REPORT ON
POST-IMPLEMENTATION BENEFITS STUDY
OF THE
MONTSERRAT PUBLIC LIBRARY:

ALEXANDRIA
LIBRARY MANAGEMENT SOFTWARE

January 2006 – October 2018

OFFICE OF THE AUDITOR GENERAL
BRADES, MONTSERRAT

February 2020

POST-IMPLEMENTATION BENEFITS STUDY OF MONTSERRAT PUBLIC LIBRARY:

ALEXANDRIA LIBRARY MANAGEMENT SOFTWARE

This is a Report of a Post-Implementation Benefits IT Audit conducted and report prepared in accordance with Section 103 of the Montserrat Constitution Order 2010

Florence A Lee
Auditor-General
Office of the Auditor General
February 2020

PREAMBLE

Vision Statement

"To be a proactive Supreme Audit Institution that helps the nation make good use of its resources."

Mission Statement

"The O.A.G is the national authority on public sector auditing issues and is focused on assessing performance and promoting accountability, transparency and improved stewardship in managing public resources by conducting independent and objective reviews of the accounts and operations of central government and statutory agencies; providing advice; and submitting timely Reports to Accounting Officers and the Legislative Assembly."

The Goal

"To promote staff development, enhance productivity, and maintain a high standard of auditing and accounting in the public sector, thereby contributing to the general efficiency and effectiveness of public finance management."

AUDITOR GENERAL'S OVERVIEW

The Alexandria, library management software, was introduced in 2006 to aid the Montserrat Public Library in improving its library services. We conducted a Post Implementation Benefits Review to determine whether (a) the benefits identified at the acquisition of the software were achieved; and (b) the MPL has any plans for future enhancement of the software.

Our review revealed that documentation of the benefits to be derived from the procurement of the Alexandria software was unavailable as we could not find any project related documents. Thus, with regard to objective (a) we could not determine whether the benefits as outlined were achieved. However, through walk thru tests and observation of persons using the software, it was determined that the software streamlined the former manual and automated library services. It was also found to be reliable and user friendly.

With respect to (b) we found that the MPL has plans to utilize cloud technology, however, existing legislation that governs the operations of the library does not make provision for the use of this Information Technology initiative.

The Ministry of Education should liaise with key stakeholders to get relevant IT Bills and Regulations enacted that would assist the Library in achieving its planned initiative.

Florence A Lee
Auditor-General
February 2020

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ABBREVIATIONS

CD	Compact Disc
CDS/ISIS	Computerised Documentation System/Integrated Sets of Information System
DDC	Dewey Decimal Classification
DITES	Department of Information Technology & e-Services
DVD	Digital Versatile Disc
EC	Eastern Caribbean
GB	Gigabyte
HMP	Her Majesty's Prison
ICT	Information Communications Technology
ISSAI	International Standard of Supreme Audit Institutions
ISAE	International Standard on Assurance Engagements
MAC	Montserrat Aid Committee
MoE	Ministry of Education
MoFEM	Ministry of Finance & Economic Management
MPL	Montserrat Public Library
MSS	Montserrat Secondary School
PWD	Public Works Department
RAID	Redundant Array of Independent Disks
TB	Terabyte
TCF	Treasury Consolidated Fund

EXECUTIVE SUMMARY

Overview

From its official inception circa 1950s, the Montserrat Public Library (MPL) utilised the manual Browne Issue library system to manage the loaning of books and resource materials. However, in 2006, the MPL decided to implement the automated library management software called Alexandria, in order to improve upon the previous outdated, manual, library system and to streamline the library services being provided to the general public.

Key Finding and Recommendation

The key finding of this Post-Implementation Benefits study was that the MPL will shortly be utilising Cloud technology. However, the organisation is governed by the *Central Library Act*, which does not make provisions for the future Information Technology initiatives that the MPL intends to implement; specifically jurisdictional issues. With the use of the Internet and Cloud technology, foreign regulations on information storage and transfer may limit what can be stored and how it can be processed; data may be used by law enforcement of a foreign country without the knowledge of the organisation; privacy and security standards may not always be commensurate; and disputes as a result of the different legal jurisdictions, which cannot be totally avoided.

Therefore, we are strongly recommending that the GoM establish and approve the Information Communications Technology Bills and Regulations that were pledged in the 2019 Labour Day Address, on 6th May 2019 within the next 2 years. The Ministry of Education, with support from the Montserrat Public Library, should liaise with key stakeholders to ensure the establishment of these appropriate Laws and Regulations and their alignment with the *Central Library Act* to counter the aforementioned and any other data security issues that could potentially arise with the Cloud hosting option and intended future initiatives.

Audit Conclusion

From this Post-Implementation Benefits audit, we have determined that the Alexandria Library Management Software has streamlined the library services; and the achievement of planned initiatives would be advantageous for the Library, their patrons and the general public at large, in the long term.

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CHAPTER 1 INTRODUCTION

Background

1. Alexandria is library management software that manages patrons and library materials. Initially, a manual card-based system, known as Browne Issue, was being utilised by the Montserrat Public Library circa 1950s. As time and technology progressed, this manual library system proved to be antiquated, time-consuming, and prone to human error. Subsequently, the Montserrat Public Library (MPL) decided to invest in and implement the Alexandria library management software in 2006, as a means to streamline the previous manual library system and services being offered to patrons and the general public.

Management Responsibility

2. Management is responsible for ensuring that project objectives were achieved. More specifically, management must ensure that the project output is beneficial to the users of the Alexandria library management software.

Auditor's Responsibility

3. Our responsibility is to independently express a conclusion on the Post-Implementation Benefits audit of the Montserrat Public Library's Alexandria software, based on our audit. Our work was conducted in accordance with International Standards of Supreme Audit Institutions (ISSAI) 100 and International Standard on Assurance Engagements (ISAE) 3000. These principles require that we comply with ethical requirements and plan and perform the audit in order to obtain reasonable assurance whether tried and true policies, plans, procedures, and internal controls exist and are functioning effectively, proper records have been and are being kept, and all the necessary information and explanations for the purpose of our audit, has been obtained.

Audit Mandate

4. The Office of the Auditor General (OAG) is mandated through the Montserrat Constitution Order 2010 to perform the audit. This mandate is supported by International Standards of Supreme Audit Institutions (ISSAI) 1, 200, 300, 400, and strengthened by the Public Finance Management and Accountability Act (PFMAA) 2008 and the Public Finance Management and Accountability Regulations (PFMAR) 2009.

