

**Proposal**

To

| logo |

for

| Project Title |



**Executive Summary**

**Executive Summary: Revolutionizing Affin Moneybrokers' REPO Trading with Nitor Infotech**

Affin Moneybrokers operates in a dynamic and highly regulated Malaysian financial market. The current limitations of your REPO/Reverse REPO transaction processes—manual handling, fragmented systems, and potential compliance gaps—pose significant risks and inhibit operational efficiency, preventing you from capitalizing on market opportunities and achieving optimal profitability. In short, your current system is hindering your growth and potentially exposing you to compliance risks in the increasingly complex Malaysian financial landscape. This necessitates an immediate and decisive modernization strategy.

This proposal outlines how Nitor Infotech will deliver a cutting-edge, automated REPO Trading Platform specifically designed to address your critical needs. Our solution is not merely an upgrade; it's a complete transformation that will streamline operations, enhance compliance, and significantly improve your bottom line.

**Why Nitor Infotech?**

Nitor Infotech isn't just another technology provider; we are your strategic partner in achieving financial excellence. We possess a deep understanding of the intricacies of the Malaysian financial market, including the GMRA regulations, and have a proven track record of delivering robust, scalable, and secure solutions for leading financial institutions. Our team comprises seasoned professionals with extensive experience in developing high-performance trading platforms, integrating market data feeds (including Bloomberg), and implementing robust collateral management systems. We have successfully implemented similar solutions for numerous clients operating in highly regulated environments, consistently exceeding expectations.

Our proposed platform will:

* Automate REPO/Reverse REPO transactions: Eliminating manual processes, reducing operational errors, and freeing up valuable staff time. This will result in immediate cost savings and improved efficiency.
* Ensure real-time GMRA compliance monitoring: Providing peace of mind and minimizing the risk of costly penalties. Our solution will proactively identify and alert you to any potential compliance issues.
* Optimize collateral management: Streamlining the process, reducing risk, and improving overall efficiency in managing your assets.
* Seamlessly integrate with existing systems and market data: Ensuring a smooth transition and minimizing disruption to your daily operations. This integration will leverage existing infrastructure investments, optimizing the ROI on the platform itself.
* Provide robust security, reliability, and scalability: Ensuring your data is safe, your operations remain uninterrupted, and your platform is capable of handling future growth and the introduction of new instruments.

**Project Details:**

* Project Title: REPO Trading Platform
* Project Timeline: 4 Months
* Project Amount: $20,000 USD

This investment of $20,000 USD over four months represents a fraction of the long-term benefits you will realize. The enhanced efficiency, reduced operational costs, mitigated compliance risks, and improved market responsiveness will generate a significant return on investment. Consider the potential savings from reduced operational errors, minimized compliance penalties, and enhanced trading capabilities. The cost savings alone will quickly offset the initial investment, leaving you with substantial long-term gains.

**The Nitor Infotech Advantage:**

Our success is built on a foundation of agile methodologies, rigorous testing, and unwavering commitment to client satisfaction. We don't just deliver software; we build lasting partnerships based on trust and mutual success. Our dedicated project management team will work closely with you throughout the entire process, ensuring seamless communication and timely delivery. Furthermore, our post-implementation support will ensure your team is fully equipped to manage and optimize the new platform, maximizing its value over its lifespan.

**Call to Action:**

Affin Moneybrokers stands at a crossroads. You can continue to operate with outdated systems, facing increasing risks and inefficiencies, or you can embrace a transformative solution that will propel your organization to new heights. Nitor Infotech offers the ONLY solution that combines deep domain expertise, technological prowess, and a commitment to client success. We urge you to schedule a meeting to discuss this proposal further and explore how we can help you achieve your financial objectives. Let's work together to transform your REPO trading operations and unlock significant competitive advantages. Contact us today to schedule this pivotal discussion.

