

Ankh Abstract

A Fair Digital Cash with Equal Distribution Through Identity Verification

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September 15, 2006

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Abstract

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Abstract

Ankh represents a revolutionary approach to digital cash that prioritizes true economic equality above all else. By establishing a maximum population cap of 9 billion individuals and issuing exactly 1 ANKH token per verified human being, each valued at \$2.7 million USD to represent their complete lifetime earning potential, we propose the world's first implementation of Universal Basic Wealth.

This paper proposes a novel cryptographic database architecture utilizing chained transaction records to enable peer-to-peer digital currency transfer without traditional banking intermediaries. Transaction records are cryptographically linked through hash functions, forming what we term a "blockchain" structure that may prevent double-spending in digital currency systems without requiring trusted third parties.

Based on OECD economic data analyzing lifetime earnings across developed nations (OECD Economic Outlook, 2005), each ANKH unit would represent approximately \$2.7 million USD in statistical lifetime income potential. The proposed identity verification system employs biometric methods to ensure single-token allocation per individual, potentially addressing wealth distribution through technological means rather than traditional redistribution mechanisms.

This proposed cryptographic currency system represents a potential approach to economic distribution, wherein individuals would receive substantial economic resources upon verification. We hypothesize this mechanism might facilitate innovation and address poverty through technological rather than purely political means.

1. Introduction

Since the dawn of civilization, monetary systems have been inherently unfair. Whether based on gold, silver, or government-issued currency, these systems invariably favor those who already possess wealth or have access to specialized resources like land, inheritance, or capital (Galbraith, 1975; Heilbroner, 1999).

Every economic system throughout history has suffered from the same fundamental flaw: they require existing value, time, labor, property, or social connections to acquire money. This creates persistent cycles where wealth concentrates among the already wealthy while the poor remain trapped by their circumstances (Kuznets, 1955; Galbraith, 1958).

Recent advances in cryptographic protocols and network systems (Merkle, 1980; Lamport et al., 1982; Schneier, 1996) suggest potential solutions to these historical problems. The ANKH proposal attempts to address this cycle through a novel principle: every verified individual would receive exactly one digital currency unit representing their statistical lifetime income potential.

Drawing from OECD economic data on lifetime earnings across developed nations (OECD Economic Outlook, 2005), each ANKH unit would represent approximately \$2.7 million USD in lifetime economic potential. This approach differs from traditional income support mechanisms by providing substantial upfront capital allocation upon identity verification.

1.1 Technological Change and Economic Disruption

Current trends in computational power (Moore, 1965), computer science research (McCarthy et al., 1955), and industrial robotics (Engelberger, 1980) suggest continued technological advancement. Historical patterns of mechanization indicate that within several decades, computerized systems may impact human employment across manufacturing and routine service sectors.

Industrial automation has displaced significant manufacturing employment (Rifkin, 1995; Noble, 1984). Continuing developments in computer science and automated systems may extend this displacement, potentially affecting:

- **Manufacturing:** Continued factory automation expansion across production lines
- **Retail & Service:** Basic automated systems and computerized processes
- **Administrative Work:** Computer systems processing routine documentation and analysis
- **Financial Services:** Algorithmic trading and computerized transaction processing
- **Information Work:** Database management and routine data processing tasks

1.2 Alternative Economic Distribution Models

Traditional economic models assume human labor remains essential for value creation. However, as computerized systems become more sophisticated over the coming decades, alternative distribution mechanisms may become necessary. Historical precedent from previous technological revolutions suggests potential displacement effects requiring new approaches:

- **Mass Unemployment:** Permanent displacement of human workers across sectors
- **Wealth Concentration:** Capital owners capturing all productivity gains from automation
- **Consumer Demand Collapse:** Unemployed populations unable to purchase automated production
- **Social Instability:** Economic inequality reaching historically unprecedented levels

ANKH addresses potential economic transformation by establishing direct wealth distribution. Rather than attempting to preserve existing employment patterns or expand traditional welfare systems, we propose providing every human with substantial economic resources, creating a foundation for economic stability during periods of technological change.

