IMPACTVEST

Trailblazing Transparency:

Transforming Impact Investment through AI and Blockchain

(Version Available to the General Public)

PRODUCED IN COLLABORATION WITH CRITICAL FUTURE

(Investor Version Available Exclusively for ImpactVest Investors)

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EXECUTIVE SUMMARY

In the rapidly evolving landscape of impact investing, the financial services industry is at a pivotal juncture where the need for a standardised, reliable method of quantifying social impact is more pronounced than ever. This whitepaper outlines a revolutionary approach that integrates Artificial Intelligence (AI) and blockchain technology to measure and compare social impact of investments. By addressing this broader challenge, the initiative contributes to the overarching goal of fostering transparency and accountability in evaluating the societal consequences of financial activities. By embracing this innovative approach, stakeholders can look forward to a future where investment decisions are as much about societal impact as they are about financial returns, leading to a more inclusive and sustainable world.

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Aisha Williams
Founder and CEO
ImpactVest

At the midpoint of our journey toward the 2030 Agenda, a comprehensive evaluation of Sustainable Development Goal (SDG) progress reveals a landscape hindered by a myriad of challenges. According to the UN SDG Progress Report 2023, a mere 15 percent of assessable targets are projected to be achieved by 2030, and nearly half of them deviate significantly from their intended trajectory. Urgent action is imperative to realign the SDGs with the fundamental principles that underpin them and ensure we stay on track to meet our ambitious global targets.

Amidst these challenges, we stand at a crucial juncture. The need for a universally standardised method to quantify, verify, and measure impact, taking into account the interconnected nature of the SDGs, is more urgent than ever. In response, this whitepaper presents an innovative solution that harnesses the power of Artificial Intelligence (AI) and blockchain technology to catalyse synergies between SDG targets, recognising that progress in one SDG target can significantly boost and advance progress in another.

By embracing this pioneering systemic approach to realign the SDGs through the technological catalysation of impact measurement and verification, a promise of reshaping the future of impact capital is well within reach. Envisioning a future where prioritising positive environmental and societal impact takes centre stage through the transformative power of catalysing synergies between SDG targets is crucial for achieving long-lasting, sustainable outcomes in an inclusive and equitable future.

FORWARD

Tonya Love-Lamorte
Managing Director
ImpactVest Alliance

We are at a pivotal moment in financial markets, punctuated by technological advances inspiring and reshaping the impact investing landscape. This whitepaper explores a standardised and reliable methodology to quantify social and environmental investment impacts. Leveraging advanced technologies such as Artificial Intelligence (AI) and blockchain, we can attain a level of transparency and accountability to evaluate sustainability impact. These innovative approaches augment traditional views on financial returns and social and environmental impact investments alike.

The current landscape of impact measurement comprises of varied metrics and frameworks, which all offer unique perspectives. A standardised approach enables the basis for performance comparisons, sustainability impacts, and increased transparency, critical for decision making. It underscores and streamlines meaningful measurement alignment across multiple entities, and readily lends itself to a more inclusive environment.

We are evolving the scope of impact measurement and illuminating systemic barriers and countering challenges to foster greater inclusivity. We are planting seeds of opportunities, that with nurturing has the potential to achieve great outcomes. Our aim is to ignite your creative thinking, to build momentum towards innovative solutions. Today's choices can shape a more sustainable and inclusive world. Let us join forces to construct a brighter tomorrow - together.

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The Urgency of a Unified Impact Measurement Standard

In a world engaged in a race against time to achieve the United Nations Sustainable Development Goals (SDGs) by 2030, a stark reality is evident: a funding deficit of $4.2 trillion.[1] This shortfall not only signifies the colossal capital necessary to address climate change and other pressing global issues, but it also underscores a pivotal challenge in impact investing—the lack of a standardised methodology for quantifying social impact.

