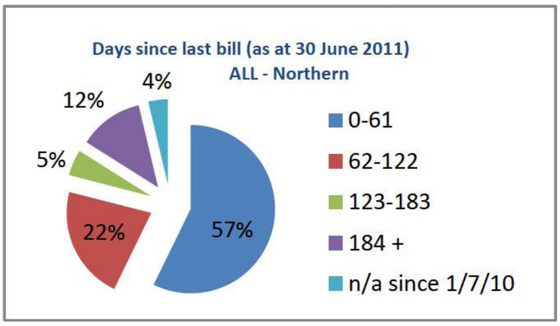


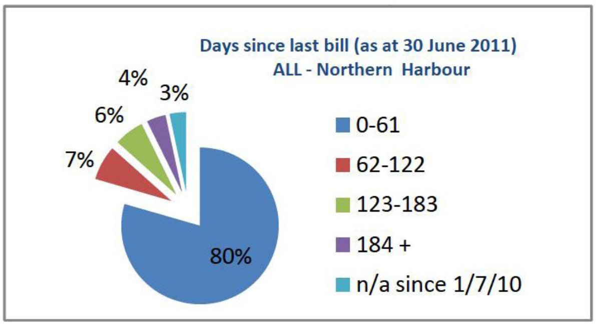


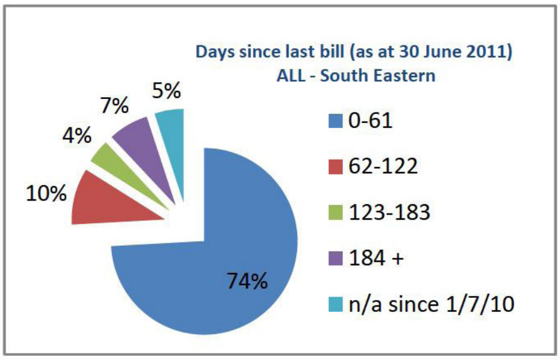
Appendix 7 – Analysis of ARMS' Billing Activity (continued)

