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| SEDA LOGO New    **NORBAZ**  **DATA SOLUTIONS** |
| Project Closure Report |
| Development, Implementation, Maintenance and Support Seda Business Tools (L2022/2606) |
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| --- | --- |
| Project number | L2022/2606 |
| Project description | Development and Deployment of the Automated Business Diagnostic and Assessment Tools & Maintenance of Existing Tools |
| Project Owner | Small Enterprise Development Agency (SEDA) |
| Document name | Project Closure Report |
| Version number/Date | Version 01/27 February 2023 |
| Purpose | Project closure report |
| Source | Norbaz Data Solutions cc |

1. **Executive Summary**
   1. Project Overview

This report is the project closure report pertaining to the project: Development, Implementation, Maintenance and Support Seda Business Tools (L2022/2606), which was awarded by Seda (Small Enterprise Development Agency) to Norbaz Data Solutions CC.

The project was awarded on the **23 March 2022 for the twelve months to the 22nd of February 2023**

* 1. Key Achievements

Main key achieves of the project were:

* + Finalization of the development of the new diagnostic tools
  + Successful piloting of the new diagnostic tools
  + Successful launch of the new diagnostic tools
  + Development of the new Critical Planning Exercise tools
  + Development of the new Business Planning tool
  1. Lessons Learned

During the project, there are several lessons that we learnt, both positive and negative, all that contributed to the successes and shortcomings of the project.

* + Users need to play a critical role in the conceptualization and awareness of a new product to be developed.
  + Users need to be canvased so they have a common consensus on the accurate requirements and specifications of a product to be developed.
  + Full participation of all stakeholders is paramount to the success of a project.
  1. Recommendations

From experiences gained through working on the tools project, we recommend that:

* + Longer project duration be allocated to not just allow development and implementation, but more time to monitor performance in the production environment, and to offer adequate support till application reaches stability level.
  + after-implementation. This allows the developers to monitor the application after deployment, and offer

1. **Project Background**
   1. Project Objectives

The potential service provider will assist Seda with the development and deployment of the automated Business diagnostic and assessment tools, including maintenance and support of the implemented solution for a period of 12 months.

* 1. Project Scope

The scope of the project was to take over and continue with the implementation of the new Seda tools, develop new tools, and to maintain and support existing tools. system functionalities. The solution will be implemented, hosted and centralised at the Seda National Office, located in Pretoria. The solution must be accessed by all Seda provincial network offices and practitioners at these offices.

The specific requirements and expected deliverables are outlines below:

* 1. Requirements

|  |  |  |
| --- | --- | --- |
| **No.** | **Requirement** | **Description** |
|  | Business Analysis | Business and process analysis must be conducted and supporting document(s) provided |
|  | System Analysis | System analysis of the current system (s) must be conducted and supporting document(s) provided |
|  | System development   * Diagnostic and assessment tools portal * Basic assessment tools * Critical Planning Exercise Tool (CPE) * Assessment of Company Operations Tool (ACO) * Export Readiness Assessment Tool (ERAT) * Business Planning Tool (BP) | All Tools must be designed and developed as per Seda requirements.   * Diagnostic and assessment tools portal   The Tools website (Portal) will house all the Tools   * Basic assessment tools   All basic tools Seda uses to assess existing and potential clients. Eg. Checks business idea, personality traits and entrepreneurial capabilities   * Critical Planning Exercise Tool (CPE)   The tool used to assess the business financial health   * Assessment of Company Operations Tool (ACO)   The tool used to assess the efficiency of business operations   * Export Readiness Assessment Tool (ERAT)   The tools used to assess the business readiness to venture into the export market |
|  | Database management (design, development and administration) | The existing database must be maintained and administered together with the database for the new portal that will be deployed. |
|  | System integration with other existing Seda applications | The system must be capable of integrating with other Seda systems |
|  | System maintenance and support | The existing portal must be maintained until the new system is fully implemented and the new one that will be deployed will replace the existing system. |
|  | Reports design and development | All required reports from the system must de be provided |
|  | System Testing | The system must be thoroughly tested before it is released to Seda |
|  | System Training | Train the training must be provided and the supporting documents |