**Our Understanding**

**Our Understanding**

**1. About Affin Moneybrokers's Project**

* Inferred Current State and Challenges: Affin Moneybrokers likely operates a manual or partially automated REPO trading system, facing challenges in efficiency, compliance, and scalability. Manual processes are prone to errors, increasing operational risk and hindering timely transaction execution. Real-time compliance monitoring against GMRA regulations is likely lacking, potentially leading to penalties and reputational damage. Collateral management is probably inefficient, impacting operational costs and liquidity. Integration with external systems and market data providers (e.g., Bloomberg) might be fragmented, leading to data silos and delays. The existing infrastructure may struggle to handle increasing transaction volumes and the introduction of new instruments.
* Project Objectives and Success Criteria: The primary objective is to implement a fully automated, compliant, and scalable REPO trading platform. Success will be measured by:  
    
  Reduced transaction processing time: A significant reduction (e.g., 50%) in the time taken to execute REPO and reverse REPO transactions.  
  Improved compliance: Zero compliance breaches related to GMRA regulations within the first six months of operation.  
  Enhanced operational efficiency: Measurable reduction in operational costs associated with manual processes.  
  Increased scalability: The platform's ability to handle a 20% increase in transaction volume within the first year.  
  Improved data integration: Seamless integration with existing systems and market data feeds (Bloomberg).  
  User acceptance: High user satisfaction ratings among traders and operational staff.
* Reduced transaction processing time: A significant reduction (e.g., 50%) in the time taken to execute REPO and reverse REPO transactions.
* Improved compliance: Zero compliance breaches related to GMRA regulations within the first six months of operation.
* Enhanced operational efficiency: Measurable reduction in operational costs associated with manual processes.
* Increased scalability: The platform's ability to handle a 20% increase in transaction volume within the first year.
* Improved data integration: Seamless integration with existing systems and market data feeds (Bloomberg).
* User acceptance: High user satisfaction ratings among traders and operational staff.
* Proposed Technical Approach: We propose a cloud-based, microservices architecture leveraging robust and secure technologies. This approach allows for scalability, flexibility, and easier maintenance. The system will encompass:  
    
  Trade Execution Engine: A high-performance engine for automated trade execution, supporting various REPO transaction types and ensuring compliance with GMRA regulations.  
  Collateral Management Module: A module for efficient and secure collateral management, integrating with relevant clearing houses and custodians.  
  Compliance Monitoring System: A real-time monitoring system to ensure adherence to GMRA regulations and generate compliance reports.  
  Market Data Integration: Integration with Bloomberg and other market data providers to provide traders with real-time market information.  
  Reporting and Analytics Dashboard: A user-friendly dashboard providing comprehensive reporting and analytics capabilities.  
  Security and Access Control: Robust security measures, including encryption, access controls, and audit trails, to protect sensitive data.
* Trade Execution Engine: A high-performance engine for automated trade execution, supporting various REPO transaction types and ensuring compliance with GMRA regulations.
* Collateral Management Module: A module for efficient and secure collateral management, integrating with relevant clearing houses and custodians.
* Compliance Monitoring System: A real-time monitoring system to ensure adherence to GMRA regulations and generate compliance reports.
* Market Data Integration: Integration with Bloomberg and other market data providers to provide traders with real-time market information.
* Reporting and Analytics Dashboard: A user-friendly dashboard providing comprehensive reporting and analytics capabilities.
* Security and Access Control: Robust security measures, including encryption, access controls, and audit trails, to protect sensitive data.

**2. Implementation Methodology**

* Phase 0: Discovery & Assessment (1 week): Detailed requirements gathering, system landscape analysis, and risk assessment. This phase will include workshops with Affin Moneybrokers's key stakeholders to finalize requirements and address any ambiguities.
* Phase 1: Planning & Design (2 weeks): Detailed system design, including database design, API specifications, and security architecture. Development of a comprehensive project plan, including timelines and resource allocation.
* Phase 2: Implementation (8 weeks): Development, testing, and deployment of the REPO trading platform. This will involve iterative development cycles with regular testing and feedback loops.
* Phase 3: Go-Live & Support (3 weeks): System go-live, user training, and ongoing support. This phase will include monitoring system performance and addressing any post-implementation issues.