Presently, the landscape of impact measurement is a complex tapestry of various methodologies, encompassing numerous standards and frameworks. This diversity, reflective of the intricate nature of the field, creates a convoluted environment for investors. They navigate through a multitude of metrics, each offering a unique perspective, yet without a universally acknowledged standard for measuring social impact. This lack of standardisation gives rise to two critical challenges: the difficulty in comparing across different investments and a barrier to comprehending the tangible effects of these investments. This absence of a standardised approach poses broader issues in understanding and evaluating the societal consequences of diverse financial activities.

A universal standard is essential for several reasons on a broader scale. Firstly, it provides clarity and comparability, crucial for investors seeking to align their portfolios with broader social and environmental values. Secondly, a consolidated standard has the potential to significantly enhance the efficiency and effectiveness of capital allocation toward SDG-related initiatives. Ensuring that investors can comprehend the tangible impact of their investments not only encourages further investment in these critical areas but also takes a substantial step toward achieving the objectives set for 2030.

Moreover, the absence of a unified standard poses challenges to the scalability of impact investing. Prospective investors, unable to decipher the true impact of their investments, might hesitate to commit the substantial funds required to address the SDG financing gap.

1 Felipe, L. (2023) "Halfway to 2030, world 'nowhere near' reaching Global Goals, UN warns." UN News, 17 July. https://news.un.org/en/story/2023/07/1138777.

This hesitancy undermines the global pursuit of forging a sustainable and equitable future. The establishment of a universal standard becomes pivotal in fostering transparency and confidence, enabling more significant contributions to global sustainability efforts.

Addressing this issue is not merely about enhancing financial returns; it is about orchestrating a symphony of efforts where capital flows are harmonised with the global agenda for sustainable development. It's about sculpting a world where investments are not just profitable, but purposeful. The solution resides in transcending the cacophony of existing metrics to establish a lucid, coherent, and comprehensive standard for measuring social impact—a standard that encapsulates the nuances of impact investing yet remains accessible and actionable for investors globally.

In essence, the heart of the challenge is to carve a pathway where financial investments and social impacts are not just aligned, but are also quantifiable in a manner that is universally comprehensible and actionable. This is the inaugural step towards a future where every investment made contributes significantly to the global mission of creating a sustainable, equitable, and thriving planet.

What Could Happen if We Fail to Meet the SDGs?

Not achieving the Sustainable Development Goals (SDGs) could precipitate a cascade of catastrophic outcomes:

Climate emergency: pushing our planet past the point of no return in the climate crisis, and plunging global societies into deep jeopardy. The failure to limit global warming could lead to irreversible damage to ecosystems, extreme weather events, and a significant rise in sea levels, threatening millions of lives and livelihoods. For instance, without action to meet the SDGs, greenhouse gas concentrations continue to rise, propelling the global average temperature dangerously close to the 1.5°C threshold beyond which scientists predict severe and widespread disasters.

Inequalities: Moreover, the interconnectedness of these goals means that the fallout from unmet climate targets exacerbates other crises. Inequalities between and within countries are likely to widen dramatically, as vulnerable populations—already bearing the brunt of economic and health disparities—face increased risks from climate-induced food shortages, displacement, and health emergencies.

Health: The COVID-19 pandemic has already reversed decades of progress on poverty and hunger, pushing an estimated 119-124 million people back into poverty and highlighting the devastating health impacts of global crises, which are set to worsen without steadfast progress on the SDGs.

The stark data and trends underscore a dire warning: failure to act collectively and urgently on the SDGs could not only derail efforts to build a sustainable future but also lead to an existential crisis for humanity and the planet.[2] This grim scenario underscores the absolute necessity of immediate, integrated action across all SDGs to avert an irreversible global catastrophe.