* 1. Expected Deliverables

The following deliverables were expected of the project:

|  |  |  |
| --- | --- | --- |
| ITEM | Delivery Item | Deliverable Address (URL) |
|  | Documented business requirements specification and functional specification |  |
|  | Documented system analysis report |  |
|  | Designed, developed and Implemented Tools |  |
|  | Diagnostic and assessment tools portal | <http://10.64.0.48:84> |
|  | **Basic Assessment Tools** | |
|  | * Pre-Startup Assessment tools | <http://10.64.0.48:84/pst_tool> |
|  | * Entrepreneurial Diagnostics tool | <http://10.64.0.48:84/edt_assess> |
|  | * Export Readiness Assessment Tool (ERAT) | <http://10.64.0.48:84/ERAT_Tool> |
|  | * Business Planning Tool (BPT) | <http://10.64.0.48:81> |
|  | **Advanced Assessment Tools** | |
|  | * Critical Planning Exercise Tool (CPE) | <http://10.64.0.84:85> |
|  | * Assessment of Company Operations Tool (ACO) | <http://10.64.0.48:84/ACO_tool> |
|  | **System support, maintenance, and enhancements** | |
|  | * Documented Monthly reports |  |
|  | * Maintenance and Support plan |  |
|  | **Integrated System** | |
|  | * System integration analysis report |  |
|  | * System integration report |  |
|  | **Training** | |
|  | * User and admin training |  |
|  | * Training guide |  |
|  | * User guide |  |
|  | * Admin guide |  |
|  | **Testing** | |
|  | * Test cases and testing report |  |
|  | Project close-off report |  |

* 1. Stakeholders

Stakeholders are individuals or groups who have a vested interest or are affected by the project's outcomes. These have varying degrees of influence and involvement throughout the project lifecycle.

In this project, the identified stakeholders are indicated in the table below:

|  |  |  |
| --- | --- | --- |
| **No.** | **Name/Group** | **Role/s** |
| 1. | Project sponsor- Seda | Seda is the sole sponsors of the project |
| 2. | Seda project team | Seda’s project team that we worked with |
| 3. | Seda tool users | These are the tools’ end-users, hence responsible for final functional testing, QA & piloting approvals |
| 4. | Seda Learning Academy | Learning Academy responsible for skills transfer on tools’ usage |
| 5. | Norbaz project manager/s | Zabron Muyambo |
| 5. | Norbaz Development team | * + Lawrence Mucheka (Developer)   + Zabron Muyambo (Developer)   + Thato S. Magana (UX Designer/Engineer)   + Mpho Moiloa - Documentor |

1. **Project Deliverables**
   1. Summary of Deliverables

Table below lists expected deliverables and summarized accomplishments

|  |  |  |
| --- | --- | --- |
| ITEM | Delivery Item | Deliverable Address (URL) |
|  | Documented business requirements specification and functional specification |  |
|  | Documented system analysis report |  |
|  | Designed, developed and Implemented Tools |  |
|  | Diagnostic and assessment tools portal | <http://10.64.0.48:84> |
|  | **Basic Assessment Tools** | |
|  | * Pre-Startup Assessment tools | <http://10.64.0.48:84/pst_tool> |
|  | * Entrepreneurial Diagnostics tool | <http://10.64.0.48:84/edt_assess> |
|  | * Export Readiness Assessment Tool (ERAT) | <http://10.64.0.48:84/ERAT_Tool> |
|  | * Business Planning Tool (BPT) | <http://10.64.0.48:81> |
|  | **Advanced Assessment Tools** | |
|  | * Critical Planning Exercise Tool (CPE) | <http://10.64.0.84:85> |
|  | * Assessment of Company Operations Tool (ACO) | <http://10.64.0.48:84/ACO_tool> |
|  | **System support, maintenance, and enhancements** | |
|  | * Documented Monthly reports |  |
|  | * Maintenance and Support plan |  |
|  | **Integrated System** | |
|  | * System integration analysis report |  |
|  | * System integration report |  |
|  | **Training** | |
|  | * User and admin training |  |
|  | * Training guide |  |
|  | * User guide |  |
|  | * Admin guide |  |
|  | **Testing** | |
|  | * Test cases and testing report |  |
|  | Project close-off report |  |

* 1. Accomplishments and Milestones

1. **Project Timeline**
   1. Initial Timeline vs. Actual Timeline

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ID | Task | Month 1 - 2 | Month 3 -4 | Month 5 - 6 | Month 7 - 8 | Month 9 - 12 |
| 1. | PROJECT PLANNING |  |  |  |  |  |
| 2. | REQUIREMENTS ANALYSIS |  |  |  |  |  |
| 3. | SYSTEM DESIGN |  |  |  |  |  |
| 4. | IMPLEMENTATION/  DEVELOPMENT |  |  |  |  |  |
| 5. | SYSTEM TESTING/  INTEGRATION |  |  |  |  |  |
| 6. | MAINTENANCE & SUPPORT |  |  |  |  |  |
| 7. | PROJECT HAND-OVER/ SIGN-OFF |  |  |  |  |  |

|  |  |
| --- | --- |
| **Key** | |
|  | Initial proposed milestones |
|  | Actual milestones |

