Priority Blockchain & AI Use Cases for
Maryland State Agencies

Governance modernization initiatives

Executive Framing for Legislators

- Blockchain provides verifiable trust, auditability, and integrity of records.
- AI provides speed, automation, pattern recognition, and predictive capability.
- Together, they create a secure, intelligent digital infrastructure for state government.

1. Secure Public Records & Records Integrity

Agencies:

- Maryland State Archives, Department of Assessments & Taxation, Clerk of Courts

Problem:

- Records (land deeds, court filings, incorporation documents) are fragmented across systems
- Risk of alteration, data loss, FOIA disputes, and cyber tampering
- Long-term preservation issues

Blockchain + AI Solution:

- Store cryptographic proof (hash) of every official document on blockchain
- AI auto-classifies, indexes, and flags anomalies in filings
- Immutable audit trail for every modification or access

Impact for Legislators:

- Eliminates record tampering disputes
- Strengthens legal defensibility of state records
- Reduces FOIA response times
- Long-term preservation independent of vendor platforms

Talking point:

"This makes Maryland's public records legally stronger than paper."

2. Election Infrastructure & Chain-of-Custody Assurance

Agencies:

- Maryland State Board of Elections

Problem:

- Public distrust in election integrity
- Complex chain-of-custody documentation
- Vulnerability to misinformation

Blockchain + AI Solution:

- Blockchain-secured logs for:
  - Ballot chain-of-custody
  - Equipment access logs
  - Poll worker actions
- AI monitors anomalies in turnout patterns and procedural deviations (not votes)

Impact for Legislators:

- Radical transparency without compromising ballot secrecy
- Independent verification available to auditors
- Reduces conspiracy narratives with mathematical proof

Talking point:

"We cannot persuade the public with press releases; we need systems that prove integrity mathematically."

3. Procurement Transparency & Contract Oversight

Agencies:

- Department of General Services (DGS), Comptroller

Problem:

- Vendor disputes
- Lack of transparency in awards
- Inefficient audits
- Risk of favoritism perception

Blockchain + AI Solution:

- All bids timestamped and sealed on blockchain
- Smart contracts enforce procurement rules
- AI flags irregular bid patterns, pricing anomalies, or conflicts of interest

Impact for Legislators:

- Reduces corruption risk
- Strengthens public confidence
- Faster audits
- Improves minority- and small-business fairness

Talking point:

4. Fraud Reduction in Benefits Programs

Agencies:

- Department of Human Services, Unemployment Insurance, Medicaid (MDH)

Problem:

- Benefits fraud costs millions annually
- Duplicate identities
- Manual verification processes

Blockchain + AI Solution:

- Blockchain-based identity verification (citizen controls credentials)
- AI detects fraud patterns across agencies
- Inter-agency verification without exposing personal data

Impact for Legislators:

- Reduces fraud
- Faster approvals for legitimate recipients
- Protects privacy while improving oversight

Talking point:

"This protects both taxpayers and the most vulnerable residents simultaneously."

5. Cybersecurity & Ransomware Defense

Agencies:

- DoIT, All Executive Agencies, Counties & Municipalities

Problem:

- Ransomware attacks increasing against local governments
- Data integrity compromised even when backups exist
- Difficulty proving what data is authentic after an incident

Blockchain + AI Solution:

- Blockchain used as a “trust anchor” for critical system integrity
- AI monitors for abnormal activity patterns
- After breach, systems can be verified against blockchain record

Impact for Legislators:

- Enables rapid recovery with verified data
- Prevents silent data manipulation
- Stronger cyber insurance posture

Talking point:

6. Licensing, Permits & Professional Credentials

Agencies:

- Department of Labor, Health Occupations Boards, MVA

Problem:

- License fraud
- Manual verification for employers
- Credential verification delays

Blockchain + AI Solution:

- Professionals issued blockchain-verifiable credentials
- Employers verify instantly
- AI automates renewals and flags irregular behavior

Impact for Legislators:

- Reduces fraud
- Supports workforce mobility
- Speeds hiring
- Reduces administrative burden

Talking point:

7. Grant Tracking & Federal Fund Accountability

Agencies:

- Budget & Management, Transportation, Education, Housing

Problem:

- Federal grants require extensive reporting
- Risk of misallocation
- Manual reconciliation

Blockchain + AI Solution:

- Funds tracked transparently through blockchain ledger
- AI produces real-time compliance reports
- Immutable audit trail for federal inspectors

Impact for Legislators:

- Stronger federal confidence in Maryland
- Faster compliance reporting
- Reduced risk of clawbacks

Talking point:

"This makes Maryland the gold standard for federal grant accountability."

8. Citizen-Owned Digital Identity (Self-Sovereign ID)

Agencies:

- MVA, Health, Education, Elections

Problem:

- Citizens repeatedly submit same documents
- Data silos
- Privacy risks from centralized databases

Blockchain + AI Solution:

- Citizens hold verifiable digital credentials (ID, birth cert, license)
- Agencies verify without storing excess data
- AI simplifies application workflows

Impact for Legislators:

- Improves privacy
- Reduces administrative overhead
- Streamlines citizen experience

Talking point:

"This flips the model: citizens control their data, agencies verify trust."

Why This Matters Strategically for Maryland

Maryland hosts:

- NSA / USCYBERCOM
- Fort Meade cyber ecosystem
- Federal contractors
- National cybersecurity talent pool

This positions Maryland uniquely to:

- Become a national model state for trusted digital governance
- Attract GovTech investment
- Strengthen public-private innovation partnerships

Summary

- Blockchain ensures truth, integrity, and auditability
- AI ensures speed, efficiency, and intelligence
- Together they provide trust at scale for modern government