> *"Nobody could have foreseen, when the development reforms were put in place, that Country Teams would face such a challenging global environment."*
>
> *António Guterres* [3]

Measuring Progress Towards SDGs

Social Impact Key Indicators

To achieve the SDGs we first need to measure progress; "What gets measured gets managed" is a business truism often attributed to management guru Peter Drucker. The good news is we know what to measure; social, environmental, economic, and governance impacts. From social impact indicators such as job creation and workforce diversity, to environmental considerations like carbon emission reduction and energy efficiency improvements, each aspect plays a crucial role in assessing the overall impact. Economic indicators, including revenue growth and ROI, alongside governance and ethics indicators, further enrich this analysis.[4,5]

2 United Nations (2023) "World risks big misses across the Sustainable Development Goals unless measures to accelerate implementation are taken, UN warns". United Nations, 10 July. https://www.un.org/en/desa/world-risks-big-misses-across-sustainable-development-goals-unless-measures-accelerate.

3 UN News (2023) "UN 'determined' to end backsliding on development goals, Guterres tells ECOSOC", United Nations, 23 May. https://news.un.org/en/story/2023/05/1136957.

4 Kulakovskaya, A., Knoeri, C., Radke, F., and Blum, N. U. (2022) Measuring the Economic Impacts of a Circular Economy: an Evaluation of Indicators. *Circular Economy and Sustainability*, 3, 657-692. https://doi.org/10.1007/s43615-022-00190-w.

5 Alomoto, W., Niñerola, A. and Pié, L. (2022) Social Impact Assessment: A Systematic Review of Literature. *Social Indicators Research*, 161, 225-250. https://doi.org/10.1007/s11205-021-02809-1.

SOCIAL IMPACT INDICATORS	
Job Creation	• Measures the number of jobs generated or maintained by a project. • Relevance and necessity of jobs should be assessed to avoid inflating numbers. • Critical questions regarding job creation should be addressed, such as job relevancy and modernisation of processes.
Workforce Diversity and Inclusion	• Evaluates the representation of various ethnicities and genders in the workforce. • Should be considered in relation to the local demographic and target population.
Employee Satisfaction and Well-Being	• Quantifies employee satisfaction and contentment with their roles. • Subjective nature of this metric should be considered, and third-party surveys may be preferable.
Social Inclusion and Equity Measures	• Assess equal access to resources, services, education and employment, addressing societal disparities and barriers. • Key aspects include access, representation, support and empowerment.
Community Engagement and Shareholder Involvement	• Evaluates the level of engagement and collaboration with the local communities and stakeholders. • Quantitative metrics like "community partnerships established" can complement qualitative assessments.

Figure 1: Social Impact Indicators

ENVIRONMENTAL IMPACT INDICATORS	
Carbon Emission and Greenhouse Gas Reduction	• Measures the percentage change in carbon emissions and greenhouse gas levels. • Focuses on the effectiveness of reducing the carbon footprint and sustainability.
Energy Efficiency Improvements	• Quantifies consumption efficiency including energy intensity and technology adoption. • Evaluates the efficiency of energy management systems and technologies.
Renewable Energy Generation or Adoption	• Quantifies the incorporation of renewable energy sources. • Reflects energy independence and long-term economic benefits.
Water and Resource Conversion	• Evaluates the effectiveness in reducing water and resource consumption. • Considers factors like water utilisation, recycling rates and economic incentives.
Waste Management	• Quantifies waste management practices, diversion rates and recycling efforts. • Addresses environmental, regulatory and economic considerations.

Figure 2: Environmental Impact Indicators

ECONOMIC IMPACT INDICATORS	
Revenue, Growth and Profitability	• Measures historical or projected revenue, growth and profit margin. • Considers long-term impact sustainability and reach.
Return on Investment (ROI) and Financial Performance	• Analyses financial performance using ROI, return on assets (ROA) and return on equity (ROE). • Considers cash flow, underlying conditions and volatility in returns.
Social Return on Investment (SROI)	• Calculates the impact value relative to capital invested. • Involves assessing inputs, outputs, outcomes and impact, but must be interpreted carefully due to subjectivity.
Economic Value Added (EVA)	• Evaluates value generated for local communities, businesses and populations. • Considers factors like longevity, reach and economic output.
Value Chain Localisation and Supplier Diversity	• Assesses local sourcing, job creation and supplier diversity. • Measures the economic impact on local businesses and economies.
Support for Local Businesses and Entrepreneurs	• Measures partnerships with local businesses, access to financing and investments in local startups. • Focuses on supporting local economies and entrepreneurial activities.