Audit Standards & Guidelines

5. The standards and guidelines used to assess the Alexandria library management software included the use of International Standards of Supreme Audit Institutions (ISSAI) 3100, 4100, and 5300.

Audit Objectives

6. The main aims of this Post-Implementation Benefits review were to:

(A) Determine whether the benefits identified for investing in the Alexandria library management software, were achieved.

(B) Determine whether the MPL has any plans for future enhancement of the Alexandria library management software.

Audit Scope and Methodology

7. The study will mostly cover the period January 2006 to October 2018, and will focus on the examination of the Post-Implementation Benefits of the Alexandria library management software. The Auditors will monitor the audit in the field and may amend any area or the audit scope in consultation with the Auditor General, so as to maximize the efficiency of the audit.

8. A combination of techniques were utilised to gather information and validate the beneficial achievements for investing in the Alexandria software. These included, but were not limited to, interviewing the key stakeholder(s) at the Montserrat Public Library, Ministry of Education, Chief Procurement Officer and Legal Department; inspection of documents; observation of the software; and the issuance of a questionnaire, in order to gather in-depth information about Alexandria.

9. The findings of this study were discussed with the Head Librarian and her views were taken into consideration when finalising the report.

CHAPTER 2 MONTSERRAT PUBLIC LIBRARY

Brief History

10. Early library services in English-speaking Caribbean countries in the 19th century was not evident until circa 1890s, where the plantocracy paid subscriptions for books from England. The concept of free public library service for the British Caribbean islands was established in the 1940s by the British Council and legislation for public library services in Montserrat, was enacted in 1951. Eventually, the responsibility for and administration of the library services in Monserrat, fell under the Ministry of Education (MoE). [1,2,3]

Browne Issue Library System

11. The Browne Issue system was a complex, manual, method utilised by the MPL for loaning books, since their inception in the 1950s, until 2006. This system consisted of pockets and cards where each library book had an index-sized card that was inserted in a paper pocket attached to the inside of the front cover. The book cards and pockets identified each book by recording its Dewey decimal classification number, the author, and book's short title.

12. However, the Browne Issue system had quite a few significant drawbacks to include (i) a lot of manual processing (ii) prone to misfiling errors, and the (iii) accidental disarrangement, of the patron pockets and book cards.

Computerised Documentation System/Integrated Sets of Information System

13. With the advent of Information Technology (IT), the MPL embraced a free automated method of administering the library's resources. Consequently, circa early 2000s, the MPL begun using an MS-DOS based, open source software, called CDS/ISIS. It was designed by UNESCO, mainly for developing third world countries that could not afford to acquire costly library management software solutions.

14. The CDS/ISIS only had the capacity to store and retrieve the book catalogue data (file management) as the software did not facilitate the storing, retrieval, or processing of patron information. Consequently, the MPL had to continue using the Browne Issue method of processing patron information, alongside CDS/ISIS.

15. The library's database reportedly became corrupted during an attempt to upgrade to the WINISIS version and MPL had to revert back fully to the Browne Issue system. As a result, a new software was sourced to ensure the efficiency and effectiveness of operating the library services; the Alexandria Library Management software.

Vision and Mission Statements

16. The Montserrat Public Library's vision is, *"The creation of a world of ideas and information within the reach of each resident on Montserrat."*, and it is their mission, "*To*

[1] *https://www.ifla.org/past-wlic/2011/81-davis-en.pdf*

[2] *https://www.ideals.illinois.edu/bitstream/handle/2142/5876/librarytrendsv8i2f_opt.pdf?sequence=1&isAllowed=y*

[3] *Public Library, Ministry of Education, 1998 Work Programme, Prepared April, 1998*

provide library and information services to people of all ages, encouraging lifelong learning, and to preserve and promote national identity and maintain cultural heritage."

Legal Framework

17. The Montserrat Public Library (MPL) is mandated by the *Central Library Act*. The Act provides information for the establishment of the MPL, functions of the Board, appointment of Library personnel, Regulations, recovery of fines, etc.

Organisational Chart

18. According to the MPL's 2007 organisational chart, the full Library staff complement should consist of the following six posts (*see Appendix I*):

- Chief Librarian/Library Director/Librarian II
- Librarian I (New Post)
- Senior Library Assistant
- Senior Clerical Officer/Library Assistant
- Library Assistant/Clerical Officer
- Library Attendant/Driver (Vacant Post)

Currently, aside from the Head Librarian (Librarian I); the MPL only has a staff complement of three full-time library staff, that is, **(a)** Senior Library Assistant **(b)** Senior Clerical Officer/Library Assistant and **(c)** Library Assistant/Clerical Officer.

Resources and Services Offered

19. The resources and services that the MPL currently offer to the general public are as follows:

- Books
- Journals
- Magazines
- Newspapers
- Multilingual Materials
- Material for the visually Impaired
- Government documents
- Business Resources such as photocopying, laminating, spiral binding, fax and scan facilities
- Computers and Internet Access
- Wireless Internet Connection

Closed Collections

20. There is a Closed Collections section and the materials in this area are not open to the general population; only registered customers who are of good standing can borrow items for a very short period from this area, with the head Librarian's permission.

Registration

21. Registration requires a current photo ID, verification of address (driver's license or a utility bill), and completion of a library card application. Each patron is issued barcode readable plastic library card. Registered patrons are allowed to check out up to nine (9) items for two weeks. These include books, periodicals. All items can be kept for two weeks and are eligible for two (2) renewals; that is, unless the material is reserved by another customer.

Late Fees

22. A late fee of twenty-five (25) cents, per day is charged for overdue items borrowed. Unpaid fines exceeding $5.00 will see the suspension of patrons borrowing privileges (check-out of library materials and free Internet Access) until it is paid off.

Reserves

23. Patrons may reserve material that are held by the library or are incoming, pending processing. Each customer is allowed to reserve two (2) items. If a customer requests more than two reserves, the first two items which are processed will be released. The item will be held for five (5) consecutive days only and then be released to general circulation.

Book Drop

24. There is a book drop bin located at the front of the Library for the return of library books after opening hours, and on days the MPL is not open to the public.

CHAPTER 3 ALEXANDRIA LIBRARY MANAGEMENT SOFTWARE

Project Summary

25. [4,5,6]In 2006, the Alexandria library software solution was selected to improve upon and provide better services, to the general public. The software is a web-based cross-platform that can be used or accessed on different types of computers or devices with different software packages. It is a fully featured computerised program that is easy to set up and can be tailored to the unique needs of the customer.