* 1. Critical Path Analysis
  2. Schedule Variance Analysis

1. **Budget and Resources**
   1. Project Budget Summary

The chart below indicates the summary budget allocation for the project.

|  |  |  |
| --- | --- | --- |
| **ITEM** | **ITEM DESCRIPTION** | **AMOUNT** |
| 1. | Project Management, Planning & Initiation | R17,240 |
| 2. | Requirements Analysis | R72,520 |
| 3. | System & Database Design & Integration | R196,150 |
| 4. | Tools’ Development | R486,700 |
| 5. | Tools’ Testing & Integration | R73,690 |
| 6. | Tools Maintenance and Support | R99,360 |
| 7. | Project Hand-over/Sign Off | R41,120 |
| TOTAL: | | R987,020 |

* 1. Resource Allocation

This project was allocated three (3) main team members. Detailed allocation of these resources is indicated in the table below, together with budget breakdowns and durations spent on each item.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Budget items | **Budget** | **Budget** | **Lead Developer** | **Developer/ Engineer** | **Developer/ Documenter** |
| **Hours** | **Fees** |
|  |  | **R450/Hour** | **R420/Hour** | **R415/Hour** |
| 1. **PROJECT PLANNING** |  |  |  |  |  |
| * 1. *Project Chatter* | *8* | *R3,360.00* | *8* |  |  |
| * 1. *Planning & Management* | *24* | *R10,280.00* | *8* | *8* | *8* |
| * 1. *Logistics & Infrastructure* | *8* | *R3,600.00* | *8* |  |  |
| 1. **REQUIREMENTS ANALYSIS** |  |  |  |  |  |
| * 1. *Business Analysis* | *100* | *R43,000.00* | *40* | *20* | *40* |
| * 1. *Requirements Analysis* | *24* | *R10,440.00* | *12* | *12* |  |
| * 1. *Infrastructure Analysis* | *20* | *R8,640.00* | *8* | *12* |  |
| * 1. *Solution Identification & Documentation* | *24* | *R10,440.00* | *12* | *12* |  |
| 1. **SYSTEM DESIGN** |  |  |  |  |  |
| * 1. *System Processes Designs* | *100* | *R43,050.00* | *40* | *30* | *30* |
| * 1. *Interfaces & Graphic Designs* | *100* | *R42,200.00* | *20* |  | *80* |
| * 1. *Databases & APIs Designs* | *68* | *R29,720.00* | *40* | *20* | *8* |
| * 1. *Program Designs* | *60* | *R26,300.00* | *40* |  | *20* |
| * 1. *Reports Designs* | *80* | *R34,000.00* | *20* | *20* | *40* |
| * 1. *Virtualization/Container Designs* | *48* | *R20,880.00* | *24* | *24* |  |
| 1. **IMPLEMENTATION** |  |  |  |  |  |
| * 1. *Program Development/coding* | *400* | *R172,300.00* | *160* | *140* | *100* |
| * 1. *Database & APIs Development* | *300* | *R129,200.00* | *120* | *100* | *80* |
| * 1. *Interfaces/Graphics Development* | *120* | *R51,600.00* | *40* | *80* |  |
| * 1. *Reports Development* | *60* | *R25,700.00* | *20* | *20* | *20* |
| * 1. *CRM/Other Tools Integration* | *140* | *R60,500.00* | *60* | *60* | *20* |
| * 1. *Documentation* | *70* | *R29,400.00* | *10* |  | *60* |
| * 1. *Training & Staff Development* | *40* | *R18,000.00* | *40* |  |  |
| 1. **TESTING & INTEGRATION** |  |  |  |  |  |
| * 1. *Unit Testing & Test Cases* | *40* | *R17,350.00* | *20* | *10* | *10* |
| * 1. *System & Integration Testing* | *32* | *R14,040.00* | *20* | *12* |  |
| * 1. *Data Migration/Data Take-On* | *20* | *R8,640.00* | *8* | *12* |  |
| * 1. *Retire & Archive current Facilities* | *78* | *R33,660.00* | *30* | *48* |  |
| 1. **MAINTENANCE & SUPPORT** |  |  |  |  |  |
| * 1. *Current Tools Maintenance & Support* | *104* | *R44,400.00* | *24* | *80* |  |
| * 1. *New Tools Monitoring & Evaluation* | *104* | *R46,080.00* | *80* | *24* |  |
| * 1. *New Tools Post Implementation Support* | *20* | *R8,880.00* | *16* | *4* |  |
| 1. **HAND-OVER & SIGN-OFF** |  |  |  |  |  |
| *7.1 Tools Hand-Over (Admins/IT)* | *72* | *R30,840.00* | *24* | *24* | *24* |
| *7.2 Project Sign-Off* | *24* | *R10,280.00* | *8* | *8* | *8* |
| Totals | 2,288.00 | R987,020.00 | 960 | 780 | 548 |