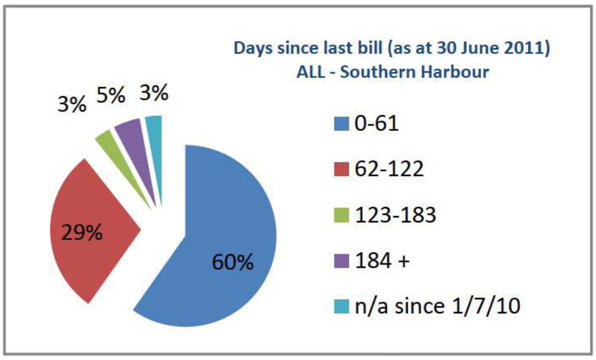


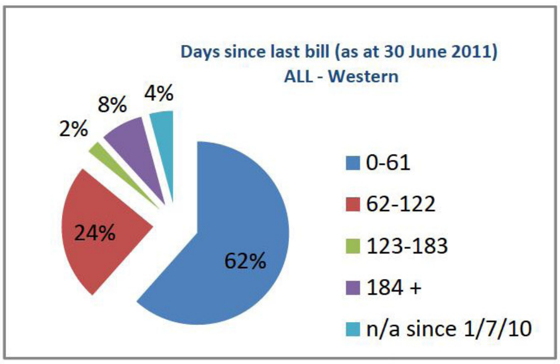


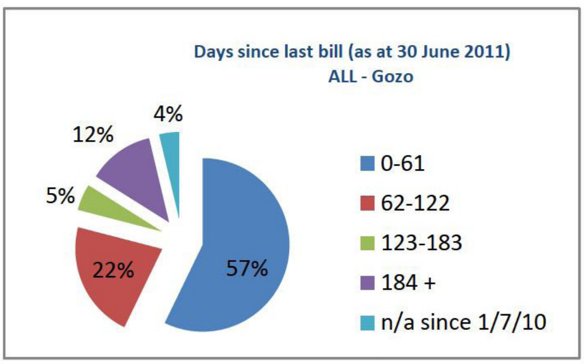




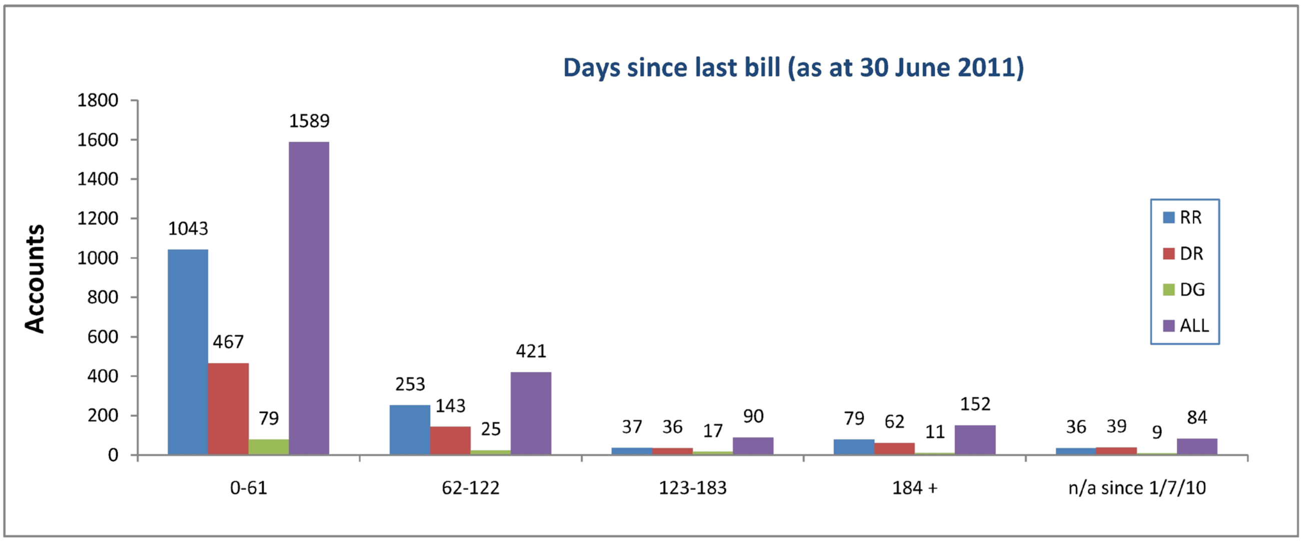


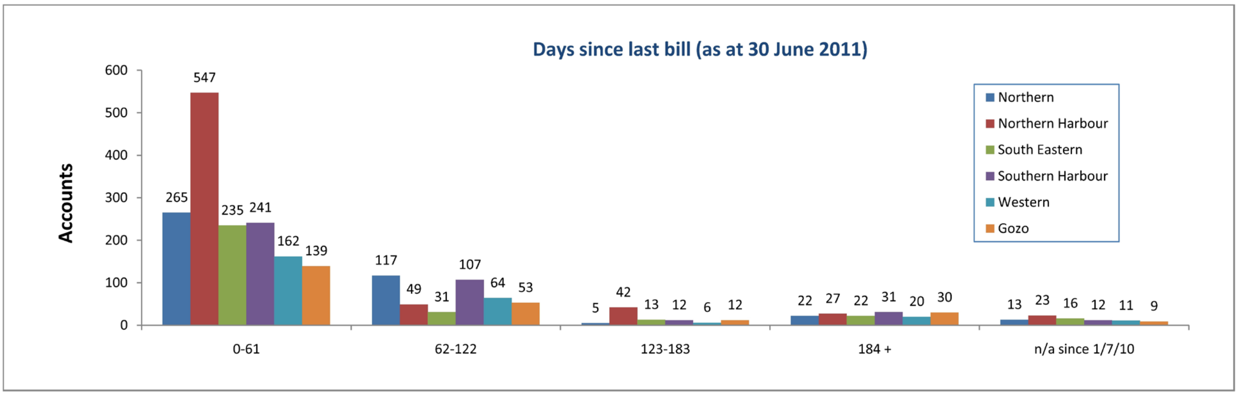






Appendix 7 – Analysis of ARMS' Billing Activity (continued)

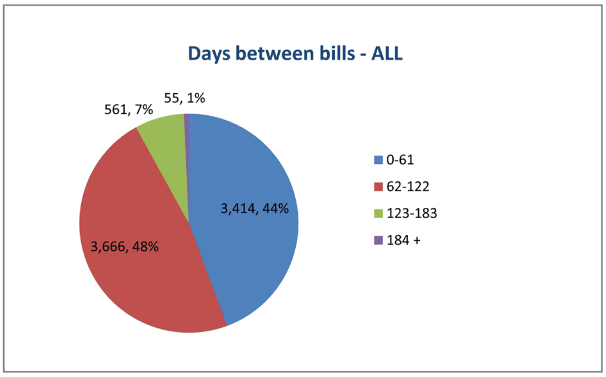


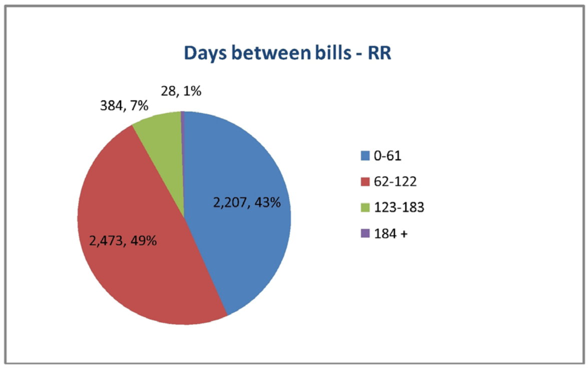


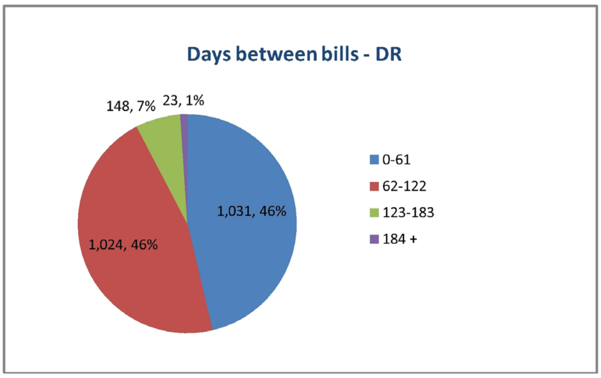
s) The inter-bill period, that is the number of days elapsed between two consecutive bills, was run on all accounts having at least two bills – all other accounts were ignored for the purpose of this exercise.