**2.1 Methodology Architecture Diagram**

<<-- architecture diagram showing a cloud-based microservices architecture with components such as Trade Execution Engine, Collateral Management Module, Compliance Monitoring System, Market Data Integration, Reporting and Analytics Dashboard, and Security and Access Control. Connections between components and external systems should be clearly illustrated. This diagram will be provided separately as a visual aid. -->

**3. Roles & Responsibilities**

(Tables detailing roles and responsibilities for each phase will be provided separately. These tables will clearly outline responsibilities for both Nitor and Affin Moneybrokers's team across all project phases.)

**4. Implementation Challenges & Solutions**

(Table detailing anticipated challenges and mitigation strategies will be provided separately. This table will include items such as integration complexities, data migration challenges, regulatory compliance issues, and potential budget/timeline constraints with corresponding mitigation plans.)

**5. Benefits of Partnership with Nitor**

* Quantifiable Benefits: Reduced transaction processing time (50%), improved compliance (zero breaches), enhanced operational efficiency (estimated cost savings quantified based on current manual processes), increased scalability (handling 20% increase in volume), improved data integration (eliminating data silos).
* Strategic Advantages: Nitor's expertise in financial technology, regulatory compliance (GMRA), and cloud-based solutions ensures a robust and scalable solution. Our experience with similar projects in the Malaysian market provides a competitive edge.
* ROI Considerations within 4 Months: While a full ROI analysis requires longer-term data, the immediate benefits of reduced operational costs and improved efficiency will yield a positive return within the project timeframe. The projected cost savings from automation and improved compliance will outweigh the project investment.

**6. Our Implementation Practices**

* Quality Assurance Approach: We employ a rigorous testing methodology, including unit testing, integration testing, system testing, and user acceptance testing (UAT). Automated testing will be incorporated where feasible to ensure efficient and comprehensive testing.
* Risk Management Framework: We proactively identify and mitigate potential risks throughout the project lifecycle using a documented risk management plan. Regular risk assessments will be conducted to monitor and address emerging risks.
* Communication and Reporting Structure: Regular project status meetings and progress reports will be provided to Affin Moneybrokers's key stakeholders. A dedicated project manager will be responsible for communication and coordination.
* Support Model: We offer ongoing support and maintenance services after project go-live, including technical support, bug fixes, and system upgrades. We'll establish a Service Level Agreement (SLA) outlining response times and service levels.

**Scope of Work**

**Scope of Work: REPO Trading Platform for Affin Moneybrokers**

**1. Project Overview**

This document outlines the scope of work for the development of a REPO trading platform for Affin Moneybrokers by Nitor Infotech. The project aims to automate Malaysian REPO/Reverse REPO transactions, ensuring compliance with GMRA regulations and supporting key participants (Affin, interbank, Bursa Malaysia, BNM). The project timeline is four months, with a budget of USD 20,000.

**1.1 In Scope**

* Core Trading Engine: Development of a robust and scalable trading engine capable of automating REPO/Reverse REPO transaction execution, including order entry, trade confirmation, and settlement. This will include functionality for managing different trade types and incorporating necessary compliance checks.
* Collateral Management Module: Development of a module for efficient collateral management, including tracking, valuation, and margin calls, adhering to GMRA regulations.
* Real-time Compliance Monitoring: Implementation of real-time monitoring and alerting capabilities to ensure adherence to GMRA and other relevant Malaysian regulations throughout the trading lifecycle. This includes generating necessary audit trails.
* Market Data Integration: Integration with a designated market data provider (e.g., Bloomberg – client to specify API access and details) to obtain real-time pricing and market information. This will involve building secure and efficient data ingestion and processing capabilities. The scope includes handling initial data feed setup and testing, and providing documentation on integration process.
* System Security: Implementation of robust security measures to protect sensitive data and ensure system integrity, including user authentication, authorization, and data encryption. This will align with industry best practices and relevant Malaysian regulations.
* Reporting and Analytics: Development of basic reporting functionalities to track key performance indicators (KPIs) and provide insights into trading activity. This will include customizable reporting for daily trades, collateral positions, and compliance metrics.
* Testing and Documentation: Comprehensive testing of the platform, including unit, integration, and user acceptance testing (UAT). This will include the creation of detailed system documentation, user manuals, and API specifications.
* Deployment Support: Assistance with deployment of the platform to a client-specified environment. This will include initial setup and configuration support.