Figure 3: Economic Impact Indicators

GOVERNANCE AND ETHICS INDICATORS	
Ethical Governance Practices	• Evaluates the ethical principles, code of conduct, policies and procedures governing the initiative. • Ensures adherence to regulations and standards.
Transparency and Accountability Measures	• Examines transparency and accountability in decision-making processes. • Considers mechanisms for reporting unethical behaviour and audits.
Human Rights and Labour Standards	• Assesses adherence to human rights and labour standards. • Focuses on compliance with local laws, regulations and international standards.
Board Diversity and Independence	• Measures diversity in board expertise and the absence of conflicts of interest. • Enhances decision-making and innovation within the project.

Figure 4: Governance and Ethics Indicators

These comprehensive indicators collectively assess the holistic impact of an investment, encompassing social, environmental, economic, and governance dimensions. They provide a well-rounded evaluation of how an investment contributes to the well-being of society, the environment, and local economies while upholding ethical standards and governance practices.

Challenges and Shortfalls

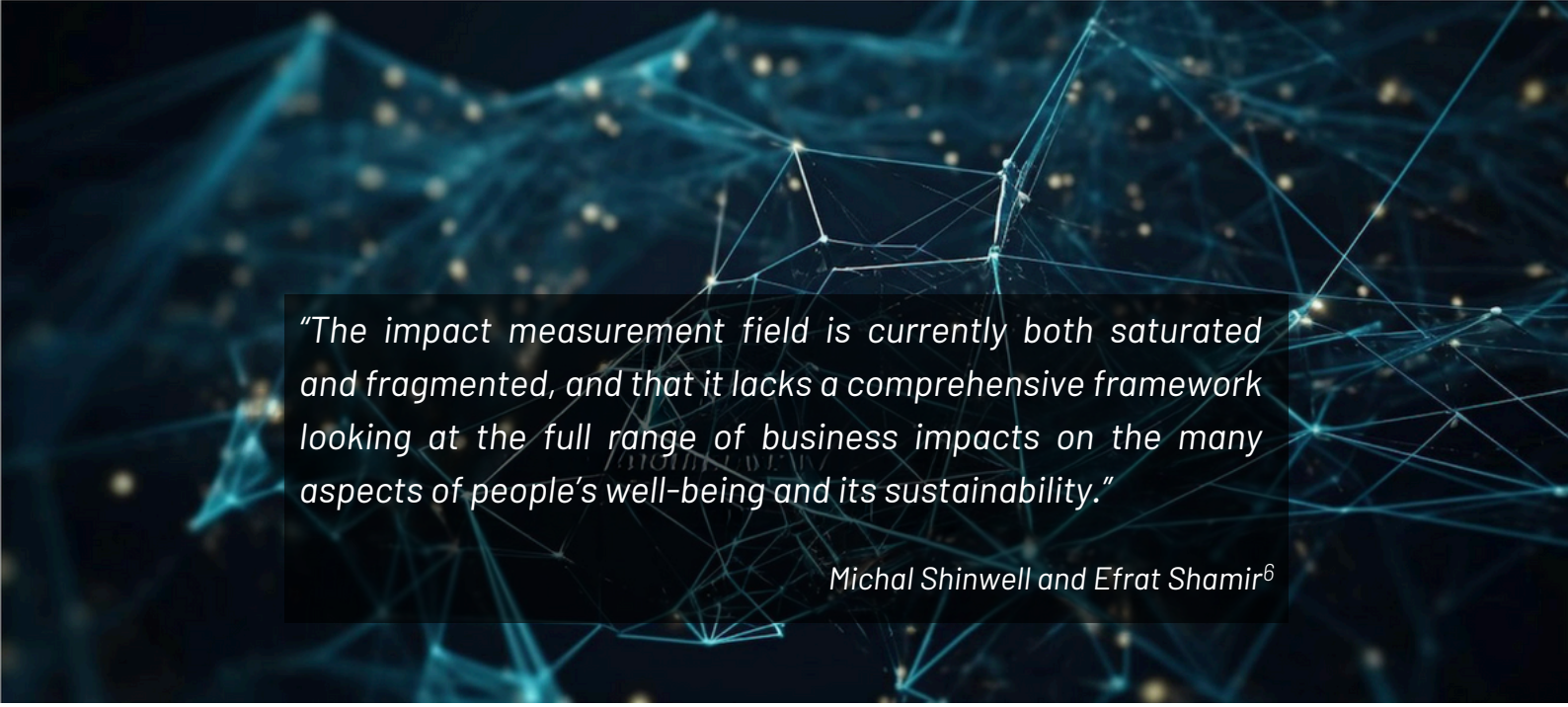
of Current Social Impact Measurement

However, while we may know what to measure, the challenge comes in the actual measuring. Issues with current social impact measurements are evident, characterised by a multitude of frameworks, each with its own distinct indicators and guidelines. This proliferation of frameworks poses significant hurdles in the realm of impact investing.

Here are some key points highlighting the challenges arising from the abundance of frameworks:

Key Challenge	Description
Complexity and Overwhelming Choices	The presence of numerous frameworks presents a complex landscape that can overwhelm both investors and organisations. Navigating this intricate web of options makes it challenging to select the most suitable framework for specific investment goals.
Fragmented Data	The use of diverse frameworks often results in fragmented data collection and reporting practices. Organisations find themselves reporting on different sets of indicators based on the framework in use, leading to difficulties in consolidating and comprehensively analysing impact data.