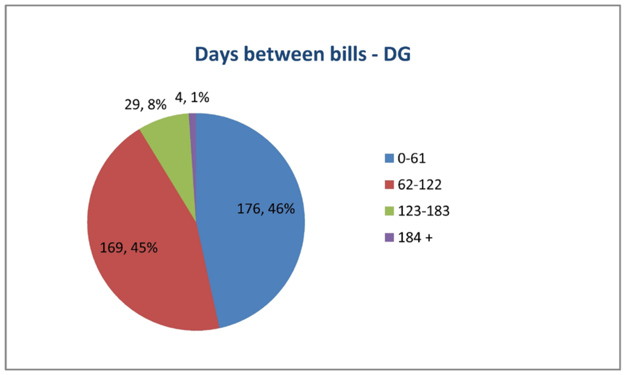
t) Data was grouped into: 0-61; 62-122; 123-183; and 184 + days. The pertinent charts follow:

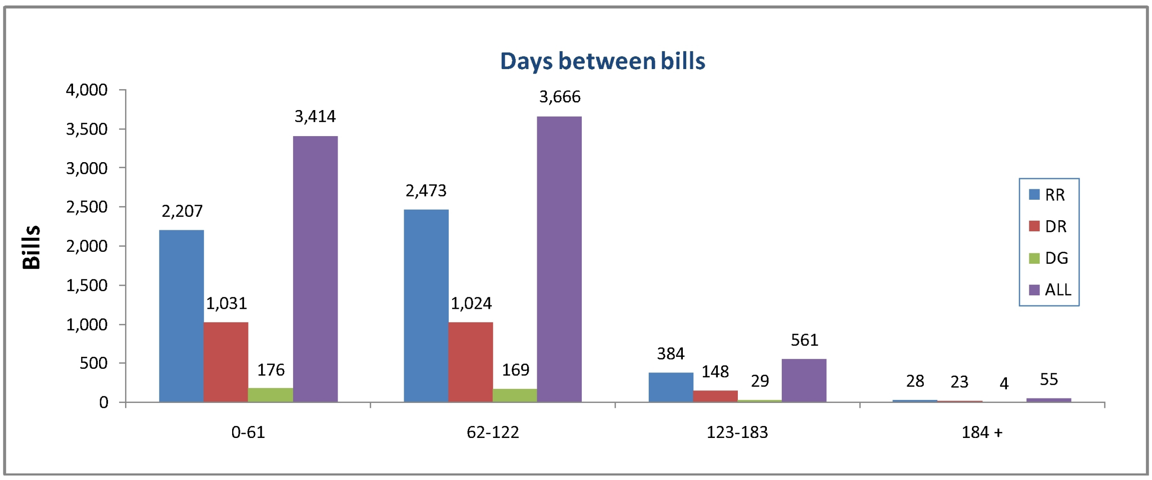
Appendix 7 – Analysis of ARMS' Billing Activity (continued)