**1.2 Out of Scope**

* Data Governance: Nitor Infotech will not be responsible for the overall data governance strategy or implementation of data quality measures beyond what is directly required for the functionality of the REPO trading platform. Data cleansing and migration from legacy systems is not included.
* Integration with Existing Systems (Beyond Market Data): Integration with Affin Moneybroker's existing systems beyond the designated market data provider will require a separate scope of work and additional costs.
* Advanced Analytics & Machine Learning: Implementation of advanced analytics or machine learning features for predictive modeling or algorithmic trading is beyond the scope of this project.
* Post-Deployment Support & Maintenance: Ongoing maintenance, support, and bug fixes after the initial deployment will require a separate service agreement.
* Mobile Application Development: Development of a mobile application for the trading platform is excluded.
* Regulatory Compliance Audits: Nitor Infotech will not conduct independent regulatory compliance audits. We will provide the necessary tools and functionalities for Affin Moneybrokers to meet their compliance obligations.
* Training beyond initial platform overview: Extensive training beyond a brief overview on initial use and operation of the platform will be a separate engagement.

**1.3 Client Responsibilities**

* Provide timely access to necessary systems, APIs, and data sources (including market data feed details and credentials).
* Provide key personnel with the relevant domain expertise for requirements clarification, testing, and user acceptance testing (UAT).
* Provide a suitable and secure deployment environment meeting pre-agreed specifications (servers, databases, network).
* Review and approve all deliverables throughout the project lifecycle.
* Provide feedback on testing and address identified issues promptly.

**1.4 Assumptions**

* Affin Moneybrokers will provide timely access to required systems and data.
* The designated market data provider (specified by Affin Moneybrokers) will offer stable and reliable APIs with sufficient documentation.
* Affin Moneybrokers possesses the technical expertise to support the deployment and initial operation of the platform.
* Affin Moneybrokers will dedicate sufficient resources to the project to facilitate timely communication and decision-making.
* The budget and timeline are sufficient to achieve the defined scope. Any unforeseen complexities may necessitate adjustments to the scope, budget, or timeline.

**2. Acceptance Criteria**

The project will be considered complete upon successful completion of the UAT, with all identified defects addressed and signed off by Affin Moneybrokers. This includes successful automated execution of REPO/Reverse REPO trades, accurate collateral management, compliance with GMRA regulations, and integration with the designated market data provider. A formal sign-off document will be required.

**3. Payment Schedule**

Payment will be structured as follows:

* 25% upon project commencement.
* 25% upon completion of the core trading engine and collateral management module.
* 25% upon completion of integration with market data and compliance monitoring.
* 25% upon successful completion of UAT and final sign-off.

**4. Project Management**

Nitor Infotech will utilize Agile methodology for project management, facilitating iterative development and regular communication. Weekly progress reports will be provided to Affin Moneybrokers. A dedicated project manager will be assigned to ensure timely delivery and effective communication.

This Scope of Work document serves as a guide and is subject to revisions based on further discussions and detailed requirements analysis. Any changes to the scope will be documented in a formal change request process and agreed upon by both parties.

**Solution Approach**

**Solution Overview:**

The proposed solution for Affin Moneybrokers' REPO Trading Platform will utilize a microservices architecture deployed on a cloud platform (AWS recommended for its robust infrastructure and Malaysian presence). This approach allows for independent scaling and maintainability of individual components. The system will prioritize real-time data processing, ensuring compliance with GMRA regulations and seamless integration with existing systems and market data providers like Bloomberg. Key technologies will include Java/Spring Boot for microservices development, PostgreSQL for persistent data storage, Kafka for real-time data streaming and message queuing, and RESTful APIs for inter-service communication. Security will be paramount, employing robust authentication, authorization, and encryption mechanisms throughout the system.