Inconsistency and Lack of Standardisation	The absence of standardised impact measurement metrics across these frameworks leads to inconsistent reporting. This lack of consistency poses challenges when comparing the impact of different investments, hindering the ability to make well-informed decisions and assess the effectiveness of impact investments.
Resource-Intensive Processes	Employing multiple frameworks demands significant resources from organisations. They must dedicate time and effort to understand and adhere to the requirements of each framework, resulting in inefficiencies and increased operational costs.
Customisation Challenges	Although the idea of tailoring frameworks to specific projects seems promising, determining the optimal combination of metrics and indicators can be a complex task for organisations. This complexity can lead to confusion and potential misalignment with the overarching impact goals.
Lack of a Unified Language	The absence of a common impact measurement language across various frameworks hampers effective communication among stakeholders. This includes investors, organisations, and regulatory bodies, making it difficult to foster a shared understanding of impact assessment.

Figure 5: Abundance of Frameworks Key Challenges



Given the significant challenges at hand, there is a clear and pressing need for a unified, industry-wide database harnessing the capabilities of AI and blockchain technologies. Such a database would play a pivotal role in streamlining and standardising the process of impact measurement on a global scale. By consolidating data from various sources and frameworks into a singular, transparent and tamper-resistant database, it would effectively address the complexities associated with the current multitude of impact measurement approaches.

Moreover, the integration of AI technology at this macro level would automate data analysis and prediction, significantly enhancing the efficiency and accuracy of impact assessments. This holistic approach holds the promise of enabling more well-informed decision-making in a broader context, ultimately advancing the effectiveness and significance of social impact investments on a global scale in a coherent and standardised manner.

"A plethora of standards, impact objectives, frameworks and lack of track record for many managers means industry wide standardisation is difficult to achieve."

