## Commercial Proposal: FOSS-Based AI-Enabled CSMP

Cost Structure Assumptions:

* Currency: All figures are in United States Dollars (USD) for international benchmarking. Final contracts can be denominated in TTD.
* Pricing Model: Time & Materials (T&M) with a Not-to-Exceed (NTE) Cap for the MVP phase. This provides flexibility for agile development while ensuring budget predictability for MPAAI.
* Team Rates: Based on a blended offshore/onshore model, with senior resources commanding higher rates. Rates are competitive for high-quality FOSS engineering.
* Infrastructure: Estimates are for a cloud-hosted environment (e.g., AWS, compatible with the Caribbean region). On-premises infrastructure would involve significant capital expenditure (CapEx) not reflected here.

### 1. Cost Estimation: Minimum Viable Product (MVP)

#### 1.1 Implementation Services (32 Weeks)

This covers the entire human capital cost for designing, developing, testing, and deploying the MVP.

| Role | Commitment | Estimated Man-Days | Blended Daily Rate (USD) | Total Cost (USD) |
| --- | --- | --- | --- | --- |
| Project Manager | Full-time | 128 | $650 | $83,200 |
| Solution Architect | Full-time | 128 | $800 | $102,400 |
| Django Backend Developer (x2) | Full-time | 256 | $600 | $153,600 |
| React/React Native Developer (x2) | Full-time | 256 | $550 | $140,800 |
| UI/UX Designer | Part-time (50%) | 64 | $550 | $35,200 |
| DevOps Engineer | Part-time (50%) | 64 | $700 | $44,800 |
| AI/ML Engineer | Part-time (50%) | 64 | $750 | $48,000 |
| QA/Test Engineer | Full-time | 128 | $500 | $64,000 |
| Subtotal (Labor) |  | ~1,088 days |  | $672,000 |

| Other Cost Factors | Description | Cost (USD) |
| --- | --- | --- |
| Project Management & Overhead | (15% of Labor) Tools, administration, reporting. | $100,800 |
| Contingency | (10% of Labor) For scope refinement and unforeseen challenges. | $67,200 |
| Third-Party Penetration Test | Independent security audit prior to go-live. | $25,000 |
| Travel & Expenses (T&E) | For key workshops, UAT, and go-live support (2-3 trips). | $30,000 |
| Subtotal (Other Costs) |  | $223,000 |

#### 1.2 Annual Infrastructure & Software (Year 1)

While the software is FOSS, the cloud infrastructure and managed services have costs.

| Component | Specification | Estimated Monthly Cost (USD) | Estimated Annual Cost (USD) |
| --- | --- | --- | --- |
| Compute (Kubernetes Cluster) | 6-8 vCPUs, 16-32GB RAM (Production + Staging) | $600 | $7,200 |
| Database (PostgreSQL) | Managed instance (e.g., AWS RDS), High Availability, 500GB storage | $450 | $5,400 |
| Object Storage (MinIO/S3) | 2 TB for documents, images, backups | $100 | $1,200 |
| CDN & WAF | Content Delivery & Web Application Firewall (e.g., CloudFront) | $150 | $1,800 |
| Monitoring & Logging | Prometheus, Grafana, Loki/ELK Stack | $200 | $2,400 |
| Backup & Disaster Recovery | Automated snapshots and off-site backups | $100 | $1,200 |
| Domain & SSL Certificates | .gov.tt domain, wildcard SSL | $50 | $600 |
| Subtotal (Infrastructure) |  | ~$1,650/month | $19,800 |

#### 1.3 MVP Cost Summary

| Cost Category | Total Cost (USD) |
| --- | --- |
| Implementation Services (One-time) | $895,000 |
| Infrastructure & Hosting (Year 1) | $19,800 |
| Total MVP Investment (Year 1) | $914,800 |