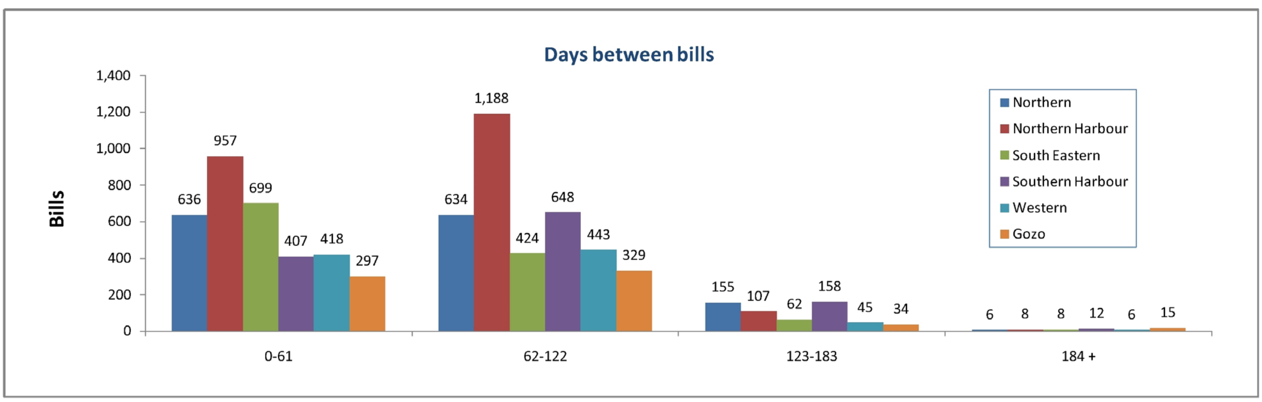










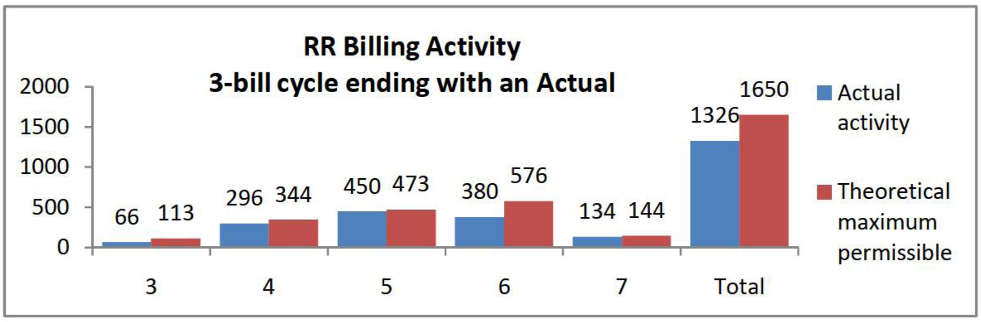


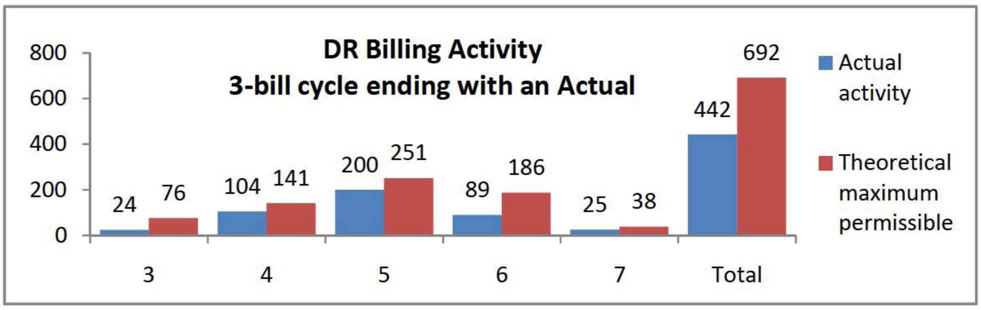
Appendix 7 – Analysis of ARMS' Billing Activity (continued)

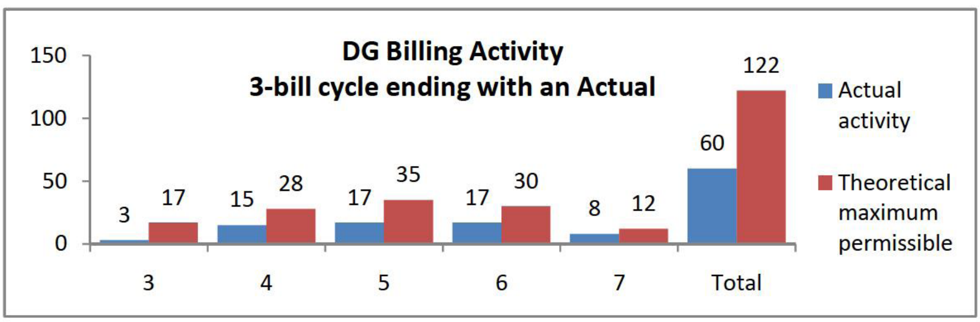
u) The next test comprised checking compliance with ARMS' declared 6-month billing cycle made up of two 'Estimate' followed by one 'Actual' bill. This implies a 'base unit' cycle of three bills. Therefore, data considered for this test excluded all accounts with less than three bills posted.

v) The data was interrogated to determine whether the last of any three consecutive bills was an 'Actual' or not. (xxA was considered to be in compliance with or surpassing ARMS' policy of an EEA pattern – where 'x' can be either an Estimate or an Actual).

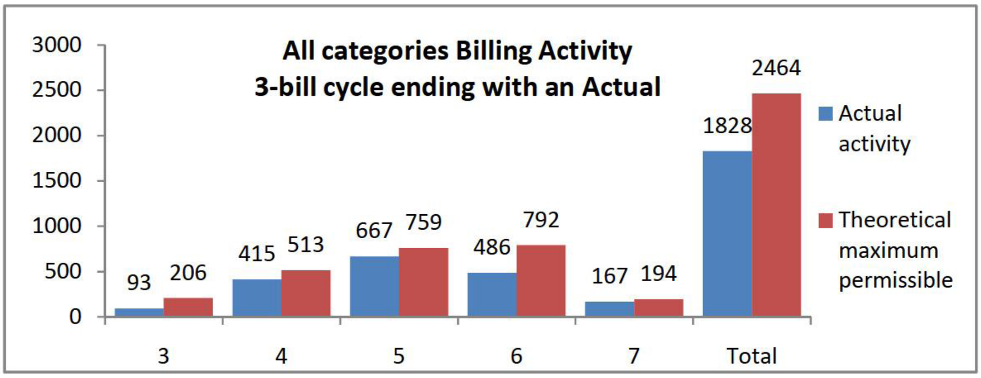
w) These results were available per category, for all categories grouped as one, and for all categories grouped by geographical region. The set of six bar charts below depict the results obtained. In each case, actual performance is compared against the 'theoretical' benchmark being the maximum number of 'xxA' cycles that ARMS could have performed for each account, depending on the number of times a bill was issued for the account.