The Impact Investing Benchmark Report 2020 [7]

6 Shinwell, M., and Shamir, E. (2018) "Measuring the impact of businesses on people's well-being and sustainability: Taking stock of existing frameworks and initiatives", *OECD Statistics Working Papers*, No. 2018/08, OECD Publishing, Paris. https://doi.org/10.1787/51837366-en.

7 Aztec Group (2020) "Impact Investing Report" Unquote, May. https://aztec.group/wp-content/uploads/2020/05/Aztec-Group-Unquote-Impact-Investing-Report-2020.pdf.

Impact Framework

A Shift Towards Impact Assessment

ESG (Environmental, Social and Governance) considerations, along with impact metrics, are fundamental pillars of a sustainable economy. The integration of these elements is crucial for investments that aim to drive meaningful change. The ESG investing approach assesses the exposure of an investment to environmental, social and governance risks. It is typically focused on mitigating operational risks rather than evaluating the impact of products or services. ESG investing is primarily risk-oriented, aiming to minimise potential negative externalities associated with an investment.

Spectrum of Capital

(Expected) Financial Performance	← Competitive risk-adjusted financial returns →			Disproportionate Risk-adjusted returns
Illustrative Motivations	'Aware of potential negative impact, but do not try to mitigate it'	'To mitigate risk'	'To align with long-term sustainable growth drivers'	'To help tackle climate change' 'To help tackle the education gap'
(Expected) effects on people and planet	May have negative outcomes for people and the planet	**Act to avoid harm** Mitigate or reduce negative outcomes for people and the planet	**Benefit stakeholders** Generate positive outcomes for people or the planet	**Contribute to solutions** Generate substantial positive change for otherwise underserved people or the planet
		Efforts data (Focus on ESG) as proxy for mitigation/reduction of negative outcomes for people and the planet	**Outcome data** Demonstrating positive outcomes for people or the planet	**Impact data** Demonstrating substantial positive change for otherwise underserved people or the planet

Figure 6: Spectrum of Capital[8]

8 "Investing for Family Offices." PwC, https://www.pwc.com/gx/en/services/family-business/assets/pwc-family-office-impact-investing-q-and-a.pdf.

The transition from static Environmental, Social, and Governance (ESG) scores represents a significant evolution in impact investing. This evolution signifies a move towards investments that go beyond merely minimising harm, to those that actively contribute to a sustainable future. This paradigm shift is paving the way for a more accountable and transparent financial ecosystem.

Traditional ESG scores, while useful, provide only a snapshot of a company's impact at a particular point in time. This impact is subject to change based on a multitude of factors, including market conditions, policy changes, and company initiatives.

> *"This is how we perceive social impact—by addressing the needs of underserved or unserved communities, those in crisis, and generally communities that have faced obstacles; our concerted efforts are gradually eliminating these obstacles. From an environmental standpoint, there's no additional infrastructure, so our footprint is very minimal and we're continuously seeing how we can even become a completely zero touch platform."*
>
> *Salma Sakr, Rology* [9]

While both ESG and impact investments focus on sustainability and responsibility, they differ in objectives, scope, intentionality, and measurement. ESG investments aim to integrate ESG factors for risk management and value creation, considering a broad range of issues. In contrast, impact investments explicitly seek positive social and environmental outcomes, targeting specific challenges with intentional efforts for measurable change, emphasising standardised impact metrics. This emphasis on measurement underscores the commitment of impact investments to tangibly contribute to positive societal and ecological changes, setting them apart from the broader, risk-focused approach of ESG investments.

9 Expert Interview of Salma Sakr, conducted by ImpactVest and Critical Future on 23 January 2024.

To address the prevailing limitation in impact measurement, an impact framework that extends beyond individual investments is needed. It will allow stakeholders to not only observe the current impact of their investments, but also anticipate potential future impacts. Such macro-level insights facilitate more effective resource allocation in broader contexts.

10 Expert Interview of Kelvin Tichana and Panashe Taruwinga, conducted by ImpactVest and Critical Future on 24 January 2024.