26. The MPL chose the Distributed Catalogue option that gave the organisation complete autonomy to manage their own book collections catalogue and independently maintain control over the library's policies, procedures, preferences, patrons, and third party tools. This included:

- patron information management
- calculation of fines for overdue books
- automatic suspension for overdue fine
- generation of reports
- monitors the number of books that were checked-in/out over a period of time (patron history management)
- create a database of the materials (books and resources)

27. The MPL elected to utilise the self-hosting method where a dedicated server is located on MPL's premises, as opposed to the web-based functionality. In this way, the organisation had complete control over their Alexandria data and was responsible for performing their own backups. At the time of the audit, GoM's IT Department, DITES, was responsible for the updating and maintenance of the server.

Planned Project Deliverables

28. There is limited information available on the initial solicitation and procurement undertakings that transpired between the MPL and COMPanion Corporation, due to the absence of any Alexandria project-related documentation or a SLA/Contract. The sole evidence found were two substantial proofs of payment in SmartStream, dated September 2006, to the COMPanion Corporation.

29. However, the current Librarian who is well-versed in the use of the Browne Issue system, surmised that the original project objectives for progressing to the Alexandria Library management software, was to primarily improve the overall efficiency of the library services offered to patrons by:

- being user friendly
- managing patron information and the library books catalogue.
- speeding up the checking in/out process of loan items via the use of barcode readers/scanners, barcode labels, and barcode readable library cards.

[4] *https://reviews.financesonline.com/p/alexandria/*
[5] *http://support.companioncorp.com/display/ALEX/Support*
[6] *https://smartmarc.software.informer.com/*

Project Schedule

30. The timeline for the completion of the Alexandria project was unknown due to the non-existence of documentation or information pertaining to the Alexandria project activities.

Project Cost

31. The total project cost for the procurement and implementation of the Alexandria 15 user-licence, server, labels and accessories, and training for four members of staff, and sub-renewals for Alexandria and SmartMARC softwares was US$7,591.70 or the equivalent of EC$20,626.00.

Observations

32. **Annual Fees.** MPL currently pays COMPanion Corporation two annual subscriptions for the Alexandria and SmartMARC softwares. SmartMARC is a cross platform (Windows and Macintosh), industry-standard cataloging tool which is used to locate, update, and save MARC records directly into any library automation system.[7]

33. **Network Architecture.** The MPL's network for the operation of the Alexandria software is a client-server configuration consisting of a single server and five client computers. To access and utilise Alexandria from the client computers, the server must be powered on, and then the software is booted up from the server. An advantage of the client-server network architecture is the continuous access and use of Alexandria whenever the external network connection to DITES is interrupted.

34. **Application Controls Issue**. Access to the Alexandria software, like most software, has clearly defined roles and/or privileges mapped to each of the Librarian's Alexandria user accounts. Nonetheless, it was noted that the Head Librarian's user ID and password was being used by all levels of library staff, to log-in to Alexandria. This is a very unsafe practice, as only one user audit log is being generated making it difficult or impossible to trace user activity such as errors and amendments, back to specific library staff.[8]

35. **Business Continuity.** DITES is only responsible for performing troubleshooting and maintenance of the server hardware at MPL's premises. The Library staff have not being performing backups of the Alexandria catalogue and patron data on the server as instructed by COMPanion Corporation. They are to execute this task until they switch over completely to Cloud hosting.

36. The MPL is in possession of a 2 Terabytes (TB) external hard drive to resume the safeguarding of MPL's catalogue and patron data, as it is always important to have an auxiliary back-up in case of unexpected incidents.

37. **Support.** Alexandria provides live technical support, 24/7/365, via phone or email. There is also a *Support Center* page that guides users with step-by-step illustrated

[7] *https://smartmarc.software.informer.com/*

[8] *WGITA IDI Handbook on IT Audit for Supreme Audit Institutions, February 2014*

instructions, release notes, "Tips of the Week", or with videos, which the Library staff are encouraged to refer to, for guidance and troubleshooting.[9,10]

38. **Barcoding**. Barcodes that represent the classifying information of books or magazines are entered into Alexandria and generated by the software. Staff selects the options from the **Report: Special** window to produce barcodes and to print them onto generic, blank, labels. These printed barcode labels are affixed onto the last page of a book or magazine, or on areas where there is no script. Once the barcode label is scanned the items are automatically added to, or removed from, the opened patron account.

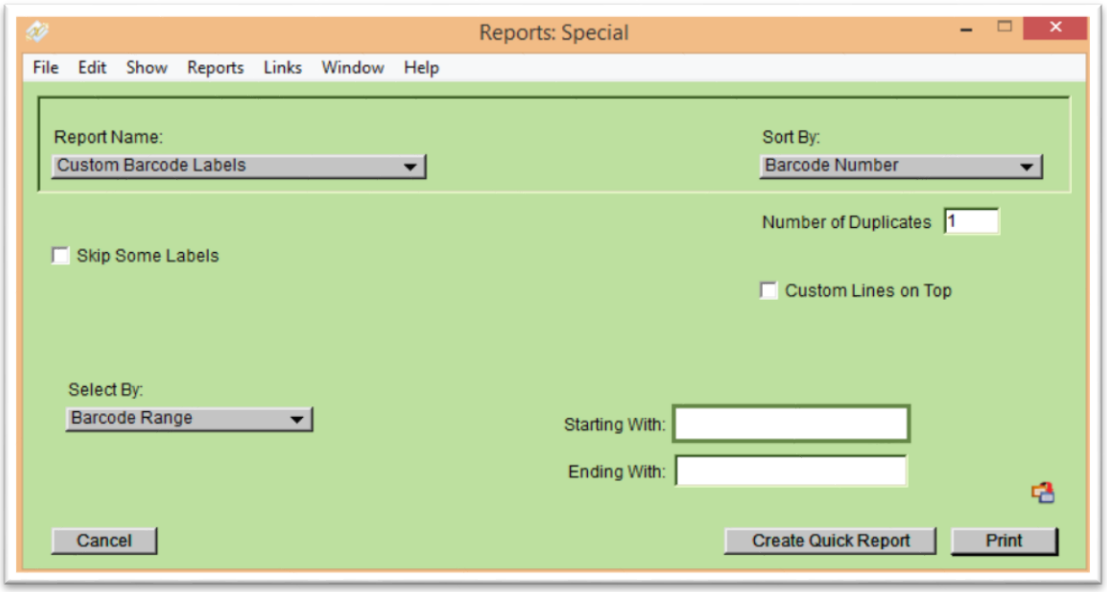

Figure 1 - Reports: Special Window for Generation of Barcodes and Printing of Barcode Labels

39. Pre-numbered plastic barcode library cards are bought in bulk by the Library from the manufacturer in chronological order. In creating a new patron account in Alexandria, a card number is assigned and linked to the new account and the library card is issued. When a patron's library card is scanned or the card number is manually inserted into Alexandria, the patron's account window automatically appears on the screen.