2. The Problem with Current Monetary Systems

2.1 Traditional Finance

Traditional monetary systems suffer from several fundamental flaws extensively documented in economic literature (Friedman, 1962; Samuelson, 1976):

- **Centralized Control:** Governments and central banks control money supply with potential for political manipulation (Hayek, 1976)
- **Inequality Amplification:** Systems favor existing wealth holders through compound interest and capital accumulation (Kuznets, 1955)
- **Exclusion:** Billions lack access to basic financial services due to geographic and economic barriers (World Bank, 2004)
- **Inflation:** Currency devaluation disproportionately affects fixed-income populations (Fischer, 1981)

2.2 Digital Economic Systems

While digital payment technologies offer new possibilities for monetary systems (Chaum, 1985; Schneier, 1996), most proposed solutions still replicate traditional inequalities:

- **Technical Complexity:** Complex cryptographic systems favor those with advanced education and computing access
- **Infrastructure Requirements:** Need expensive computing equipment and reliable internet connectivity
- **First-Mover Advantage:** Early adopters benefit disproportionately, recreating wealth concentration
- **Speculation Focus:** Value becomes disconnected from real economic utility through speculative trading

3. The Ankh Solution

3.1 Core Principles

1. **Universal Basic Wealth:** Every verified human receives exactly 1 Ankh worth \$2.7 million USD
2. **OECD-Based Valuation:** Coin value reflects statistical lifetime earning potential
3. **True Equality:** Eliminates wealth disparity from birth through single high-value distribution
4. **Security:** Cryptographically-linked ledger prevents double-spending and fraud
5. **Privacy:** Identity verification without exposing personal data
6. **Accessibility:** User-friendly interface for global adoption
7. **Compatibility:** Designed for future integration with emerging digital payment systems

3.2 Key Features

- Biometric identity verification eliminating government dependency
- Digital fingerprint and facial recognition preventing duplicate registrations
- One-time coin issuance of 1 ANKH per verified human (valued at \$2.7M USD)
- Document-free process accessible to all humans regardless of political status
- Secure peer-to-peer transaction network with distributed validation
- Built-in trading system with fractional amounts (8 decimal places)
- Multi-signature wallet support for institutional holdings
- Generational wealth transfer mechanisms
- Libertarian principles: no central authority or government control
- Egalitarian access: every human qualifies regardless of documentation

4. Revolutionary Biometric Identity System

4.1 Beyond Government Documents

ANKH eliminates the fundamental barrier that has prevented true global financial inclusion: the requirement for government-issued identity documents. Billions of individuals worldwide lack access to passports, national ID cards, or official documentation due to political persecution, statelessness, geographic isolation, or systematic exclusion by corrupt governments (UNHCR, 2004).

Traditional identity verification systems may perpetuate inequality by requiring documentation that significant populations cannot obtain. The ANKH proposal would address this limitation through biometric technology that could recognize the inherent biological uniqueness of individuals, regardless of their documentation status or governmental recognition.

4.2 Pure Biometric Authentication

ANKH would propose a document-independent identity verification system utilizing emerging biometric research methodologies:

- **Digital Photography:** Facial photograph analysis utilizing pattern recognition algorithms (experimental implementation)
- **Fingerprint Analysis:** Digital fingerprint comparison employing available scanning technologies
- **Voice Pattern Analysis:** Audio pattern recording and algorithmic comparison methods
- **Multi-Modal Verification:** Combined biometric approaches to minimize fraud probability
- **Cryptographic Hashing:** Biometric data transformation to mathematical representations using SHA-1 algorithms
- **Distributed Storage:** Elimination of centralized biometric databases through network-distributed hash storage

4.3 Libertarian Principles

This biometric-only approach embodies core libertarian values:

- **Government Independence:** No reliance on state-issued documentation or official recognition
- **Individual Sovereignty:** Every human controls access to their biological identity
- **Privacy Protection:** Raw biometric data never stored, only mathematical representations
- **Network Verification:** No central authority controls identity validation
- **Universal Access:** System accessible to any human regardless of political status