Transforming Impact Investing

A Solution for the Social Impact Measurement Challenge

At the forefront of a paradigm shift in impact investing, emerging practices are incorporating cutting-edge technologies such as blockchain and AI to enhance transparency and impact in Venture Capital (VC) and Private Equity (PE). The industry is witnessing the development of unique frameworks that enable effective communication among fund managers about the potential of these technologies in fostering transparent impact investing.

A central element of these frameworks is the integration of blockchain and AI models. These models, serve as tools for Limited Partners (LPs), facilitate the establishment of impact frameworks for capital, enabling the monitoring impact. The overarching objective is to create transparent and predictive models for measuring the impact of investments.

In conclusion, the broader objective is not merely to create transparent records but to leverage capital as a powerful impact tool. This approach signals a significant advancement in impact investing, illustrating how technology can bring about enhanced transparency, efficiency, and effectiveness in measuring the social and environmental impact of investments.

Strategic Implementation

Carving the Path for a Novel Standard in Impact Investing

Figure 7: Strategic Implementation

1. Development Roadmap

In paving the way for a future standard in impact measurement and prediction, the integration of Ethereum blockchain for constructing transparent and immutable smart contracts becomes a crucial element.

2. Stakeholder Engagement

Stakeholder engagement ensures alignment with the vision and comprehension of the benefits and operations of a new system.

3. Projects and Case Studies

Documenting success stories and lessons learned as case studies provides valuable insights.

4. Scalability and Adaption

Technological solutions that are scalable and adaptable.

5. Compliance and Ethical Considerations

The ethical use of AI and adherence to regulatory requirements. Ensuring transparency, fairness, and compliance with evolving regulatory landscapes.

Sharing Data in Social Impact or Collaborative Contributions

Fostering a Shared Ecosystem for Impactful Investments

Encouraging a collaborative approach in impact investing, the overarching vision is to transform the pursuit of financial returns into a collective endeavour for social impact returns. By amalgamating investment outcomes and data on a shared platform, such as a blockchain database, the impact investing community can nurture a transparent and accountable ecosystem.

In essence, "Sharing in Social Impact" serves as a call for the investment community to unite under a shared goal of maximising social impact. It is about shaping a new culture in impact investing where the sharing of data and insights becomes standard practice, fuelling a collective effort to make a significant difference in the world. This approach nurtures a sense of shared responsibility and ensures that every investment contributes meaningfully towards the global goal of sustainable development. This is a crucial step towards a future where financial returns and social impacts are not just aligned but also quantifiable in a universally comprehensible and actionable manner. This embodies the essence of impact investing.

> *"AI and blockchain are providing visibility to everybody that is involved. And that comes with collaboration and engagement."*
>
> *Soji Sanyaolu, AirSmat* [11]

11 Expert Interview of Soji Sanyaolu, conducted by ImpactVest and Critical Future on 26 January 2024.

Innovative Technological Solutions

The Pivotal Role of AI and Blockchain

Artificial Intelligence (AI) and blockchain technology have surfaced as revolutionary instruments in addressing the pivotal issue of quantifying social impact in the realm of impact investing. These technologies proffer potential solutions to the challenges engendered by the current disjointed standards of impact measurement.

Blockchain, celebrated for its immutability and transparency, furnishes an optimal foundation. This characteristic is instrumental in the creation of a transparent, reliable and universally accessible system for tracking and authenticating the social impact of investments.

Artificial Intelligence, with its predictive capabilities, is at the vanguard of forecasting and anticipating social returns. By harnessing Artificial Intelligence, we can transition from a reactive to a proactive approach in impact investing, thereby optimising resource allocation and maximising social benefits.

> *"Some people call it machine learning, AI, some people call it automation, intelligence. Whatever it may be called, for me it is the right technology used at the right time."*
>
> *Cristian Tânase, Connectome*[12]

Two Levels of AI and Blockchain

AI and blockchain technologies play a dual role within the impact investing framework. Simultaneously, these technologies operate at the company level, particularly within invested enterprises that are at the forefront of innovation in the social impact sector.