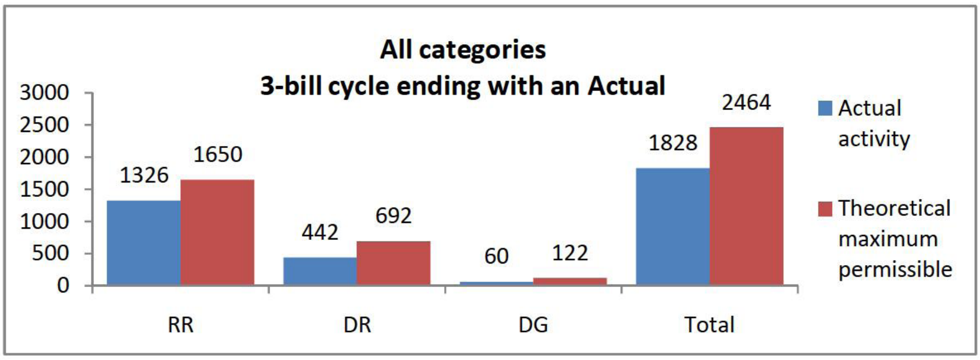


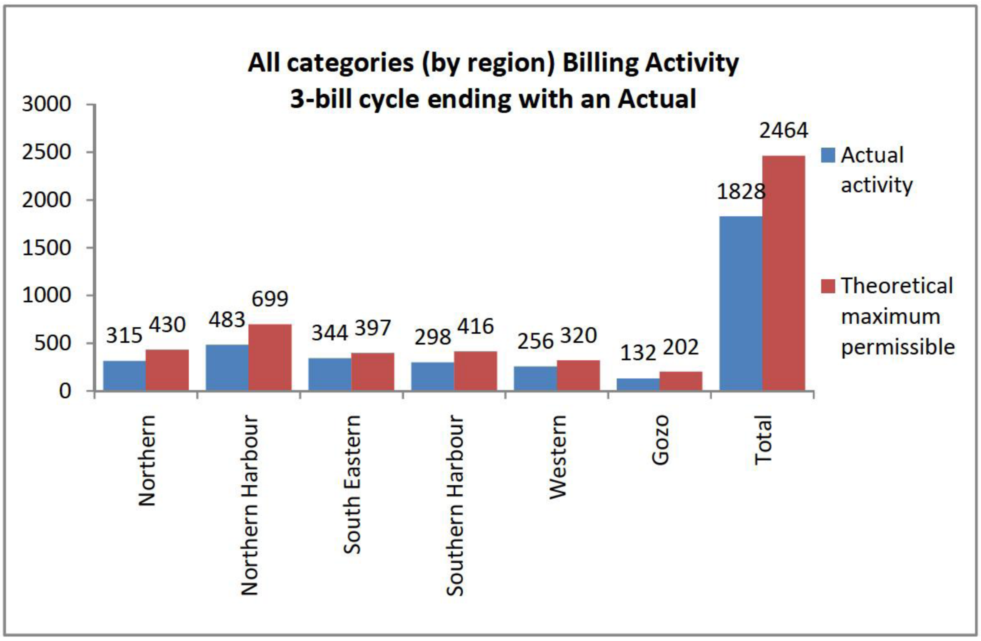




Appendix 7 – Analysis of ARMS' Billing Activity (continued)







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[i] Projected activity is calculated as being, for any 12 month period, a twin (6 month each) cycle of two estimate bills and one actual bill, with inter-bill frequency set at two months.

Appendix 8 – Copy of ARMS' Bill

HOW TO PAY YOUR BILL

BY DIRECT DEBIT
You get €3 (€18 annually) discount per bill (credited in a subsequent bill) if you pay by direct debit. You can download a direct debit mandate from our website www.wsc.com.mt, or we can assist you in setting up this facility at one of our Customer Care Offices.

BY CREDIT CARD OR DEBIT CARD
Payment by cards can be done through:
- our website www.wsc.com.mt
- internet banking (www.bov.com, www.hsbc.com.mt, www.apsbank.com.mt)
- BOV Phone Banking services (21322121)
- HSBC Phone Banking Services (23802380)
- any of our Customer Care Outlets
- send details on back of the remittance slip

BY POST
Send a cheque payable to ARMS Ltd together with the remittance slip (tear the bottom part of the bill) in the enclosed postage paid envelope. Kindly write your Utility account number and the bill number (displayed at the top of the bill) at the back of the cheque. **Do not send any cash through the mail.**

CUSTOMER SERVICE OUTLETS
- WSC Building, Qormi Road, Luqa, Malta
- WSC Offices, Triq il-Bastjun, Victoria, Għawdex

Opening hours Monday to Friday between 8:00 till 13:30 in winter and till noon in summer

ALTERNATIVE OUTLETS (FOR BILLING SETTLEMENT ONLY)
- At any Maltapost plc branch (full payment only)
- Through any Bank of Valletta or HSBC ATMs

PLEASE NOTE
- **A €35 administration charge and relevant interest charges will be applicable for each payment which is dishonoured.**
- **Whilst the official due date is that of 15 days from the date of invoice, consumers are being granted 45 DAYS to settle their bill, without incurring any penalty**
- **However, if payment is not received within 45 days (from date of invoice), interest of 6% per annum will be charged from the 15th day after invoice date**
- **The Company may suspend your Utility services if bills remain unpaid**
- **In the case of a service suspension, charges will apply**
- **The Electricity Supply Regulations may be viewed at www.enemalta.com.mt**
- **The Water Supply Regulations may be viewed on www.wsc.com.mt**
- **Ensure actual meter readings are made available as scheduled by:**
  1. Providing access to meter reader
  2. Sending an email to customer care
  3. Calling Freephone 8007 2222

DO YOU HAVE A SMART METER INSTALLED?
All customers will have a smart meter installed by the end of 2012. With smart meter devices installed at your premise all bills you receive will be based on actual readings. The inconvenience of a meter reader visiting your premise will stop once your locality has been connected to the main system.