40. Barcode scanners are connected to each of the library's six client computers, including the main front desk where the members of staff attend to patrons and process the library books. However, at the time of this review, it was noted that only four out of the six scanners were functioning.

41. **Overdue Fines and Suspension of Privileges.** When library books are overdue and a patron returns the item that was borrowed, the account is accessed by either scanning their library card or via a manual search, a red-coloured **Overdue Fine** window appears indicating the amount owed. Overdue charges surpassing EC$5.00, will result in the delinquent patron's borrowing rights suspension for a set time frame, from a **Patron Suspension Window** menu.

[9] *https://www.goalexandria.com/support*
[10] *http://support.companioncorp.com/display/ALEX/Support*

Figures 2a & 2b - Overdue Fine and Patron Suspension Windows

42. **Book Drop Facility.** The book drop bin is located outside at the front of the Library, and is cleared by the Library staff each morning and the returned items, scanned into Alexandria. Whenever the barcode reader does not work, the books can be entered manually via the **Book Drop**, pull-down menu.

43. **Reserving Books.** Books can also be reserved for a specified date range, from a pop-up window with drop-down menu options. Once the requesting patron does not check out the reservation by the end date, the reserved item will automatically return to an *Available* status in the system.

44. **Oversight of Library Books and Catalogue.** Books in the library catalogue, and on the shelves for loan, are classified and regulated according to their condition and whether they were donated to, or bought by, the Library. Substandard or poor quality books are taken off the shelves, deleted from the Alexandria database with the approval of the Head Librarian, and sold for EC$1.00.

45. **Alexandria's Privacy Policy.** [11]Alexandria stipulates that it shares information with external third-party providers to include, and not limited to: analytics, marketing, payment gateways, shipping providers and third-party embeds. The Privacy Policy pertains specifically to the Alexandria website that outlines what information is collected, how it is collected, for what purpose, and any related options available to the user.

[11] *Alexandria's Privacy Policy, last modified 06/07/2018*

(A) Collection and Use of Personal Data

46. The document states that personal data is not created by the user's interaction with the site, it is only generated when: they complete contact forms; make comments; cookies recognise the user's browsers and captures certain information and monitors the user's traffic data; third party analytics tracks user's online shopping activity; third-party embeds (e.g. videos, images, articles, etc.) tracks and monitors users' interaction with the embedded content; etc.

47. Once a user submits a form; sets up an account; subscribes to their blog or processes a transaction in the Alexandria store, they will be required to provide: email address, affiliated organisation, mailing address, phone number, or credit card information. The information will be used to:

- Improve the Alexandria website
- Process transactions
- Improve customer service
- Personalize user experience
- Facilitate website administrative functions
- Send periodic emails.

(B) Users Data Rights

48. Users can request an exported file of the personal data that Alexandria holds, including the data that was provided by the user. They can also request their personal data that is being warehoused by Alexandria, to be erased; once it is not the obligatory data that has to be kept for administrative, legal, or security purposes.

(C) Protection of User Data

49. Alexandria stipulated that they do not sell, exchange, transfer, or give the personal information that they collect to any other entity without the users' consent, *"…other than for the specific purpose of delivering a product or service that was requested…"* The company also applies various security measures to ensure security of the submitted data, such as secure servers, Secure Socket Layer (SSL) technology, and encrypted e-commerce transactions. Upon completion of a transaction (credit cards, etc.) no sensitive data is stored on their servers.

50. In addition, only authorised personnel, such as Administrators and Shop Managers, can access customers' orders/purchases information (name, email address, billing and shipping information). They only have access in order to help fulfil orders, process refunds and provide customer support; and are legally bound to keep the above-mentioned data, confidential.

CHAPTER 4 FUTURE INITIATIVES

Cloud Hosting

51. The decision to embrace the Cloud Hosting alternative offered by the COMPanion Corporation was a direct result of an Application Control security issue. The former Chief Librarian, who was the sole Administrator of the Alexandria system, had instituted security parameters that prevented access to the software. Log-in to Alexandria by the varying levels of staff, is via the Head Librarian's user ID and password.

52. The COMPanion Corporation was unable to resolve this issue and recommended that the MPL advance over to the Cloud Hosting alternative. With the Cloud Hosting option, COMPanion will manage all of the MPL's Alexandria data, monthly automatic updates and/or upgrades, backups, and maintenance, without any additional or hidden costs.

53. MPL and DITES will no longer be responsible for the oversight of the Alexandria server and data, as COMPanion Corporation offers the following amenities:

- secure access restricted equipment protected by backup power
- climate controlled environment
- reliable internet connection via redundant (backup) internet connections
- 24/7 electronic monitoring
- scheduled equipment modification and upgrades at low use periods with minimal downtime as possible
- RAID (Redundant Array of Independent Disks) data storage for integrity
- Encryption of the data
- Onsite/Offsite daily backups that are kept for a minimum of seven (7) days
- Data Recovery using the backups.[12,13]

54. Access to Alexandria would be online via a unique URL web address. Librarians and patrons would be able access the library's catalogue, user accounts, and patron accounts, using portable devices, such as smart phones, iPads, and tablets, aside from laptops.

55. At the time of this Post-Implementation Benefits review, the MPL was in the process of upgrading the Alexandria software from version 5.5.2.1 to version 7; and to change over from managing a dedicated server (self-hosting), to cloud hosting. Payment was made to the COMPanion Corporation for an annual Non-School software licence for 15 users, free updates, and technical support. A signed Agreement was in place from October 2018, which outlined the parameters to be undertaken by the company and MPL's responsibilities to the company.

Stand-alone kiosk

56. Another MPL's future initiative will be the introduction of a stand-alone kiosk inside the library, for use by registered patrons and the general public. This would be an unmanned

[12] *https://www.goalexandria.com/features/hosting/*
[13] *Alexandria COMPANION HOSTED SOLUTIONS DESCRIPTION OF SERVICE*

computer that will give persons access, and the ability, to perform various functions in the MPL's Alexandria book catalogue.