4.4 Egalitarian Implementation

The biometric verification process ensures true equality:

1. **Biometric Capture:** User provides facial photograph, fingerprint scan, and voice sample through internet-connected computer
2. **Basic Verification:** Algorithms confirm human biometric patterns, preventing simple fraud
3. **Uniqueness Analysis:** Mathematical comparison against existing biometric hashes to prevent duplicates
4. **Privacy Protection:** Original biometric data destroyed after hash generation, only cryptographic fingerprint retained
5. **Manual Review:** Initial verification process includes human oversight for quality control
6. **Token Issuance:** Upon successful verification, 1 ANKH token (valued at \$2.7M USD) issued to user's digital wallet

4.5 Technical Innovation

ANKH's identity system builds on existing research:

- **Pattern Matching:** Computer algorithms for basic pattern comparison (experimental accuracy)
- **Cryptographic Privacy:** Hash functions protecting individual privacy while enabling verification
- **Network Processing:** Verification processing across multiple network participants
- **Fraud Prevention:** Basic checks against simple fraud attempts
- **Future Development:** System designed for improvement as biometric technology advances

5. Cryptographic Chain Architecture

5.1 Revolutionary Data Structure

We propose a novel approach to digital record-keeping that would eliminate the need for trusted intermediaries through a cryptographic database system. This system would link together what we term a "blockchain" of transaction data using cryptographic hash functions, creating a tamper-resistant historical record that no single party could alter.

Key innovations of this cryptographic approach:

- **Cryptographic Linking:** Each record contains a hash of the previous record, creating a tamper-resistant chain
- **Peer Validation:** Network participants collectively validate transactions without central authority
- **Tamper-Resistant Records:** Once recorded, transactions would be computationally difficult to alter
- **Peer-to-Peer Network:** Direct value transfer between parties without intermediaries
- **Distributed Verification:** Participants can verify transaction history

5.2 Network Validation Protocol

ANKH implements a validation system designed for broad participation:

- Computational challenge algorithm accessible to standard personal computers
- Cryptographic puzzles preventing centralization of validation power
- Adaptive difficulty maintains consistent validation intervals
- Open participation - any computer can join the validation network
- Distributed consensus mechanism ensures network agreement

5.3 Transaction Structure

Each ANKH transaction contains the following cryptographically secured elements:

- **Sender Public Key:** Cryptographic address identifying the sender
- **Recipient Address:** Destination for the transferred value
- **Amount:** Precise ANKH value with 18-decimal precision
- **Digital Signature:** Cryptographic proof of ownership and authorization
- **Timestamp:** Universal coordinated time of transaction creation
- **Transaction Hash:** Unique fingerprint preventing duplication

5.4 Record Architecture

Each record in the chain contains:

- **Record Header:** Metadata including timestamp and validation parameters
- **Transaction Hash:** Cryptographic summary of all transactions in the record
- **Previous Record Hash:** Link to the preceding record in the chain
- **Challenge Solution:** Variable number used in computational validation
- **Transaction List:** Complete record of all verified ANKH transfers
- **Validation Reward:** Newly issued ANKH for identity verification participants

5.5 Double-Spending Prevention

This distributed ledger architecture solves the fundamental problem of digital cash - preventing the same digital asset from being spent multiple times:

- Network consensus validates each transaction against the complete historical ledger
- Attempts to spend the same ANKH twice are rejected by the majority of network participants
- Transaction finality achieved through computational validation
- No trusted third party required to prevent fraud

6. Universal Basic Wealth Distribution

6.1 Single Coin Issuance

Upon successful identity verification, each user receives exactly 1 Ankh valued at their regional lifetime income potential. This issuance is:

- One-time only per verified identity (lifetime allocation)

- Valued at \$2.7 million USD based on OECD lifetime earning averages
- Automatic upon verification approval
- Divisible with fractional precision to 8 decimal places
- Recorded permanently on the cryptographic chain with timestamp
- Includes inheritance and generational transfer rights

6.2 Economic Model

Total supply represents the economic value of human potential:

- Maximum supply: 9 billion people $\times$ 1 ANKH = 9 billion ANKH tokens
- Total economic value: \$24.3 quadrillion USD (9B $\times$ \$2.7M)
- Current circulating supply: verified users $\times$ 1 ANKH
- New coins only issued through identity verification
- Fractional trading enables everyday transactions
- Population cap based on UN demographic projections for maximum sustainable global population
- Each ANKH represents complete lifetime earning potential: \$2.7M USD per verified individual

6.3 Value Stabilization

- OECD data provides stable baseline for coin valuation
- Regional adjustments based on local economic conditions
- Periodic revaluation aligned with global income growth
- Economic utility and scarcity maintain value stability

6.4 Anti-Gaming Measures

- Multi-modal biometric duplicate detection across all registered users
- Multi-factor verification preventing simple fraud attempts
- Algorithmic improvements enhancing security over time
- Distributed verification eliminating single points of failure
- Cryptographic proof of uniqueness without exposing personal data
- Permanent biometric fingerprint ban for fraudulent attempts
- No reliance on corruptible government databases or documentation

7. Future Economic Integration

7.1 Traditional Financial Integration

Ankh is designed for eventual integration with existing financial systems:

- **Banking Systems:** Secure interfaces with traditional bank accounts
- **Payment Processors:** Integration with credit card and payment networks
- **International Transfer:** Direct transfers between different national currencies

7.2 Merchant Adoption

Facilitating real-world economic use:

- Simple point-of-sale integration for businesses
- Automatic conversion to local currencies
- Transparent transaction histories for accounting
- Low-fee micro-transactions for everyday purchases

7.3 Built-in Exchange System

Internal trading features:

- Direct Ankh-to-currency exchange mechanisms
- Transparent pricing based on economic fundamentals
- Low trading fees (0.3%) to maintain accessibility
- Stability mechanisms to prevent speculation

8. Security Considerations

8.1 Biometric Privacy Protection

- Raw biometric data immediately destroyed after hash generation
- Irreversible cryptographic hashing prevents reconstruction of original biometrics
- Zero-knowledge proofs enable verification without exposing identity data
- Distributed storage prevents central biometric database creation
- No government documents collected, processed, or stored
- Mathematical fingerprints only, no recoverable personal information

8.2 Network Security

- SHA-1 cryptographic hashing with SHA-256 for critical operations
- RSA-2048 digital signatures
- Regular security audits by cryptographic experts
- Peer review of cryptographic implementation

8.3 Multi-Signature Wallets

- Enterprise-grade multi-sig support
- Configurable signature requirements
- Time-locked transactions
- Secure key management

9. Governance Model

9.1 Decentralized Governance

Ankh uses a democratic governance model:

- One verified user = one vote
- Proposals for network upgrades
- Transparent voting process
- Supermajority required for major changes

9.2 Proposal System

- Any verified user can submit proposals
- Minimum stake requirement to prevent spam
- Community discussion period
- Formal voting with results on-chain

10. Economic Model

10.1 Economic Fundamentals

- Each ANKH token represents \$2.7M USD in verified lifetime earning potential
- Fractional transactions enable daily use (0.001 ANKH = approximately \$2,700 USD)
- Supply cap of 9 billion coins (1 per human) ensures absolute scarcity
- Value backed by collective human economic output and lifetime productivity

- Population-based cap prevents inflation while ensuring universal access
- Economic model eliminates wealth inequality through technological distribution mechanism

10.2 Transaction Economics

- Minimal transaction fees to prevent network abuse (approximately 0.001 ANKH)
- Fees distributed to network validators and infrastructure
- Dynamic fee adjustment based on network load
- Fee burning mechanism maintains token value over time

10.3 Wealth Distribution Impact

- Eliminates birth-based wealth inequality through universal distribution
- Provides immediate access to generational wealth for all verified humans
- Enables global economic participation regardless of geographic location
- Creates stable foundation for entrepreneurship and innovation

10.4 Value Proposition

- Revolutionary wealth redistribution eliminating global poverty
- OECD-backed valuation provides economic stability
- Economic integration ensures universal acceptance
- Fractional precision enables both microtransactions and major purchases
- Inheritance mechanisms preserve wealth across generations