ARE YOU ABOUT TO SELL, BUY OR RENT PROPERTY?
When selling, buying, or renting out your property we strongly advice both parties to ensure that all pending bills are settled, and that the water and/ or electricity account is transferred. You can download a *Transfer Property Account Form* from our website www.wsc.com.mt, or collect it from one of our customer care offices.

If your property is unoccupied and you wish to avoid being billed on estimates, and have your consumption read yearly, you can submit a *Declaration of Service Not In Use* application at our contact centre offices.

ARE YOU BENEFITING FROM ECO-REDUCTION?
The eco-reduction is calculated on the number of persons registered on your account. If the *number of residents* displayed on your bill (top right corner) is not correct please contact us.

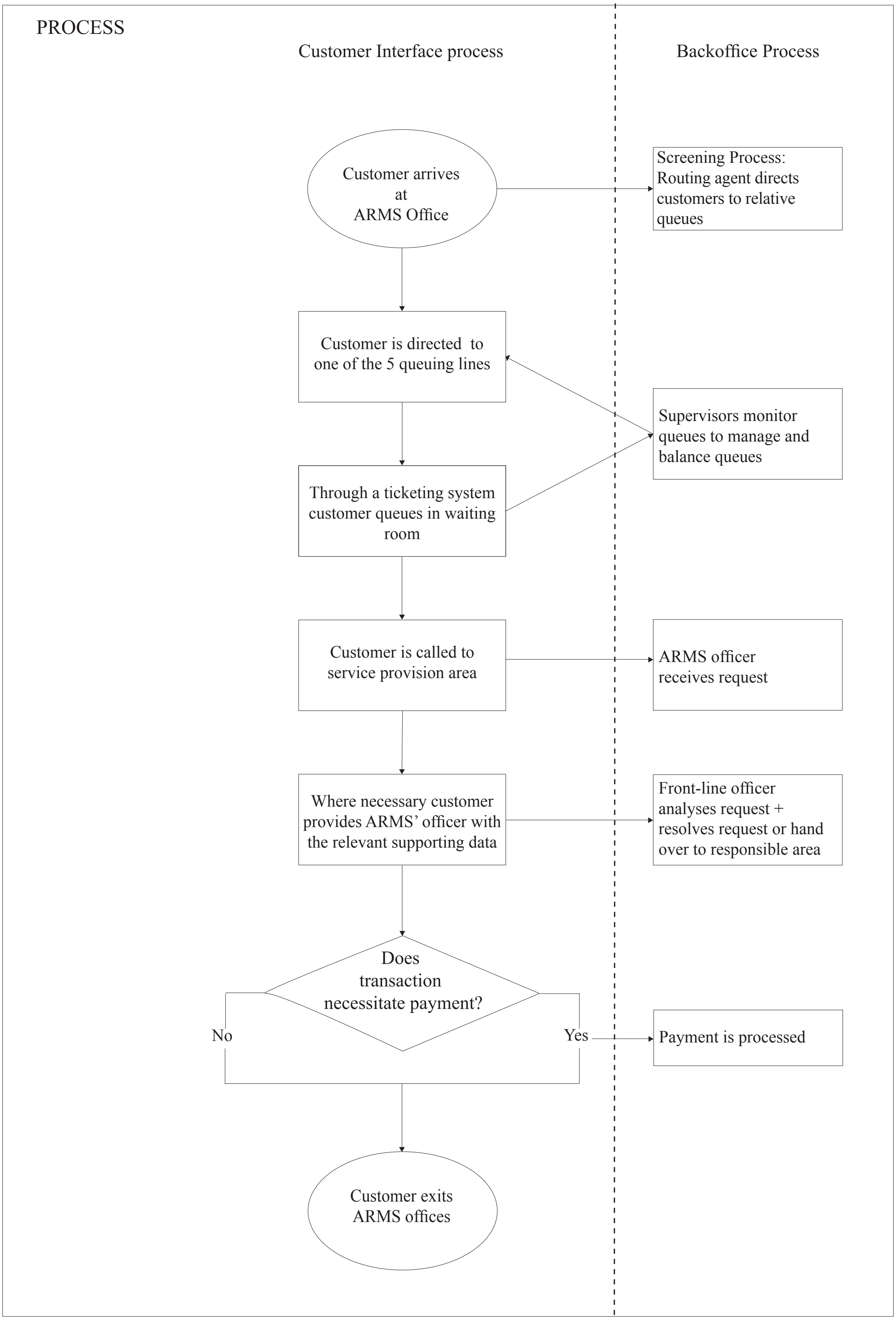
The eco-reduction for electricity will be calculated on the basis of an actual or consumer reading. Estimated bills, and any calculation of eco-reduction contained therein, do not bind the Corporations.