Point of Sale

57. Payment by Point of Sale (POS) is another scheme that the MPL is seeking to implement. This venture will enable patrons to pay the MPL for their overdue charges, and the cost for replacement of damaged or lost books, using a credit or debit card. Receipts will be automatically generated by the Alexandria system and printed for the patron's proof of payment.

Innovative Mobile Library Services

58. It was communicated that a successful acquisition of a Book Mobile will result in MPL equipping the vehicle with a laptop, barcode reader, and wireless internet connection, to facilitate more efficient and speedy service.

Observations

59. **Cloud Hosting Service Agreement Term/Condition.** The *COMPanion Service Agreement* is a one-year Non-School licence subscription, for a maximum of 15 users. The majority of the provisos in the Agreement are standard and reasonable except for one condition that may be a potential issue. In provision ***4. Term and Termination***, of the signed Service Agreement, it is stated that MPL must maintain a current subscription as any delays in payment will result in:

(i) the suspension and/or termination of the Cloud hosting service

(ii) permanent deletion of MPL's backups and archives, within sixty (60) days, unless alternate arrangements are made with the company.[14]

60. As is the practice, COMPanion Corporation issues reminder emails in December before the Alexandria and MARC annual subscriptions expire in February; similarly for the Cloud hosting service. It is expected that the MPL will also comply with the annual payment of the impending Cloud hosting subscriptions.

61. **MPL's Unique URL (Uniform Resource Locator).** In the near future, patrons and the general public will be able to access Alexandria from a browser, by typing in a URL web address. For example:

- *http://abcdef.goalexandria.com*

[14] *Alexandria COMPANION HOSTED SOLUTIONS SERVICE AGREEMENT, 8 Oct, 2018*

CHAPTER 5 FINDINGS AND RECOMMENDATIONS

62. The Office of the Auditor General has determined that the Alexandria Library Management software, streamlined the former manual and automated library systems, in the absence of documented evidence of the projected benefits.

63. The Alexandria software was found to be a very reliable, user-friendly, web-based, software that performs tasks very speedily and efficiently with minimum use of resources. Checking of items in and out of the library is uncomplicated, via:

(i) pop-up windows with drop-down menus options
(ii) selecting buttons, check boxes, and menu options, using a mouse
(iii) typing in commands and codes in field boxes
(iv) barcoding, and
(v) barcode scanners/readers.

64. The software has the ability to run on various types of Operating Systems and platforms for desktop computers and portable devices. It also has the facility for successful exchange of information such as online payments and sending or receiving of emails. Furthermore, Alexandria has proper security and error detection measures in place that creates and stores system errors logs and audit trails of all user activities.[15]

65. However, there is the potential for risks to arise with MPL's future Information Technology (IT) initiatives, and there are no provisions in the *Central Library Act* for the use of the Internet and Cloud technology; specifically jurisdictional issues. Employing overseas service providers, especially in a Cloud computing environment, can involve risks associated with outsourcing to include foreign regulations on MPL's information storage and transfer that may limit what can be stored and how it can be processed; how MPL's data may be used by law enforcement of a foreign country without their knowledge; privacy and security standards may not always be commensurate; and disputes due to the different legal jurisdictions cannot be totally avoided.[16, 17]

66. IT systems are increasingly being utilised across the Montserrat Public Service, therefore, we are strongly recommending that the GoM, due to priority, fulfil the pledge of establishing and passing Information Communications Technology Bills and Regulations.[18] The MoE, with the support of the MPL, must liaise with the relevant stakeholders to ensure the approval and implementation of the appropriate laws and regulations in the *Central Library Act,* in order to address the aforementioned and other data security issues that could potentially arise with the Cloud hosting option and intended future initiatives.

[15] *https://www.goalexandria.com/faq/*
[16] *http://www.smart-biggar.ca/en/articles_detail.cfm?news_id=535*
[17] *WGITA IDI Handbook on IT Audit for Supreme Audit Institutions, February 2014*
[18] *http://www.mnialive.com/articles/2019-labour-day-address-by-montserrats-minister-of-labour-hon-paul-j-lewis*

CHAPTER 6 AUDIT CONCLUSION

67. From this Post-Implementation Benefits audit, we have determined that the Alexandria Library Management Software has streamlined the library services despite inadequate documentation regarding the initial procurement and implementation undertakings in 2006. Should the future initiatives be achieved, the long term outcomes would be advantageous for the Library, their patrons and the general public at large.

68. It is also important that MoE and MPL take the initiative to ensure that the appropriate ICT Laws and Regulations are instituted for the security and protection of patron and library data being stored and maintained on outsourced overseas servers.

CHAPTER 7 MANAGEMENT RESPONSE

The Montserrat Public Library has a responsibility to ensure that all the resources that are under its purview are stewarded with the utmost care. The Alexandria Software is one such asset. As put forward in the report, the installation of the software brought many advantages to the Library including improved productivity by staff and improved services to its customers.

Management agrees with the finding with regards to the procurement of the service from the overseas provider and the matters identified, to include:

- Storage and transfer of data
- Use of Data
- Data Privacy and Security
- Legal Disputes

These all relate to the establishment of an ICT Act for the island of Montserrat. It should be noted that the Ministry of Education, which the Public library reports to, is already putting plans in place for improvements to Information Systems within its subsidiaries.

The Government of Montserrat has made a start by establishing an Info-Communications Development Act. We are hoping that by 2021, when all stakeholders would have met, we will be able to have an Information Communications and Technology Act in place to address the issues that were raised in the report as well as other technological developments within the Government of Montserrat.