* 1. Budget Variance Analysis

As indicated in the table below, there was no variances in the budgeted resources.

|  |  |  |  |
| --- | --- | --- | --- |
| ITEM | DESRIPTION | DURATION(HRs) | AMOUNT |
| 1. | Original proposed budget | 2,288 | R985,680.00.00 |
| 2. | 01-3636/1-SDA - 23 Mar 2022 | 617 | - R246,755.00 |
| 3. | 050522/2-SDA - 05 May 2022 | 624 | - R249,524.00 |
| 4 | 01-3636/3-SDA - 05 Aug 2022 | 378 | - R 151,325.00 |
| 5 | 01-3636-4/SDA - 05 Nov 2022 | 448 | - R 179,200.00 |
| 6. | 01-3636-5/SDA - 06 Feb 2023 | 401 | - R 160,216.00 |
| VARIANCE | | | R00.00 |

,Quality and Performance

* 1. Quality Assurance Activities
  2. Performance Metrics
  3. Quality Control Measures

1. **Risk Management**
   1. Identified Risks

* Scope Creep

The project requirements continuously expand or change throughout the development process.

This was one of the biggest challenges that we faced in the project and was experienced during system testing and piloting. Users from different branches brought different requirements, some of which needed urgent incorporation into the tools.

In some cases, users even presented completely different versions of the tools that required an almost complete over-haul of the tools that were already being rolled out. This is mainly the case of the ERAT and the ACO.

This resulted in delayed rollouts while we attempted to incorporate the requested changes so as to increase user satisfaction of the tools.

* Insufficient Testing and Quality Assurance:

As a result of scope-creep mentioned above, there were a lot of modifications, some of which affected the core tools website. Naturally, this would require more time to do thorough regression tests to ensure seamless integration with existing modules.

In some cases, we could not accomplish adequate testing and quality assurance, resulting in undetected bugs, performance issues, and poor user experience, affecting the software's reliability and usability.

* Lack of and/or Delayed User-participation.

This applied when we entered the piloting phase of the developed tools. Many users expressed pre-occupation with their routine tasks in response to local reporting deadlines.

This resulted in scheduled testing/piloting sessions being cancelled and/or postponement, thereby affecting the proposed scheduling of milestones.

* Bureaucratic Processes

Seda is a large government department, hence is susceptible to sometimes lengthy bureaucratic processes that may affect the attainment of a task.

There were several incidents where these happened, especially where we required and requested the assistance of Seda’s IT infrastructure department.

* 1. Risk Mitigation Strategies
* Scope Creep
* Involve more users to submit inputs before embarking on a requested modification to the tools.
* Clearly define project requirements and obtain stakeholder agreement upfront.
* Implement a formal change management process to evaluate and approve scope changes.
* Insufficient Testing and Quality Assurance:
* Develop a comprehensive testing strategy that includes unit testing, integration testing, system testing, and user acceptance testing.
* Use automated testing tools and frameworks to improve testing efficiency and coverage.
* Conduct rigorous quality assurance checks at each development stage to identify and resolve issues early.
* Lack of and/or Delayed User-participation
* Establish clear channels of communication and regular meetings with stakeholders to maintain engagement and gather feedback.
* Conduct regular demos or prototypes to involve stakeholders in the development process and obtain their input.
* Encourage stakeholders to provide continuous feedback and address any concerns or requirements promptly.
* Bureaucratic Processes
* Request assistance early to ensure not much time is further lost while waiting for processes to be executed.
* Having work-around solutions wherever possible to avoid unnecessary bureaucratic engagements.
  1. Risk Assessment and Review

1. **Stakeholder Engagement**
   1. Stakeholder Communication

There was robust communication amongst all stakeholders. We were able to relay all requirements for assistance to the Seda project team while we also took note of their input, concerns, and suggestions.