Not-to-Exceed (NTE) Proposal for MVP Implementation: $895,000

### 2. Cost Estimation: Post-MVP & Ongoing Costs

#### 2.1 Annual Support & Maintenance (From Year 2 Onwards)

A retainer for ongoing support, minor enhancements, and security updates.

| Service | Description | Annual Cost (USD) |
| --- | --- | --- |
| Standard Support Pack | * 8x5 support with 4-hour response time for critical issues. * Security patching for OS, Django, PostgreSQL, and other FOSS components. * Minor bug fixes and performance tuning. * Up to 10 man-days for minor feature requests. | $95,000 |
| Infrastructure Hosting | (As per Section 1.2) | $19,800 |
| Total Annual Cost (Post-MVP) |  | $114,800 |

#### 2.2 Phase 2: Enhancement Packages (Optional)

These are fixed-price or T&M packages for major new functionality.

| Enhancement Package | Description | Estimated Cost (USD) |
| --- | --- | --- |
| Advanced AI & Analytics | Predictive routing, sentiment analysis, advanced Superset dashboards. | 120,000−180,000 |
| RPA Integration | Automate 5-10 key processes with n8n/Airflow (e.g., data entry, status updates to legacy systems). | 80,000−120,000 |
| Advanced Omnichannel | Integration with additional channels (WhatsApp Business API, social listening). | 40,000−60,000 |

### 3. Total Cost of Ownership (TCO) Analysis: 5-Year View

This demonstrates the significant value of the FOSS model by comparing it to the high recurring license fees of a proprietary stack.

| Year | FOSS-Based Solution (USD) | Proprietary Stack (Indicative - USD) |
| --- | --- | --- |
| Year 1 (MVP) | $914,800 (Implementation + Infra) | ~1,200,000(Implementation+∗∗300k+ in Annual Licenses\*\*) |
| Year 2 | $114,800 (Support + Infra) | ~450,000(Support+∗∗300k+ in Annual Licenses\*\*) |
| Year 3 | $114,800 (Support + Infra) | ~450,000(Support+∗∗300k+ in Annual Licenses\*\*) |
| Year 4 | $114,800 (Support + Infra) | ~450,000(Support+∗∗300k+ in Annual Licenses\*\*) |
| Year 5 | $114,800 (Support + Infra) | ~450,000(Support+∗∗300k+ in Annual Licenses\*\*) |
| Total 5-Year TCO | $1,374,000 | ~$3,000,000 |

Key TCO Insight: The FOSS solution offers an estimated ~55% savings over 5 years, primarily by eliminating over $1.5 million in proprietary software license fees. The investment is shifted from perpetual, opaque licensing to transparent, value-added services and development.

### 4. Pricing & Payment Milestones

We propose linking payments to the successful delivery of key MVP milestones, aligning our incentives with MPAAI's project success.

| Milestone | Payment Trigger | Percentage | Amount (USD) |
| --- | --- | --- | --- |
| Mobilization | Project Kick-off & Charter Sign-off | 10% | $89,500 |
| Design Sign-off | Approval of UX/UI & Technical Architecture | 20% | $179,000 |
| Core Platform Delivery | Successful UAT of Citizen Portal, Mobile App, and Case Management | 40% | $358,000 |
| Go-Live & Project Completion | Successful Production Deployment and MVP Sign-off | 25% | $223,750 |
| Post-Deployment Support | Completion of 6-Month Warranty/Hypercare Period | 5% | $44,750 |
| Total |  | 100% | $895,000 |

Infrastructure costs would be invoiced monthly or annually in advance, directly from the cloud provider or through us as a managed service.

### Conclusion

This commercial proposal for a FOSS-based CSMP provides the Government of Trinidad and Tobago with a fiscally responsible, high-value path to digital transformation. The estimated MVP investment of $895,000 delivers a complete, secure, and scalable platform, with a total 5-year cost of ownership that is roughly half that of a proprietary equivalent.

This model ensures that public funds are invested in building sovereign capability and long-term sustainability, rather than perpetual license payments. We are prepared to refine these estimates based on more detailed technical discussions.