African Digital Asset Framework

Peoples-driven Standards for Distributed Pan-African Economies

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Abstract

Open source standards for digital assets and distributed ledgers can support the growth of distributed Pan-African economies. Securely digitized assets remove barriers between *peoples* to securely access and transfer items of value like currency, identities, land titles and votes anywhere around the world. These digital assets carry unprecedented opportunities to create digital trade networks for commerce throughout the continent and among its diaspora. The potential for these Pan-African economies will depend on the standards, policies and frameworks that govern these new technologies. There is a need for a constantly evolving and accessible platform for communities of *peoples* to create standards for digital assets that support the growth of distributed Pan-African economies[4]. We propose the African Digital Asset Framework, the first open source platform to create transnational standards for digital assets and distributed ledger technologies. ADAF is an open repository of standards that encourage self-regulation for how digital assets and distributed ledger technologies are created, used, transacted and managed by policymakers, consumers, entrepreneurs and civil society. Standards can be presented, discussed, edited, and implemented with the goal of encouraging digital asset ownership and value exchange in line with Pan-African sustainable development objectives. The project exists to complement regional economic integration tools for trade and commerce within the continent and among its diaspora.

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Peoples-Driven Standards for Distributed Pan-African Economies

Introduction

Pan- Africanism is an ideology born to economically and socially unite all *peoples* of Africa, regardless of origin. At its core, Pan-African thought is "a belief that African peoples, both on the continent and in the diaspora, share not merely a common history, but a common destiny"[6]. These ideologies laid the foundation for the African Union ("**AU**") and its objectives to create economic prosperity for all *peoples* of Africa around the world.

It is within this context that this paper proposes a project called the African Digital Asset Framework ("**ADAF**"), the first *open source* software platform to create transnational standards for digital assets and distributed ledger technologies ("**DLTs**") in line with Pan-African development objectives. Digital assets are creating a secure way for *peoples*[8] to trade across borders in peer-to-peer ("**P2P**") driven economies. The continent's rapid industrialization and digitized economy present a unique opportunity to remove barriers to commerce within the continent and between its diaspora. The platform will act as an open repository of technological and regulatory standards to encourage the responsible creation, use, exchange and management of digital economies by *peoples*, consumers, civil society, entrepreneurs, and policymakers. Standards can be presented, discussed, supported, edited, and implemented in line with sustainable development objectives of the African Union and similar regional organizations. Standards can be created and used by *peoples*, customized by states and built to facilitate Pan-African trade.

ADAF exists to support the growth of DLTs and digital assets that forge regional and cross-border trade networks between *peoples* of Africa and its diaspora. This paper refers to these networks as a distributed Pan-African economy ("**DPA**"). The opportunity for DPAs is described throughout this paper alongside the need for an open source platform like ADAF for *peoples* to create and maintain Pan-African standards for DLTs and digital assets. DLTs facilitate the secure exchange of digital assets across borders. They ease barriers to cross border trade and can build digital bridges for economic, intellectual, social and cultural exchange between the *peoples* of Africa in the diaspora. Secure and digital cross-border trade opens unprecedented technological opportunities for Pan-African commerce. These technologies are rapidly evolving and exist across national borders. There is a need for accessible and constantly updated standards for *peoples* to drive the creation of transnational standards for digital economies.

Executive Summary

The paper is presented in three major sections summarized below:

1) <u>Section 1: Digital Trade Networks</u>

    a) DPAs can be built with regional tools for economic integration under the constitutive documents of the AU. The tools for digital trade networks within the continent and between its diaspora already exist and are in line with trade patterns in the global political economy. This section presents three patterns that demonstrate DPAs' opportunity to build digitized trade networks between *peoples* of Africa. The continent's rising regional trade networks are growing alongside mainstream advances in distributed ledger technologies.

        i) **Regional Trade** - Regional trade blocs are growing. Delays in the World Trade Organization's ("**WTO**") latest multilateral trade negotiations are encouraging the growth of regional trade blocs;

        ii) **Africa's Role in Global Trade -** The African continent is leading regional trade in the 21st century with a membership in its first Mega-RTA alongside Brazil, Russia, India, China and South Africa ("**BRICS**"), the signing of its own regional trade area agreement and its project for a Pan-African digital trade network; and

        iii) **DPAs as Digital Trade Networks -** Digital single markets will be built with DLTs and digital assets. They can facilitate trade between *peoples* in DPAs for Pan-African sustainable development. DPAs can lean on the AU's constitutive tools for regional integration to create digital trade networks.