* 1. Stakeholder Feedback

1. **Lessons Learned**
   1. Challenges and Issues Encountered

* **User resistance**

We observed a general feeling of user-resistance during tools’ User-Acceptance testing (UAT) and piloting. There could have been due to:

* Natural user resistance to change from old to new processes.
* Fear of the unknown, from suspicion of being scrutinized through the new system, more auditing, and workloads.
* **Scope creep**

As mentioned in earlier sections of this report, scope creep remained a main challenge to the project.

* **IT infrastructure challenges**

The Seda IT infrastructure is currently accessed through Virtual platforms (VPN). On several occasions, we experienced challenges using the VPN as it was either completely offline or somehow slow. We also received user queries that related to inaccessibility of the VPN.

* **Electricity Load-shedding**

The electricity loadshedding schedules being rolled out nationally affected the project significantly, especially during the later months of the project. Most of the development requires us to always connect to the Seda CRM database that is hosted on the Seda infrastructure. If there is no electricity, our gadgets run out of power hence, we are unable to connect to the Seda services since the internet connections are also affected.

* 1. Solutions and Best Practices
* **Consultative requirements**

Wider and more thorough user consultations and engagements are needed to draw up requirements that have a near consensus from all Seda branches.

* **User awareness**

There was quite substantial awareness to the tools. However, users still did not offer a lot of support through forwarding their requirements, especially at branch level. We therefore concentrated on using tool templates supplied by the steering team, only for the users to forward suggestions during testing and piloting processes.

* **Adequate project durations**

All else equal and available, the project had reasonably ample time for the development and rolling out of the tools into production. However, given the fact that the tools have a potential audience of more than 100 users; there was supposed to be adequate time allocated for post-implementation support, to allow thorough testing, monitoring and fine-tuning so the tools get to stabilization levels. At least 6 months would have sufficed, but 12 months would have been most ideal.

* 1. Areas for Improvement
* **Stakeholder Engagement and Satisfaction:**

Foster stronger relationships with users by actively involving them earlier in the project and regularly seeking their feedback.

* **Training on general IT as an inevitable means of working**

Users must be encouraged to continuously improve their understanding and appreciation of standard IT systems as a way of improving their routine deliverables. Some users were generally repulsive and quite resistant to the introduction of the tools, as a way of standardizing and centralizing the assessment process.

1. **Recommendations**
   1. Future Opportunities

* **Further Consolidation of the tools**

Most tools require similar basic data, for example company background and general information. This means basic tools’ data can be centralized so it is captured once and applied to the rest of the assessments in different tools.

In the current scenario, the emphasis was on the integration of the tools data and CRM data, but the tools data is still disparate.

* 1. Process Enhancements
* **Standards enforcements**

Seda, as an organization, must enforce standards in terms of the tools’ usage. While the standards documents exist, we noticed many users are reluctant to abide by them on using the tools, preferring to use their own, rudimentary methods of assessments.

* **Host tools in the cloud environment**

Accessing tools and development facilities presents a bottleneck that can be removed with modern day cloud PaaS, SaaS and IaaS.

This will remove the sometimes delays experienced while seeking assistance from the IT infrastructure custodians and third-party consultants, while it also makes it more convenient and faster to do so.

Regularly communicate project progress, milestones, and any changes that may impact stakeholders.

Prioritize customer satisfaction and ensure the software meets their needs and expectations.

* 1. Project Closure Steps

1. Project Documentation

All documentation for this project, including al source code is saved on a GitHub repository created for this specific project. The URL of the GitHub repository is stated below:

<https://github.com/zabronm/SedaDocs-2022>

* 1. Final Project Reports
  2. Technical Documentation
  3. User Manuals or Guides

1. **Acknowledgments**

The following team members played vital roles in the course of the project:

|  |  |  |
| --- | --- | --- |
| ID | PERSON/GROUP | ROLE/S |
| 1. | Mapheello Kele | Head of Seda steering and management team and Business Analysis |
| 2. | Hilda Kotola | Project management and Administration |
| 3. | Learning Academy   * Thembisile Sithole * Nokwanda Khoza * Kwanele Ruth Mpanza | Seda’s Learning Academy for the roles in supplying user requirements, feedback, testing and quality assurance |
| 4. | Seda Users and Stakeholders | For their roles in testing, piloting and providing feedback to refine the requirements of the tools |
| 5. | Norbaz Data Solutions team members   * Lawrence Mucheka * Thato Samuel Magana * Mphonyana Moiloa | For their different roles in ensuring the realization of the deliverables of the project from Requirements Analysis, development and implementation |