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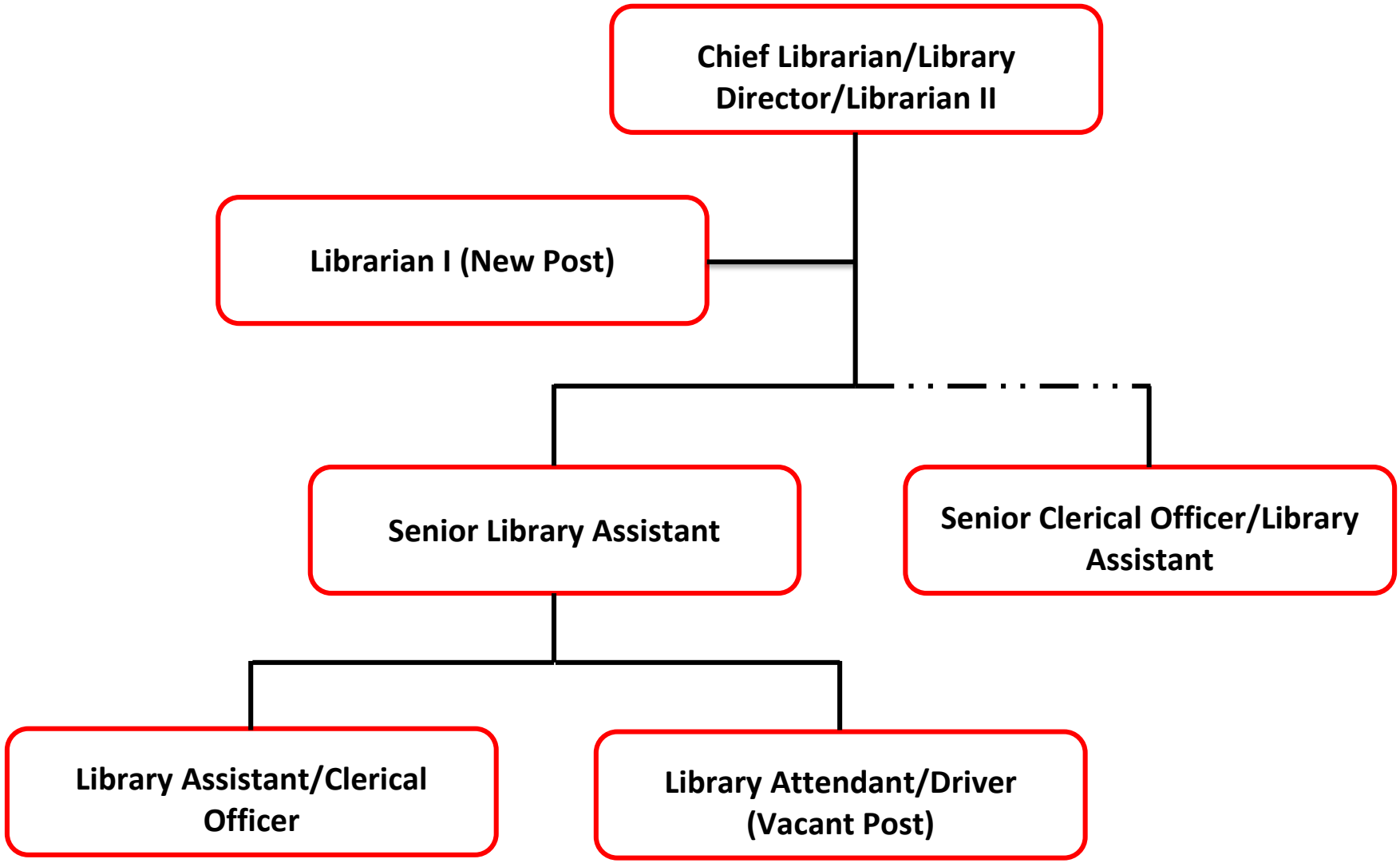
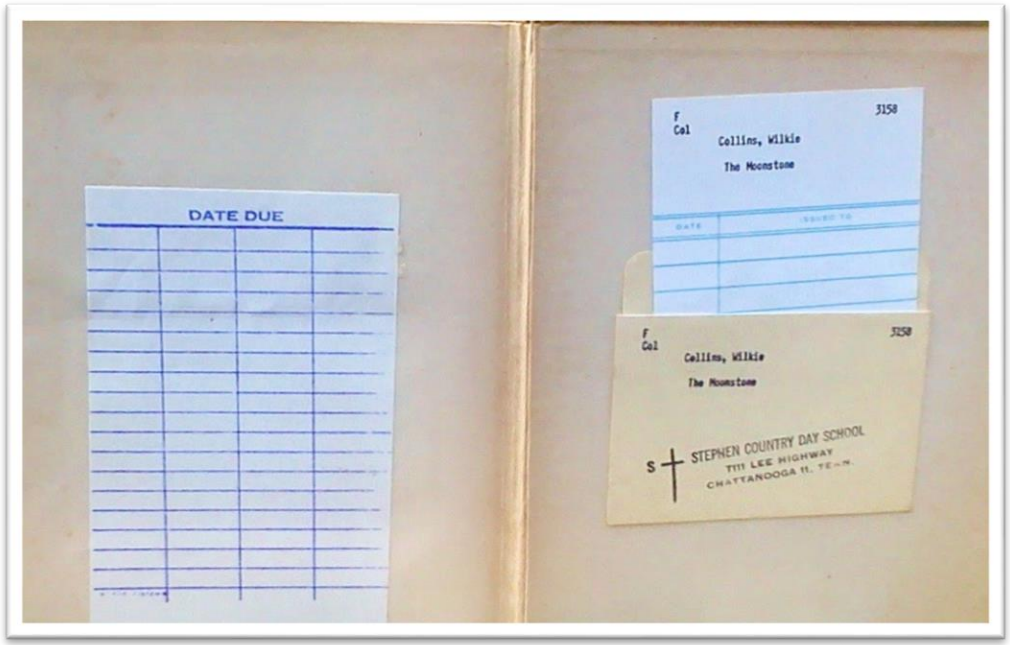
APPENDICES

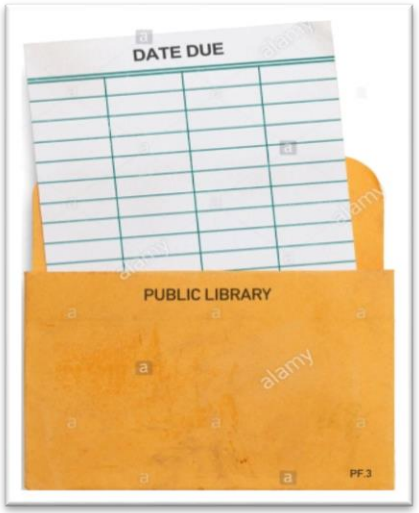
APPENDIX I - Montserrat Public Library Organisational Chart 2007



