

The BEACON Project Business Case

Executive Summary

To align with our strategic objectives of expanding coverage, enhancing compliance, and accelerating member benefits payout, it has become evident that our current data infrastructure is inadequate to effectively meet these goals. Therefore, it is crucial for us to invest in a new data infrastructure solution that can propel us forward and bridge this gap.

This business case thoroughly examines the cost-benefit ratio of implementing a comprehensive and state-of-the-art Data Lake and Data Analytics Environment at our organization. Our analysis encompasses projected benefits, anticipated cost savings, potential risks, and corresponding risk mitigation strategies.

Over a five-year period, this solution would require a financial commitment with a Net Present Value (NPV) of UGX 1,204,411,930 and an Internal Rate of Return (IRR) of 58%. These figures indicate that the project is highly viable and warrants the investment. Detailed calculations supporting these values can be found in the appendix.

Current Environment

Initially, our objective was to establish a data warehouse centered around an Oracle Database Appliance (ODA) and Oracle Database Integrator (ODI) to support our operational systems at that time. The ODA we acquired had a usable storage capacity of 20TB, with 8 active cores out of a total of 32 available, and came with 4 licenses. However, as we adopted a new Pension Administration System (PAS) for the Fund, introduced social media analytics, incorporated JDE functionalities, and allowed voluntary membership, our data volume experienced significant growth. This growth has presented challenges to the capacity and capabilities of our originally intended data warehouse solution.

As a result, we promptly repurposed the acquired tools to meet the demands of the PAS and the new JDE functionalities. Currently, it is being utilized for PAS and new JDE developments, User Acceptance Test (UAT) environments, as well as managing the data flows, particularly those related to payroll, compliance, and ADA.

Anticipated Benefits

The solution would align seamlessly with our strategic objectives, offering tangible and strategic benefits over a five-year projection. These include:

Benefit	Deliverable	Approach	Expected Value
Increased Compliance Levels	AI-enabled audits, Automated compliance checks, Consolidation and analysis of contribution data	Increase annual audits from 1,200 to 2,500. Automated identification of non-compliant employers. Consolidation and analysis of contribution data from various sources.	UGX 13.1 Bn
Increased Member Coverage	Precise customer segmentation, Tailored product recommendations, Dormant member prediction, AI-enabled prospective member profiling	Targeted Outreach Campaigns. Identification of Untapped Segments. Customized Membership Plans. Improved Member Engagement.	Reduce dormancy rate from 16% to 10% – 65K members. Grow active membership from 690K to 1.24M.
Reduced Benefits Turn Around Time (TAT)	Streamlined member benefits processing	Streamlining data workflows by automating administrative processes. Enabling machine learning aided Data Cleaning. Shifting of verification process from backend to front end through KYC auto-validation.	Improve Age Benefits related claims TAT from 7.1 days to 1 day
Reduced Operational Costs	Optimized IT resource usage	Reduce VM Licensing Fees, Compute Storage, and Support and Maintenance costs by 20%. These resources will be re-allocated to other critical areas.	UGX 2.88 Bn
Reduction in Suspense	Enhanced data discrepancy identification	Leveraging pattern recognition algorithms, ML, and AI capabilities to detect patterns of misalignment within data from different sources. This enables proactive identification of data discrepancies and potential suspense situations, allowing for timely resolution and prevention.	Clear 50% of the existing Suspense
Improved Data Quality	Comprehensive data integration and reconciliation	Centralized data repository enables the integration of data from multiple sources into a unified platform, this will significantly enhance the process of auto-reconciliation across various data breakpoints.	Improve data quality rate from 78.6% to 99.5%
Automated Cybersecurity Alerts	Efficient cybersecurity data processing and automated alert generation	Ingest, process, and analyse cybersecurity data more efficiently, leading to the generation of automated alerts that help detect and respond to security incidents in a timely manner. Achieved through: Correlation and Contextualization, Integration with Security Tools, Real-time Data Processing, Advanced analytics on cybersecurity data	Reduce cybersecurity incident response time by 50% and prevent potential threats

Risks and Mitigation Strategies

Potential risks have been meticulously examined with robust mitigation strategies in place to navigate these challenges effectively.