2) <u>Section 2: Distributed Pan-African Economies</u>

    a) This section describes the three building blocks of DPAs. The African continent is in a unique time in its history; it is experiencing the simultaneous effects of both a Third Industrial Revolution ("**3IR**")[10] and Fourth Industrial Revolution ("**4IR**"). Digitized trade networks and DLTs will encourage further regional integration and ease the financial, technological and regulatory barriers to trade. DPAs are digital trade networks and can build bridges between an already active diaspora market. DLTs and digital assets can build bridges for DPAs and digital trade networks and will need open sourced standards to create them:

        i) **Economic engine -** The continent can act as an economic engine for DPAs in a digital world. The effects of a 3IR, increased regional trade, Belt Road Initiative ("**BRI**"), and air, maritime and road transportation infrastructure are awakening intra-continental trade. Alongside her industrialization, the continent's digital economy is poised to extend the benefits of intra-continental trade and leapfrog in the 4IR with its growing mobile usage and population growth;

        ii) **Digital bridges -** DLTs and digital assets can create digital bridges for an already active diaspora to engage in trade and commerce within the continent and between its communities. DLTs and digital assets are the foundation of the 4IR and will accelerate intra-continental trade, unlock capital and build peer-to-peer ("**P2P**") economies. DPAs will be characterized by digital assets, DLTs and P2P

trade. There is an opportunity for cross-border and *peoples*-driven standards that harmonize transnational digital asset standards for Pan-African development;

iii) ***Peoples*-driven standards** - DPAs will depend on the technological and regulatory standards that create and sustain DLTs and digital assets. These standards need to encourage compatibility across borders for P2P trade and are built with open source software:

(1) DLTs and digital assets present novel regulatory challenges to policymakers and their regulations need to be supplemented by customizable soft law and self-regulation;

(2) These novel issues are an opportunity to calibrate transnational approaches with open source standards in line with Pan-African development objectives;

(3) Open source communities are people-driven and can emulate principles for the rule of law including access, accountability, equality, equity, integrity, participation and transparency in line with DPAs;

(4) Open sourced standards are are accessible, constantly updated, encourage, self-regulation, protect consumers and create transparent community-driven standards for the digital economy; and

(5) Open regulatory and technological standards can complement existing policy approaches.

3) <u>Section 3: The African Digital Asset Framework</u>

a) This section introduces the ADAF project and its components under development: including how and why it works, opportunities and weaknesses and a brief description of a use case:

i) **Project** - the descriptions, standards, sectors and the organization's role and values are defined;

ii) **Process** - process for submitting and creating a standard and descriptions of the platform and development plans;

iii) **Improvements** - strength and weaknesses of the project;

iv) **Open Standards for DPAs** - summarizes the relationship between ADAF and DPAs;

v) **Pan-African Digital Identity** - we propose a call to action to the community to pilot standards for digital assets and present a potential use case for digital identity standards for Pan-African development.

African Digital Asset Framework

ADAF exists to forge Pan-African trade through DPAs. This section summarizes the objectives, process, governance model and the strengths and weakness of ADAF. The project is building an OSO platform for communities to create technological and regulatory infrastructure for P2P-driven digital economies. ADAF is an open source platform that can be used to create standards for all kinds of technologies. The

initial versions of the ADAF platform will focus on standards for DLTs and digital assets as one of the primary driving forces for DPAs. The decision to focus on these technologies is informed by the urgency to prevent fragmented and permanent rules across states, as well as the opportunity to create *peoples*-driven standards. We propose that ADAF can serve as the infrastructure for standards for the SADM and provide the backbone for the continent's development in a digital age. The ADAF project is iterative and will evolve with contributions from the Pan-African community on its development.

The Project

ADAF's platform is structured to enable accessible and dynamic changes in standards for a digital economy. The ADAF platform and process will work similarly to Github, a distributed and open space for developers to propose and edit code. The ADAF model is built around digital asset standards and DLTs, and will be scalable to incorporate all kinds of resources for a Pan-African digital economy. The ADAF platform will display three categories of information: 1) Standards - technological (software code) and regulatory (policy) proposals for different sectors; 2) Data - open data on standards and Pan-African sustainable development objectives; and 3) Thought Leadership - articles, information, opinions and research on digital Pan-African economies.