APPENDIX II - Examples of Browne Issue System



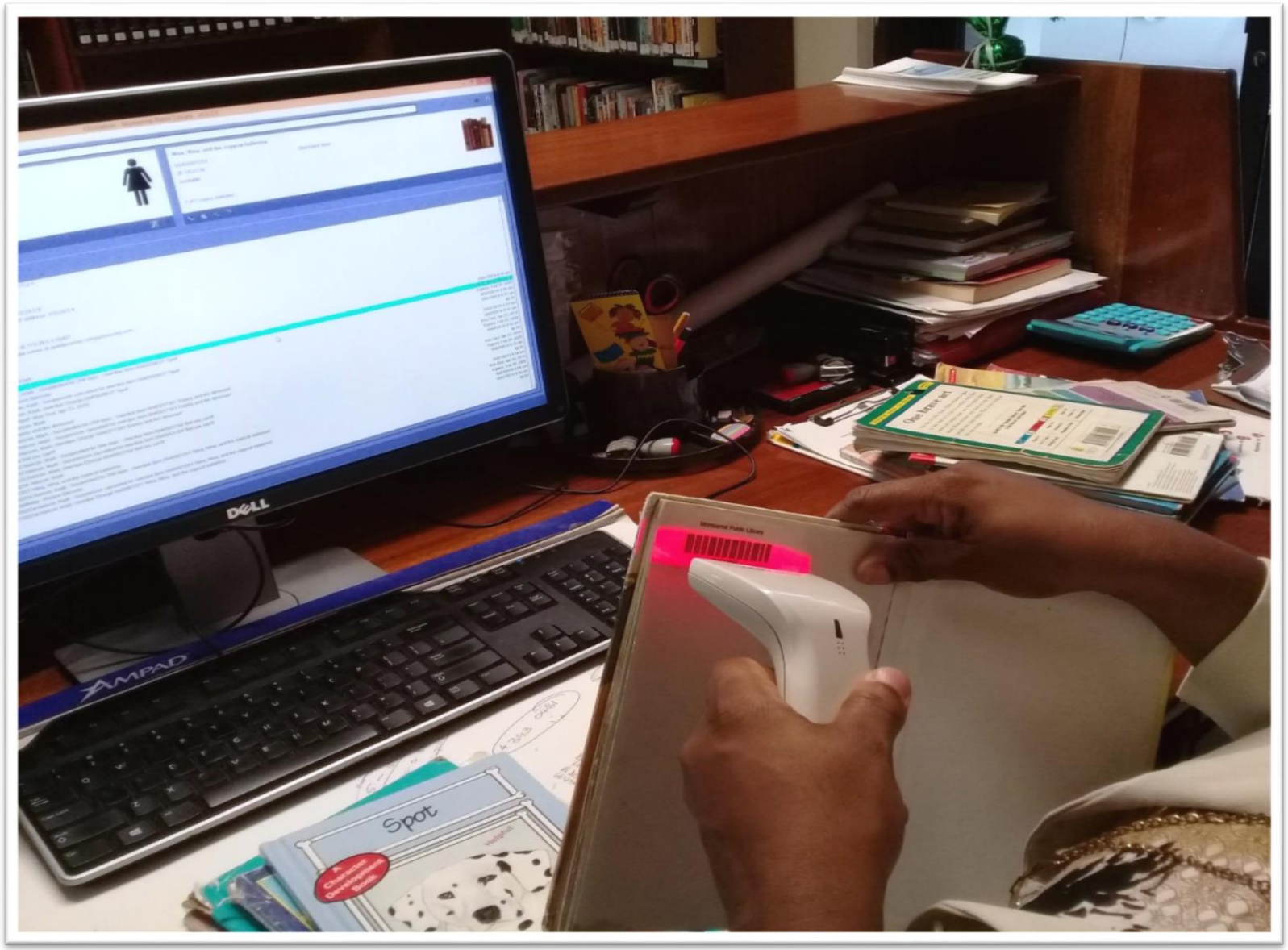
Library Book with Date Due Sheet and Book Card



Patron Pocket and Book Card

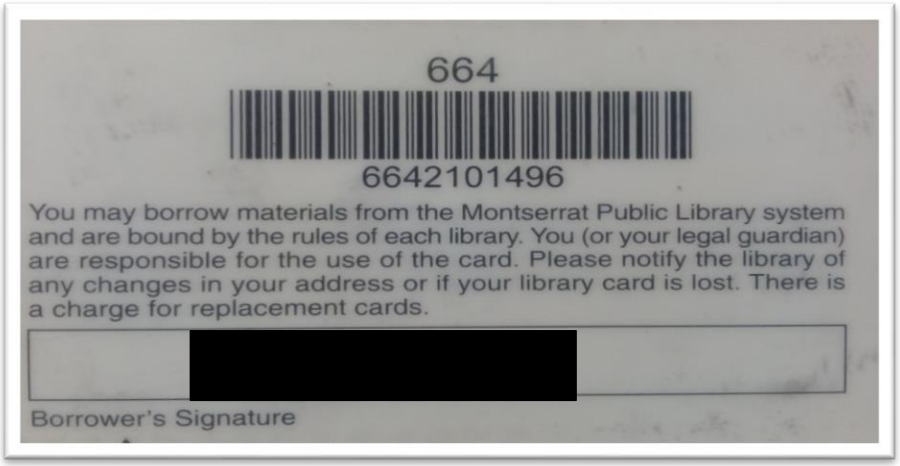
APPENDIX III - Browne Issue System Wooden Trays of Patrons' Pockets and Book Cards Filed by Month & Date of Return