Risk Category	Likelihood	Severity	Mitigation Strategy
Data Security Breach	High	Critical	Implement advanced security protocols, including encryption and access controls. Regularly conduct comprehensive security audits to identify and rectify potential vulnerabilities.
Data Governance and Quality Issues	Medium	Moderate	Establish and enforce a stringent data governance structure that includes data quality standards, effective metadata management, and clearly defined data stewardship roles.
Scalability Challenges	Medium	High	Develop the system with future scalability in mind, using scalable infrastructure and employing efficient data partitioning techniques. Continuously monitor system performance and optimize as necessary.
Vendor Performance Risks	Medium	Moderate	Rigorously assess vendor track record and capabilities before finalizing contracts. Set clear performance metrics and consistently monitor vendor deliverables against these benchmarks.
Stakeholder Buy-In Concerns	Medium	Moderate	Involve stakeholders early in the process and maintain open lines of communication. Regularly address concerns, highlight project benefits, and ensure stakeholder commitment through active engagement.
Integration and Compatibility Issues	High	Moderate	Develop and execute a comprehensive integration strategy, including extensive testing and validation. Ensure standard protocols are implemented to preserve compatibility.

Conclusion and Recommendation

In summary, it is recommended to proceed with implementing a new data infrastructure solution to address the limitations of the current system. By adopting a robust and future-ready data infrastructure, we can achieve various benefits, including cost savings, improved compliance, increased member coverage, faster turnaround times, enhanced data quality, and strengthened cybersecurity. This transformation will position us as industry leaders, allowing us to thrive in the ever-changing digital landscape.

Appendix



Financial Projections

Financial projections over 5 years:

Assumptions	
Active Members	690,000
Dormant Members	855,000
Average annual Contribution per member	478,261
Annual Interest on contributions	10%
% No. of companies that pay after Audit	72%
Average amount in arrears per company	40,417,210
Rate of reduction in compliance recoveries	25%
Audits done per year	2,500
Discount Rate	10%

No.	Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
1	New Members (Member coverage)		90,100	99,110	109,021	119,923	131,915
	Annual Contributions from new members		43,091,304,348	47,400,434,783	52,140,478,261	57,354,526,087	63,089,978,696
	Interest on contributions for New members		0	4,093,673,913	4,503,041,304	4,953,345,435	5,448,679,978
2	Dormant growth rate		16%	15%	14%	13%	12%
	Cumulative Dormant Members		991,800	1,140,570	1,300,250	1,469,282	1,645,596
	Dormant to active conversions		9,918	11,406	13,002	14,693	16,456
	Contributions from Dormant Conversions		4,743,391,304	5,454,900,000	6,218,586,000	7,027,002,180	7,870,242,442
	Interest on Dormant Conversions		-	450,622,174	518,215,500	590,765,670	667,565,207
3	Compliance Audits Done		2,500	2,500	2,500	2,500	2,500
	Arrears, fines and penalties		54,563,233,377	40,922,425,033	30,691,818,774	23,018,864,081	17,264,148,061
	Interest on Arrears		-	5,183,507,171	3,887,630,378	2,915,722,784	2,186,792,088
4	Current Costs		1,442,600,000	1,442,600,000	1,442,600,000	1,442,600,000	1,442,600,000
5	Cost Incurred (solution cost)	8,735,859,940	1,234,021,313	1,234,021,313	1,234,021,313	1,234,021,313	1,234,021,313
Total Net Revenue		-8,735,859,940	208,578,687	9,936,381,945	9,117,465,870	8,668,412,576	8,511,615,960

Net Present Value	1,204,411,930
IRR	58%