The ADAF platform aims to offer a multilingual space for *peoples* to propose solutions, actions, and standards of self-regulation in line with developments in the digital asset and DLTs space. Individuals, civil society, entrepreneurs, and policymakers will be able to access an ADAF platform and submit standards in an open environment. ADAF's open source community will prioritize collective creation and ownership of intellectual property and associated rights. Open innovation refers to co-created ideas, concepts and designs or to inviting the contribution of ideas (crowdsourcing is one example).

Anyone is encouraged to write, edit, and propose standards. The ADAF platform and model is extendable to all kinds of technologies in Africa's digital economies and the 4IR, including drone technologies, IoT, AI, energy efficiency, big data, and agritech.

African Digital Asset Foundation

Role

ADAF's platform is provided through an open source license maintained by a trust called the African Digital Asset Foundation ("**Foundation**"). The Foundation will be comprised of a Pan-African team and network of community organizations. The structure is comprised of a core team, advisors and ambassadors that will support the community with research on Pan-African economic and social tools. ADAF's research team will support the community with research on Pan-African economic and social tools under the AU and regional organizations, openly accessible data and sourced thought leadership. The project also aims to offer translation services for standards submitted on the ADAF platform. Research and data will be used to inform standards created by ADAF platform users, and will abide by principles of openness and transparency.

The team's role will be to maintain an active community and provide research and development on Pan-African sustainable development objectives for standards contributed to the community. The ADAF platform's success metrics will be measured against sustainable development objectives under the AU's Agenda 2063, the UNSDGs, and national development plans in member states. The ADAFoundation team and community will work directly with regulators, policymakers, and communities to implement standards created through the platform.

Product

Contributions

Contributions are encouraged from partners and the community, and are categorized by standard and sector. The community is encouraged to share standards that facilitate trade across DPAs. Standards can be contributed in the following categories:

- **Standards** - these are technological and regulatory standards for the digital economy:
    - **Technological** - these standards are composed of codes, commits and branches for the digital economy. For example, partners can contribute smart contract protocols for decentralized applications that can be edited and commented on by the community;
    - **Regulatory -** policies, compliance standards, legal templates/contracts and open source information on regulatory approaches can be submitted.
- **Open data -** ADAF will support contributions for open data on the digital economy to support data-driven decisions and technologies for social good; and
- **Thought leadership -** communities are encouraged to share scholarly articles, research and content on Pan-African digital economies from around the world.

ADAF for Distributed Pan-African Economies

ADAF's open source approach to actualize DPAs and digital Pan-African economies can encourage community-driven approaches to policy making. For the first time, *peoples* can be involved in creating standards in line with P2P trade and their own cultural, social and historical contexts. The platform empowers *peoples* to create community-driven standards that can drive the continent and its *peoples*' into a digital trade network that stretches across the globe. We have presented that these regional trade networks across common peoples can be referred to as DPAs. The tools for DPAs exist, but need to be supported by open sourced standards for the digital economies that create it. Fundamental to DPAs, however, will be the freedom of movement for *peoples* across borders.

We propose to the community and readers that one of the most important and first standards that needs to be developed for DPAs and is a Pan-African digital identity built with DLT software protocols.

Use Case: Pan-African Digital Identity and the AU Passport

Pan-African Digital Identity

DLT-based digital identities can ease freedom of movement among *peoples* within the continent and among the diaspora. This identity solution can be built as DLT software protocols that empower *peoples* to own, edit and transfer their identities together with government registries. A Pan-African digital identity solution will need software protocols that are built to capture the data on uniquely diverse *peoples* of African descent: tribal histories, diaspora migrant patterns, genomic research on slave names among the African diaspora, migrant communities, linguistic histories, pre-Scramble for Africa geo-mapping and jurisdiction-specific immigration legislation.

This solution could be created through *peoples*-driven standards on an open sourced platform and enable regulators and community participants to travel across their borders seamlessly. For example, an Afro-Caribbean person could use this identity solution to travel and trade throughout Togo, as easily as an Angolan can in South Africa. In addition to its clear benefits to freedom of movement for DPAs, there is an urgent need for a pan-African digital identity to support and intra-continental trade.