11. Implementation Timeline

Phase 1: Research & Development (2006-2010)

- Core cryptographic chain development
- Identity verification system research
- Small-scale prototype testing
- Basic software interface development

Phase 2: Early Implementation (2011-2015)

- Network protocol improvements
- Computer-based wallet software
- Limited user testing and feedback
- Academic community review and refinement

Phase 3: Technology Maturation (2016-2020)

- Improved biometric verification methods
- Basic economic integration research
- Expanded user base for testing
- Policy and regulatory framework development

Phase 4: Broader Deployment (2021-2030)

- Integration with existing financial systems
- Merchant and business adoption tools
- Large-scale wealth distribution implementation
- Economic equality pilot programs

12. Economic Viability Analysis

12.1 Inflation Control Through Finite Distribution

The \$24.3 quadrillion total supply represents the complete lifetime economic value of all humans. This finite approach prevents inflation through several mechanisms:

- **Gradual Release:** Tokens only issued upon biometric verification over 50+ years
- **Existing Value Recognition:** Represents productivity humans would generate anyway, distributed upfront
- **Fractional Usage:** Daily transactions use small fractions (0.001 ANKH = \$2,700)
- **Velocity Controls:** Practical spending limits prevent instant liquidation of full \$2.7M allocations

12.2 Why This Won't Cause Economic Chaos

Unlike traditional money printing, ANKH redistributes the *timing* of wealth access rather than creating artificial value:

- **Pre-distribution Model:** People receive future lifetime earnings immediately for optimal allocation
- **Maximum Inequality Cap:** Gap between richest and poorest cannot exceed 1 ANKH (perfect starting equality)
- **Economic Efficiency:** Capital allocation becomes merit-based rather than inheritance-based
- **Innovation Catalyst:** Universal access to investment capital drives technological advancement

12.3 Built-in Economic Stabilizers

- **OECD Data Anchoring:** Value tied to real productivity statistics across developed nations
- **Population Cap:** 9 billion maximum tokens prevents infinite monetary expansion
- **Biometric Fraud Prevention:** One person = one token eliminates duplicate wealth claims
- **Market-Driven Discovery:** Fractional trading enables natural price equilibrium
- **Democratic Governance:** Network changes require verified user consensus

12.4 Historical Precedent for Success

The Alaska Permanent Fund has successfully distributed resource-based dividends since 1982 without economic collapse. ANKH scales this concept globally using human productivity as the underlying asset rather than oil reserves.

12.5 Transformation vs. Destruction

ANKH eliminates survival-based economic inefficiencies by providing universal access to lifetime wealth upfront. This radical approach succeeds precisely because it's finite, everyone receives their complete economic potential once, eliminating the need for ongoing redistribution, welfare systems, or wealth inequality debates.

13. Conclusion

The ANKH proposal represents a potential alternative currency mechanism that could serve as a foundation for substantial wealth distribution and reduction of global economic inequality. Through ensuring every verified individual receives one unit representing their lifetime earning potential (approximately \$2.7 million USD), this system might create greater economic equality from the point of verification.

Based on OECD economic data and utilizing proposed cryptographic database technology, the ANKH system would provide substantial upfront wealth allocation rather than traditional income support mechanisms. The proposed identity verification system would attempt to prevent fraud while protecting individual privacy through established cryptographic protocols (Goldwasser et al., 1985).

This proposal represents potential financial innovation that could address economic distribution on a global scale. The underlying principle suggests that individuals might deserve access to wealth representing their statistical lifetime economic contribution. ANKH would attempt to implement this concept through novel cryptographic database architecture and identity verification protocols.

As computer networks mature and internet connectivity expands (Castells, 1996), ANKH could serve as a foundation for economic systems where poverty is reduced not through traditional redistribution, but through technological recognition of every human's economic potential.

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Acknowledgments

We thank the University of Chicago Economics Department for research support. Special appreciation to the Applied Microeconomics Workshop participants for valuable feedback on earlier versions of this proposal.