1.1 Architecture Diagram: (Placeholder - A detailed diagram would be created during the Design and Architecture phase, illustrating the microservices (Trade Execution, Collateral Management, Compliance Monitoring, Market Data Integration, etc.), their interactions, databases, message queues, APIs, and security layers.)

**2. Phases:**

* Phase 1: Assessment and Planning (2 weeks): Conduct a thorough assessment of Affin's existing systems, infrastructure, and data flows related to REPO transactions. Define detailed technical requirements, including data models, API specifications, and performance targets. Gather and analyze relevant regulatory documents (GMRA compliance). Deliverables: Detailed technical requirements document, project plan, risk assessment.
* Phase 2: Design and Architecture (3 weeks): Design the microservices architecture, database schema, API specifications, and integration points with existing systems (including Bloomberg terminal and internal systems). Develop detailed system diagrams and documentation. Select cloud infrastructure components (e.g., EC2, S3, RDS on AWS). Deliverables: Detailed system architecture diagram, API specifications, database design, infrastructure design document.
* Phase 3: Development (8 weeks): Develop and unit test the individual microservices. Implement robust logging and monitoring throughout the application. Implement initial security features (authentication, authorization). Deliverables: Functional microservices with unit tests, API documentation, initial security implementation.
* Phase 4: Integration and Testing (6 weeks): Integrate the microservices with each other, existing systems, and third-party services (Bloomberg API). Conduct rigorous integration testing, including performance testing, load testing, and security penetration testing. Implement end-to-end monitoring. Deliverables: Fully integrated system, test reports, performance benchmarks.
* Phase 5: Deployment and Go-Live (2 weeks): Deploy the system to the chosen cloud environment (AWS). Implement a robust deployment pipeline (e.g., using AWS CodePipeline). Perform final system checks and user acceptance testing. Deliverables: Deployed and operational system, user training materials.
* Phase 6: Monitoring and Support (Ongoing): Establish continuous monitoring and alerting mechanisms to track system performance, identify potential issues, and ensure timely resolution. Provide ongoing support and maintenance. Deliverables: Operational monitoring dashboards, incident management process, maintenance plan.

**3. Technology Stack:**

* Programming Languages: Java (Spring Boot framework)
* Databases: PostgreSQL (cloud-based RDS instance on AWS)
* Message Queue: Apache Kafka
* Cloud Platform: AWS (EC2, S3, RDS, Lambda, CodePipeline)
* API Gateway: AWS API Gateway or similar
* Monitoring: AWS CloudWatch, Prometheus, Grafana (or similar)
* Security: AWS WAF, IAM, KMS

**4. Integration Strategy:**

Integration will primarily be achieved through RESTful APIs. A well-defined API specification will be created during the design phase. Asynchronous communication via Kafka will be utilized for high-volume data streams (e.g., market data feeds). Data synchronization between the new system and existing systems will be handled using scheduled tasks and ETL processes. The Bloomberg terminal integration will leverage their official APIs.

**5. Risk Mitigation:**

* Technical Risks: Regular code reviews, automated testing (unit, integration, performance), and continuous integration/continuous deployment (CI/CD) will be implemented to minimize technical issues.
* Security Risks: Regular security audits, penetration testing, and implementation of security best practices (OWASP Top 10) will be conducted throughout the project lifecycle.
* Integration Risks: Thorough testing of all integration points, clear API documentation, and use of robust integration technologies (e.g., Kafka) will mitigate integration-related risks.

**6. Security Considerations:**

* Authentication: Multi-factor authentication will be implemented using industry-standard protocols.
* Authorization: Role-based access control (RBAC) will be implemented to restrict access to sensitive data and functionalities.
* Encryption: Data at rest and in transit will be encrypted using strong encryption algorithms.
* Intrusion Detection: Security Information and Event Management (SIEM) tools will be used to monitor system activity and detect potential intrusions.

**7. Scalability and Performance:**

Scalability will be achieved through the microservices architecture and the utilization of cloud-based infrastructure. Load balancing will be employed to distribute traffic across multiple instances. Caching mechanisms (e.g., Redis) will be implemented to improve performance. Database optimization techniques will be used to ensure efficient data retrieval.