At the AfCFTA signing in Kigali, the Movement Protocol was the least supported text signed by AU member states. For a true inra-continental market, all member states of the AU would need to sign the Movement Protocol and commit to its roadmap to ease border restrictions for Africans. The AfCFTA Agreement was originally signed with 50 states present alongside two other legal instruments: *Kigali Declaration* ("**Declaration**") and the Movement Protocol. The central AfCFTA text was signed by 40 states, the Declaration by 44 states and the Movement Protocol by only 30 states. AfCFTA's economic impact will be limited without cross-continental consensus on border restrictions. More than half of the signatories that did not sign the Movement Protocol were Francophone countries, as of March 2018. There is a need for movement protocol infrastructure that allows countries and *peoples* of diverse backgrounds to customize their own identity solutions without compromising regional movement.

Pan-African built, open and jurisdiction-agnostic standards can be created and widely used by companies and *peoples*. Governments can then use and customize these standards to create jurisdiction-specific identity systems. Those standards are built for compatibility between states and their customized identity management systems. This could eventually facilitate jurisdiction-agnostic travel and *free* movement of *peoples*, goods and services across borders. The political will for the Movement Protocol represents an opportunity to create a pan-African DLT-based digital identity that can be used by *peoples*, customized by states and built to facilitate intra-continental trade. Open source digital identity standards can support the AfCFTA, DPAs and the Movement Protocol.

Peoples-Driven Digital Identity

There is an urgent need for a digital identity to support intra-continental trade. This is a call to the community to develop those applications in accordance with Pan-African standards and development

objectives. A digital identity will require Pan-African and open sourced technological and regulatory standards, data and thought leadership. Identity and culture is a central aspect of any *peoples* of African descent. As such, it should be developed by *peoples* in partnership with regional organizations and governments. The first versions of the platform will lend resources and information that will facilitate the creation of a Pan-African digital identity by the community.

Digital Identities and an African Passport

Digital identities could ease burdensome infrastructure for paper-based and bureaucratic immigration systems, policymakers can transparently identify fraud, empower *peoples* to own their own identities and access global markets. The benefits of a digital identity are central to DPAs and trade across borders. Currently, Africans have to acquire visas to travel to most African countries, inhibiting travel across borders for people, goods and services. The existing regulatory approach also prevents African people from owning their own identity. A self-sovereign digital identity standard could empower *peoples* to own their own data together with their government and facilitate the movement of *peoples* across borders. These digital identity standards can be built alongside the AU's Passport initiatives.

The AU recently launched the African Union Passport ("**AU Passport**") that aims to launch in 2020. The project does not currently list any plans to build the AU Passport using digital asset or DLTs. However, it will need to build using these technologies for digital identity to be interoperable with other e-governments' identity systems around the world, like Estonia. This represents an opportunity for the ADAF community to create a *peoples*-driven and Pan-African digital identity standard that can complement the goals of the AU Passport in time for its launch in 2020. It is imperative that DLTs be used to not only allow the safekeeping of the holders' private information, but also to increase efficiency in verification of travel documents in a seamless, interoperable manner that captures the distinct complexities of various African *peoples*. It is equally important that the standards for implementation of a digital identity be informed by these *peoples*.

A common passport built with DLTs and digital assets through community-driven standards can provide for digital autonomy, ownership, security and for seamless movement of peoples within the continent and among its diaspora. A digital identity that facilitates the seamless movement of an Algerian national to South Africa and of a Barbadian national of Ghanaian ancestry to West African states is long overdue.

Conclusion: United We Stand

DPAs could transform economic prosperity for *peoples* of Africa. This paper presents an argument for the unique opportunities available to the continent and its diaspora. We propose ADAF as a community-driven project that can create the necessary technological and regulatory standards for DPAs to complement public-sector regulations. These standards can encourage P2P networks of trade and commerce in line with Pan-African sustainable development objectives. ADAF's current governance model is a distributed, collaborative ecosystem of organizations and individuals in the Pan-African digital economy that are willing and ready to cooperate and create standards. ADAF's model emulates tenets of

open standard principles and is based on values such as fluidity, openness, transparency and linking of organizations. The project is built to support the continent and diaspora's adaptation to impending technological disruptions. ADAF is forged with the opportunity to redefine a Pan-African narrative and finally remove trade barriers between African *peoples* for self-determination, autonomy and communal sharing.

It is our time to realise the dream Pan-African unity espoused by our ancestors forefathers and to create the future our *peoples* deserve.