BLOCKCHAIN FOR TAXATION #3

PROPOSED MODELS OF SOLUTIONS

SYNERGIES WITH AI & BLOCKCHAIN

- **Artificial Intelligence**
  - Sophisticated data analytics optimize compliance & efficiency
  - Natural Language Processing analyzes legal provisions & case law

- **Blockchain Technology**
  - Information security
  - System scalability
  - Fraud reduction
  - Governance

- **Smart contracts** for legal, regulatory, and contractual restitutions on data usage & sharing
- **Zero-knowledge proofs (ZKPs)** for transnational regimes like value-added tax (VAT) & withholding taxes
- **Non-fungible tokens (NFTs)** establish data is unique, immutable, and owned by users with specified permissions

IMMUTABLE NOTARIZATION ON BLOCKCHAIN

- **TAXABLE EVENT**
  - Citizens own their identity keys & decide to share their verified data
  - Both parties compute a cryptographic hash of taxable event documentation
  - Parties retain their own data

- **HASH-ONLY BLOCKCHAIN**
  - Immutable record of cryptographic hash values, with record identifiers for transaction documentation
  - Acts as automatic notary for digital legal notarization

- **GOVERNMENTS**
  - Tax authorities may request data records
  - Can recompute cryptographic hash values for records, ensuring nobody modifies data

LEGAL AND REGULATORY CONSIDERATIONS

- **New rules** for new issues
- **Balancing automation** with human review & adjudication
- **Addressing legal ambiguity** (e.g., binary objective criteria to trigger legal presumptions)
- **Cross-border coordination** (e.g., smart contracts to attribute tax treatment to adequate jurisdiction)

- **Compliance with GDPR & other data laws** (e.g., ZKPs & advanced cryptography for privacy)
- **Alignment with competition law** for different DLT systems & validation mechanisms, preventing use of commercially sensitive data for illegal price setting & anti-competitive behavior
- **Protecting taxpayer rights** (e.g., dispute resolution, burden of proof, identity management & digital inclusiveness)