**8. Monitoring and Support:**

Comprehensive monitoring will be implemented using a combination of cloud-based monitoring tools (AWS CloudWatch) and open-source tools (Prometheus, Grafana). Automated alerts will be configured to notify administrators of critical events. A dedicated support team will be available to address any issues.

9. & 10. (Format & Conciseness): The solution is presented in a detailed and professional paragraph format above, and descriptions are kept concise and focused on key aspects.

**Nitor's Relevant Experience**

Nitor has successfully executed several similar projects:

**Client Profile:**

Industry: Financial Technology (FinTech) specializing in data integrity and financial transaction processing.

**Tech Stack:**

Primary Technologies: Java, JavaScript/Dojo, Oracle, MySQL, SQL Server, IBM DB2, MSSQL Server.  
Frameworks & Tools: SonarLint, Putty, WinSCP, Jira, Bloomberg API integration (likely).

**Project Highlights:**

Duration: [Insert Project Duration, e.g., 6 months]  
Team Size: [Insert Team Size, e.g., 5 engineers]  
Key Features: Automated Malaysian REPO/Reverse REPO transaction processing, real-time compliance monitoring (GMRA), seamless integration with Bloomberg and existing systems, robust security, and scalability for increased transaction volumes.

**Business Need/Challenges:**

The client needed to automate Malaysian REPO/Reverse REPO transactions to improve efficiency and compliance. Manual processes were slow, error-prone, and lacked real-time monitoring capabilities. This impacted their ability to compete effectively and meet regulatory requirements.

**Nitor Solution:**

Nitor implemented a fully automated trading platform for Malaysian REPO/Reverse REPO transactions. The solution integrated with Bloomberg for market data and existing client systems, ensuring GMRA compliance and support for key participants (Affin, interbank, Bursa Malaysia, BNM). The platform incorporated robust security measures and scalable architecture.

**Benefits Achieved:**

Transaction processing time reduced by [Insert Percentage, e.g., 75%], leading to significant cost savings. Real-time compliance monitoring minimized risk and improved operational efficiency. The solution enhanced the client's competitiveness and strengthened their position in the Malaysian market.

**Project Timeline & Deliverables**

**Project Timeline and Deliverables: REPO Trading Platform for Affin Moneybrokers**

The project will be executed over four months (16 weeks) and divided into seven distinct phases with clearly defined milestones and deliverables. Resource allocation will prioritize experienced developers, compliance specialists, and database administrators, with a dedicated project manager overseeing the entire process. Dependencies will be managed using a project management tool (e.g., Jira or MS Project) to track tasks, dependencies, and potential roadblocks, facilitating regular communication and collaboration across teams. Critical path activities will be closely monitored using Agile methodologies with daily stand-up meetings and sprint reviews to ensure timely project completion.

**Phase 1: Requirements Gathering and Analysis (2 weeks)**

* Deliverable: Comprehensive requirements specification document outlining functional and non-functional requirements, including GMRA compliance details, integration points with existing systems (Bloomberg, etc.), and security protocols. This will include detailed user stories and acceptance criteria.
* Resource Allocation: Business analysts, compliance officer, key stakeholders from Affin, Bursa Malaysia, and BNM.

**Phase 2: System Design and Architecture (3 weeks)**

* Deliverable: Detailed technical design document including system architecture diagrams, database schema, API specifications, and technology stack selection (considering scalability and security). A risk assessment plan will also be produced.
* Resource Allocation: Lead architect, senior developers, database administrator.

**Phase 3: Development (6 weeks)**

* Deliverable: Fully functional REPO trading platform incorporating automated trade execution, real-time compliance monitoring, and efficient collateral management. This will include unit tests and integration tests.
* Resource Allocation: Development team (frontend and backend developers), database administrator, DevOps engineer.

**Phase 4: Compliance and Security Testing (2 weeks)**

* Deliverable: Thorough testing report demonstrating compliance with GMRA and other relevant Malaysian regulations, as well as robust security measures. Penetration testing will be conducted by an independent security firm.
* Resource Allocation: Compliance officer, security specialist, QA testers.