DATA PROTECTION
In accordance with the Data Protection Act the information contained herein will only be used for billing purposes. In the case of companies or other corporate bodies presenting cheques which are not honoured, the Corporations reserve the right to transfer data to the Malta Association of Credit Management (MACM).

CONTACTING US
- Freephone 8007 2222 for assistance regarding queries related to your service or bill as well as any technical problems related to water supply, leakages and wastewater
- Freephone 8007 2224 for assistance with regards to technical problems related to electricity supply
- www.wsc.com.mt
- www.enemalta.com.mt
- E-mail at customercare@arms.com.mt
- **Postal Address: ARMS Ltd, P.O. Box 63, Marsa, MRS 1000, Malta**

Please check your bill to make sure that your surname and name, the number of residents, as well as service and postal address, are correct.

Appendix 9 – Flowchart illustrating Process at Customer Care Section



Appendix 10 – Interim Agreement between ARMS Ltd., WSC and GWU

Interim Agreement reached today 10 March 2011 between Automated Revenue Management Services Ltd (ARMS Ltd) , the Water Services Corporation (WSC), and the General Workers Union (GWU) hereunder referred to as the Union.

It is hereby agreed that:

1. Employees as identified in Appendix 1 are to be seconded from WSC to ARMS Ltd with a guarantee that they would continue to enjoy working conditions not less favourable than those that they currently enjoy at the WSC until a new collective agreement is concluded with ARMS Ltd;
2. For all intents and purposes employees seconded to ARMS Ltd are to fall under the direct responsibility of the management of ARMS Ltd and to comply with instructions issued by the Executive Chairman or his accredited representative/s;
3. Employees are to be flexible, within reason, and continue to carry responsibilities pertinent to their salary scale in carrying out their duties;
4. All years of service with the WSC (and even that with Government, if it is the case) will be recognised for the purpose of seniority computation, by ARMS Ltd;
5. ARMS Ltd management are to initiate the process to negotiate the first collective agreement for the employees of this company. Both parties i.e. ARMS Ltd and GWU shall endeavour to conclude the collective agreement at the earliest;
6. Within 2 months from the date of signing of the first collective agreement employees seconded to ARMS Ltd shall be asked to declare in writing whether they would opt to revert to the Water Services Corporation or to take up permanent employment with ARMS Ltd. The reversion to WSC shall be demand driven and shall be carried out in a manner that ensures a smooth transition and subject to ARMS Ltd HR capacity requirements.
7. WSC Management shall endeavour to meet individual requests at the earliest. To facilitate the implementation of this principle WSC Management guarantees that no employees in the grades of staff seconded with ARMS Ltd will be recruited on an indefinite basis for the 8 eight month period commencing from the signing of this Interim Agreement. Until the employee is reverted back to WSC the employee/s shall continue to benefit from the basic salary and applicable allowances as specified in the WSC – GWU collective agreement in force at the time;
8. The provisions and safeguards enshrined in the letter dated 29th January 1996 signed by Mr. JR Grima to the GWU shall apply *mutatis mutandi*.

Wilfred J. Borg Executive Chairman ARMS Ltd	Marc Muscat Chief Executive Officer WSC	Josef Bugeja Section Secretary GWU

Appendix 11 – Questionnaire posed to ARMS' Employees

DEMOGRAPHICS

01	***Employee Name***	*Pre-filled*
02	**Section**	*Pre-filled*
03	**Designation**	*Pre-filled*

DUTIES RELATED

		Yes	No
04	I have been furnished with a Job Description.	☐	☐

		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
05	If ***Yes***: My duties are as per this Job Description.	☐	☐	☐	☐	☐

		Yes	No
06	My duties before transfer to ARMS Ltd were identical to those I carry out now	☐	☐
07	If ***No*** please elaborate	______	

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
08	With ARMS Ltd, I maintained the working conditions I previously had	☐	☐	☐	☐	☐
09	I feel my job and the prevailing work scenario allow me to be proactive and take initiative.	☐	☐	☐	☐	☐
	Generally, I am satisfied with information I received from ARMS mgmt regarding the collective agreement					
10	In the past	☐	☐	☐	☐	☐
11	At present	☐	☐	☐	☐	☐
12	Generally, the temporary staff performs the same tasks as I do.	☐	☐	☐	☐	☐
13	Generally, I have integrated well with the temporary staff.	☐	☐	☐	☐	☐

Appendix 11 – Questionnaire posed to ARMS' Employees (continued)

CUSTOMER CONTACTS

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
14	Generally, I deal with **all** stages of a complaint or enquiry	☐	☐	☐	☐	☐
15	Mgmt presence on the work floor facilitates dealing with queries and complaints	☐	☐	☐	☐	☐

		Always	In more than 50% cases	In around 50% of cases	In less than 50% of cases	Never
16	I deal with customers' complaints in real time, without the need to continue working on the matter after customer contact hours.	☐	☐	☐	☐	☐
17	I document enquiries and complaints.	☐	☐	☐	☐	☐
18	I am empowered to take action as necessary without the need to ask permission from my superiors	☐	☐	☐	☐	☐
19	I refer to Standard Operating Procedures and Manuals when necessary in order to answer query/complaints	☐	☐	☐	☐	☐