APPENDIX IV - Alexandria Software, Barcode Scanner and Barcode Label

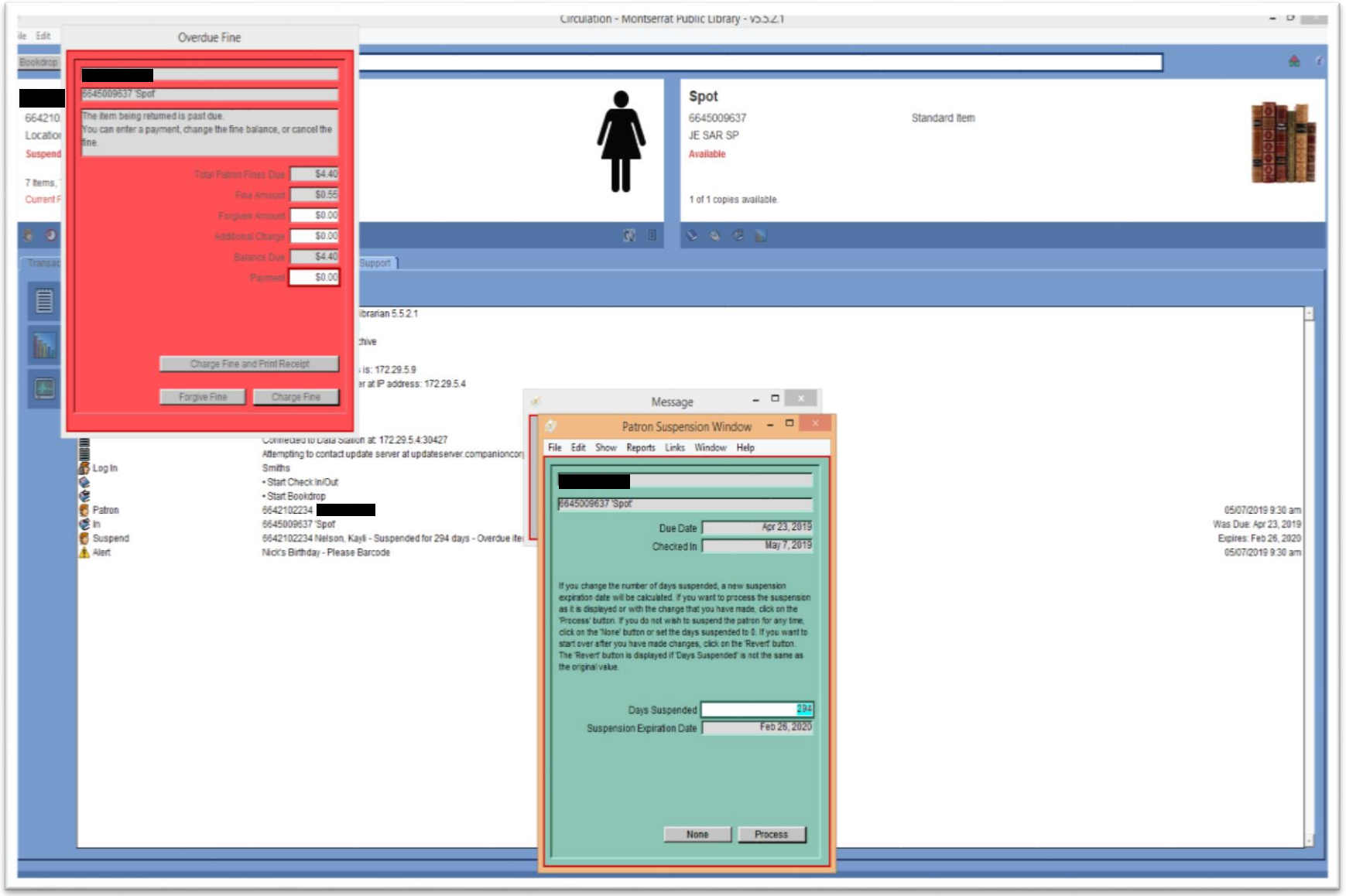


APPENDIX V - Book Drop Bin

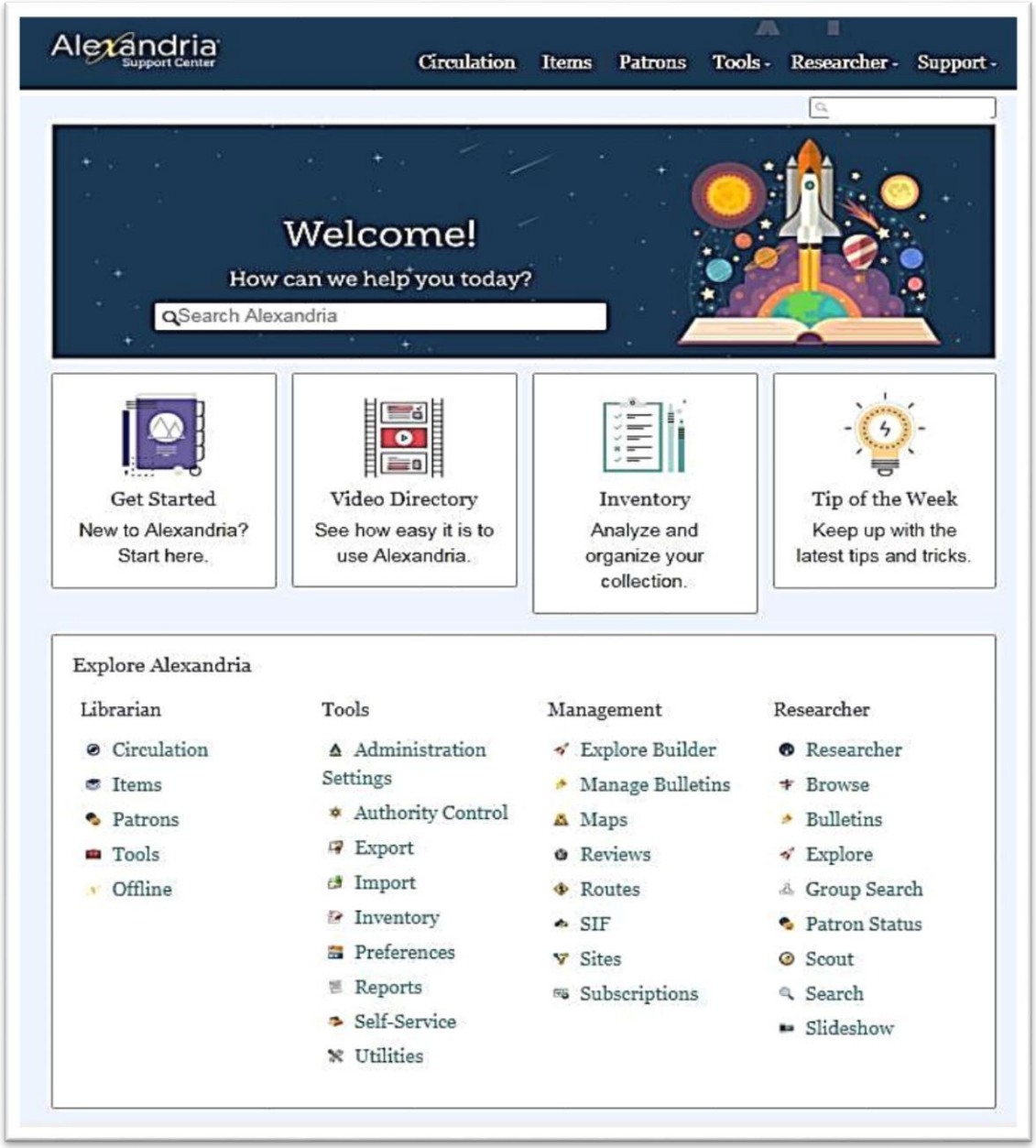
APPENDIX VI - Frontal & Back views of MPL Library Card



APPENDIX VII - Alexandria Patron Overdue Fine and Patron Suspension Window Menus



APPENDIX VIII - Alexandria Support Center Page



APPENDIX IX - Examples of Book Mobiles