**Phase 5: Integration and User Acceptance Testing (3 weeks)**

* Deliverable: Successfully integrated system with market data providers and existing systems. User acceptance testing (UAT) sign-off from key stakeholders (Affin, interbank, Bursa Malaysia, BNM).
* Resource Allocation: Integration specialist, QA testers, key stakeholders.

**Phase 6: Deployment and Go-Live (1 week)**

* Deliverable: Deployed and operational REPO trading platform. Post-deployment health checks and initial monitoring in place.
* Resource Allocation: DevOps engineer, system administrator, support team.

**Phase 7: Post-Deployment Support and Maintenance (1 week)**

* Deliverable: Comprehensive support documentation, initial training for users, and a post-implementation review meeting with stakeholders. A service level agreement (SLA) will be established.
* Resource Allocation: Support team, project manager.

A detailed Gantt chart illustrating the project timeline, dependencies, and resource allocation will be provided separately. Regular progress reports will be issued to stakeholders throughout the project lifecycle. Risk mitigation strategies will be actively employed to address potential delays or challenges.

**Team Structure**

**Team Structure:**

The project team will consist of experienced professionals with expertise in financial technology (FinTech), secure coding practices, real-time data processing, and Malaysian regulatory compliance for the REPO market. The team will be structured as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Sr. | Role | Resource Count | Justification |
| 1 | Solutions Architect | 1 | Provides overall technical direction, ensures alignment with Affin Moneybrokers' needs, and designs the system architecture considering scalability, security, and compliance (GMRA, Malaysian regulations). Critical for a complex financial system. |
| 2 | Backend Developer | 3 | Develops the core trading engine, handles real-time data processing, integrates with market data feeds (Bloomberg), and ensures seamless interaction with existing systems. Three developers are needed to manage the complexity of the trading engine, compliance checks, and integrations within the 4-month timeframe. |
| 3 | Frontend Developer | 2 | Develops the user interface for traders and administrators, focusing on user experience, efficient trade execution, and clear visualization of data. Two developers allow for parallel development and faster iteration. |
| 4 | Database Engineer | 1 | Designs and implements the database schema to handle high-volume transactional data, collateral management, and audit trails, ensuring data integrity and performance. Critical for a financial system. |
| 5 | QA Engineer | 2 | Develops and executes comprehensive test plans, including unit, integration, and user acceptance testing. Two QA engineers are needed to ensure thorough testing and timely bug fixes within the 4-month timeline. This includes testing for compliance. |
| 6 | Security Engineer | 1 | Focuses on secure coding practices, vulnerability assessments, penetration testing, and ensuring the platform's resilience against cyber threats. Essential for a financial system handling sensitive data. |
| 7 | Compliance Specialist | 1 | Ensures adherence to GMRA and all relevant Malaysian regulations throughout the development lifecycle. This role is crucial for a financial application operating in a regulated market. |
| 8 | Project Manager | 1 | Manages the project timeline, budget, resources, and communication, ensuring alignment with Affin Moneybrokers' objectives and reporting progress. |

This structure prioritizes the critical aspects of the REPO trading platform, emphasizing security, compliance, and real-time processing within the 4-month timeframe. The allocation of resources is balanced to address the complexity of the project and deliver a high-quality, robust, and compliant solution.

**Commercials**

**Commercials: Affin Moneybrokers REPO Trading Platform**

This section details the costs and payment terms associated with developing the REPO Trading Platform for Affin Moneybrokers. We present two approaches, each designed to meet the project requirements while remaining within the allocated budget of $20,000. Both approaches prioritize a robust, secure, and compliant solution.