20	In my opinion, the medium most frequently resorted to by consumers to contact ARMS for <u>complaints</u> is	eMail	☐
		Face to face (over the counter)	☐
		Postal mail	☐
		Telephone	☐
21	________________	Don't know	☐
	________________	Other	☐

22	In my opinion, the medium most frequently resorted to by consumers to contact ARMS for <u>queries</u> is	eMail	☐
		Face to face (over the counter)	☐
		Postal mail	☐
		Telephone	☐
23	________________	Don't know	☐
	________________	Other	☐

Appendix 11 – Questionnaire posed to ARMS' Employees (continued)

CHANGES - DECISION MAKING PROCESS - CHANGES

24		Since the go-live of the new system, changes were effected to work practices.	Yes ☐ / No ☐
25	If Yes	Some of these changes were triggered by suggestions made by myself and/or my colleagues.	Yes ☐ / No ☐ / Don't know ☐
26	If Yes	In general, these changes improved efficiency.	Strongly Agree ☐ / Agree ☐ / Neither Agree nor Disagree ☐ / Disagree ☐ / Strongly Disagree ☐
27		If ***Disagree*** or ***Strong Disagree***, please elaborate	____________
28		ARMS deployed the one-stop-shop principle, with the aim of serving its customers better. The company was successful in this regard.	Strongly agree ☐ / Agree ☐ / Neither agree nor disagree ☐ / Disagree ☐ / Strongly disagree ☐
29		If not ***Agree*** or ***Strongly Agree***, please elaborate	____________

TRAINING

30	I underwent formal training since my transfer to ARMS Ltd	Yes ☐ / No ☐
31	I received sufficient training to enable me to s**<u>tart operating the software</u>** effectively	Strongly Agree ☐ / Agree ☐ / Neither Agree nor Disagree ☐ / Disagree ☐ / Strongly Disagree ☐
32	I received sufficient training to enable me to cope with the **<u>changes in operations</u>** effectively	Strongly Agree ☐ / Agree ☐ / Neither Agree nor Disagree ☐ / Disagree ☐ / Strongly Disagree ☐
33	I received the training in question before the changes were effected	Always ☐ / In more than 50% of cases ☐ / In around 50% of cases ☐ / In less than 50% of cases ☐ / Never ☐
34	At ARMS Ltd, training is an on-going process and was not given solely at the time the system went live	Yes ☐ / No ☐

Appendix 11 – Questionnaire posed to ARMS' Employees (continued)

2010 – 3rd QUARTER

35	In my opinion, the major problems that caused the situation prevailing during the period July to September 2010 were:						
	In my opinion, given circumstances, ARMS management took adequate corrective measures	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	
36	Immediately	☐	☐	☐	☐	☐	
37	Eventually	☐	☐	☐	☐	☐	
38	Apart from the measures taken, I would have:						

CLOSE OFF

39	Other relevant points I would like to draw attention to, not mentioned so far, are:	

Appendix 12 – Terms of Reference of Technical Expert

Terms of Reference – ICT expert – NAO investigation (ARMS Ltd)

NAO expects the ICT expert to expand, in liaison with the (NAO) Investigative Team, the area of investigation where ICT issues are concerned, taking as general and strategic guidance the Terms of Reference of the investigation in its entirety, namely that of determining the reason(s) for ARMS' failure to deliver as per its original objectives and to provide good service to consumers. The dynamics of the case are:

- A legacy system that had been in use for a number of years and that was deemed to be no longer adequate for modern-day management, manned in a co-joint effort by EMC and WSC;
- A procurement process covering, apart from the Billing and Customer Relations Management packages (replacing the legacy system as per above), other distinct areas, namely: Automatic Metering Management, the Supervisory Control and Data Access system (SCADA) and the Enterprise Resource Planning;
- The resulting acquisition and deployment of the chosen solution through the above-mentioned process; and
- A data migration process in the interim.

The expert will be expected to work off-site on tender and other pertinent document evaluation (eg, but not restricted to, evaluation/adjudication reports, pilot study reports, project notes as maintained by project managers, etc). The main objective of this task is to review the entire process, with particular emphasis on the technical aspect, and to follow up on the post-award activities – software installation, amendments, data migration, testing and going live. The outcome from this exercise is to be a learned opinion, substantiated by facts and findings, pin pointing the source(s) causing the resulting situation in billing.

Apart from the above, it is envisaged that the expert would require the holding of meetings with interested/involved parties with the aim of obtaining a more clear understanding of the situations prevailing.

The deliverable from the entire commission would take the form of a technical report which the Office may, at its discretion, annex to the main investigation report as tabled at the House of Representatives (HoR).

Once the Report be submitted at the HoR, this may be taken up for discussion at Parliament or at the PAC. In such an eventuality, NAO would expect the expert (or a representative from his firm) to attend such meetings and be in a position to furnish any and all explanation that Members of Parliament may demand of him.

As regards a Schedule of Works, NAO would expect the expert to develop this himself, in liaison with the NAO investigative team and in such a manner so as to not delay completion of the task unnecessarily or unreasonably.