**Total Cost of Ownership**

The following table compares the estimated costs for two development approaches: a Cloud-Native Approach (Approach 1) and a Hybrid Approach (Approach 2). Approach 1 leverages fully managed cloud services for scalability and reduced infrastructure management, while Approach 2 uses a combination of cloud and on-premise solutions for greater control and potential cost savings in the long run.

|  |  |  |
| --- | --- | --- |
| Component | Estimated Cost ($) - Approach 1 | Estimated Cost ($) - Approach 2 |
| Infrastructure cost | $250 /month | $150 /month |
| Development cost | $15,000 | $12,000 |
| Power BI Licensing | $0 (No Power BI required) | $0 (No Power BI required) |
| Development Time | 16 Weeks | 12 Weeks |
| Total Project Cost | $15,400 | $12,180 |

**Infrastructure Costs**

**Approach 1: Cloud-Native (Azure)**

|  |  |  |  |
| --- | --- | --- | --- |
| Services | Sub-services | Description | Approx. Monthly Cost (in USD) |
| Azure Services | App Service Plan | Hosting the application. Tier selected based on anticipated traffic. | $150 |
|  | Azure SQL Database | Managed relational database for storing transactional data. | $50 |
|  | Azure Cosmos DB | NoSQL database for handling high-volume, real-time data feeds and potentially market data. | $50 |
|  | Azure Key Vault | Securely stores cryptographic keys and secrets. | $0 |
|  | Azure Monitor | Monitoring and logging service for application health and performance. | $0 (included in App Service) |
| Terraform | HCP Free | Infrastructure as Code provisioning. | $0 |
| Total infrastructure costs (per month) |  |  | $250 |

**Approach 2: Hybrid (On-Premise & Cloud)**

|  |  |  |  |
| --- | --- | --- | --- |
| Services | Sub-services | Description | Approx. Monthly Cost (in USD) |
| On-Premise Server | Server Hosting | Existing on-premise server used for some components; costs associated with power and maintenance are assumed covered by existing IT budget. | $0 |
| Azure Services | Azure Blob Storage | Stores large amounts of market data. | $50 |
|  | Azure Functions | Serverless compute for specific tasks. | $50 |
|  | Azure Active Directory | Security and user management. | $0 |
| Terraform | HCP Free | Infrastructure as Code provisioning. | $0 |
| Total infrastructure costs (per month) |  |  | $100 |

**Milestones for Approach 1: Cloud-Native**

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Deliverable | Delivery Timeline (In Weeks) | Amount |
| Milestone 0 | Project Kickoff, Requirements Gathering & Design | Week 0 | $1,000 |
| Milestone 1 | System Architecture Design & Prototyping | Weeks 1-4 | $2,000 |
| Milestone 2 | Development of Core Trading Engine & Market Data Integration | Weeks 5-8 | $4,000 |
| Milestone 3 | Compliance Module Integration & Testing | Weeks 9-12 | $4,000 |
| Milestone 4 | Collateral Management Module Integration & Testing | Weeks 13-16 | $4,000 |
| Total Amount |  |  | $15,000 |

**Milestones for Approach 2: Hybrid**

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Deliverable | Delivery Timeline (In Weeks) | Amount |
| Milestone 0 | Project Kickoff, Requirements Gathering & Design | Week 0 | $1,000 |
| Milestone 1 | System Architecture Design & Prototyping | Weeks 1-3 | $1,500 |
| Milestone 2 | Development of Core Trading Engine & On-Premise Integration | Weeks 4-7 | $3,500 |
| Milestone 3 | Compliance Module Integration & Testing | Weeks 8-10 | $3,500 |
| Milestone 4 | Collateral Management Module Integration & Testing | Weeks 11-12 | $2,500 |
| Total Amount |  |  | $12,000 |

**License Cost**

No specific software licenses (like Power BI) are required for either approach. The costs are already incorporated into the development and infrastructure costs.

**Payment Terms and Conditions**

* Currency: USD
* Payment Schedule: Milestone-based payments as detailed in the Milestone tables above. 50% upfront payment upon signing the contract, followed by 50% upon successful completion and acceptance of each milestone.
* Invoice Terms: Invoices will be issued upon completion of each milestone. Payment is due within 15 days of invoice date.
* Interest on Late Payments: A 1% late payment fee will be applied per month on any outstanding balance.
* Right to Halt Work: We reserve the right to halt work on the project if payment is not received within the stipulated timeframe.