12 Expert Interview of Cristian Tânase, conducted by ImpactVest and Critical Future on 23 January 2024.

"With AI, ethical considerations are always very important. There's also regulatory compliance to consider, since stakeholders are usually curious about your activities in this domain, particularly with regard to compliance related to data protection rights and other related matters."

Mayowa Abejirin, Kalibotic [13]

"With AI we are able to communicate the benefits, like efficiency and productivity. We're kind of pushing the boundaries in trying to do things that we haven't had before."

Olugbenga Abejirin, Kalibotics [14]

In unison, these technologies offer a synergistic solution. The integration showcases a broader application of technology in enhancing our understanding and prediction of the impact within the broader context of various investments. This amalgamation heralds a new epoch in impact investing, where technology empowers us to make informed, impactful, and forward-looking investment decisions.

"With the use of AI we want to offer more security to our customers when it comes to blockchain. It will also mean that the transactions that are happening are more secure, which indicates that our users will be more inclined to use our platforms as compared to other ones."

Panashe Taruwinga, Impact Design Academy [15]

In summary, AI and blockchain are not merely technological trends; they are pivotal catalysts in the evolution of impact investing. By leveraging these innovations, we can address the fragmented landscape of social impact measurement, thereby setting a new standard that aligns capital with the global agenda for a sustainable and equitable future.

13 Expert Interview of Mayowa and Olugbenga Abejirin, conducted by ImpactVest and Critical Future on 29 January 2024.

14 Expert Interview of Mayowa and Olugbenga Abejirin, conducted by ImpactVest and Critical Future on 29 January 2024.

15 Expert Interview of Kelvin Tichana and Panashe Taruwinga, conducted by ImpactVest and Critical Future on 24 January 2024.

Vision for the Future

Envisioning a transformative future for impact investing, there is a push towards integrating blockchain and AI technologies to reshape the landscape. The goal is to establish a framework that is transparent and predictive in measuring and reporting social impact. By harnessing the attributes of blockchain - immutability and transparency - along with the predictive capabilities of AI, this approach seeks to better align capital with the global sustainable development agenda on a broader scale.

This vision transcends the narrow focus on financial returns. It aspires to create a world where investments go beyond profitability to embody a deeper sense of purpose. The aim is to ensure that every investment significantly contributes to the global goal of sustainable development, with its impact quantifiable, transparent, and secure. Such a macro-level vision signifies a substantial step towards a future where financial investments and social impacts are not only harmonised but also universally understandable and actionable.

"Looking towards the future, envision a scenario where organisations, governments, and policymakers have integrated, accurate and real-time data at their fingertips. They won't be searching for statistics but will be empowered to interrogate, and interpret the data, enabling better decision-making, timely problem-solving, and a deeper comprehension of complex environmental issues. This shift towards AI-driven insights will usher in a new era of robust understanding, fostering continuous learning in areas like measuring greenhouse emissions and carbon capture."

Tumi Frazier, Fourth Wave Technology [16]

Call To Action

As we stand on the precipice of a new era in impact investing, characterised by unprecedented transparency, efficiency, and data-driven approach, we invite all stakeholders to embrace this transformative shift. The visionary integration of blockchain and AI technologies presents a compelling glimpse into the future of impact investing. In this envisioned future, each investment transcends mere profitability, becoming inherently purposeful. By adopting this new standard, we can collectively ensure that our investments contribute meaningfully towards the global goal of sustainable development.

We urge you to seize this opportunity to make a tangible difference in the world. Let us harness the power of capital to create a sustainable, equitable, and thriving planet. Together, we can redefine that landscape of impact investing and set a new benchmark for transparency, accountability, and social impact.

This is more than just a call to action - it is a call to responsibility. It is about recognising that we have the power to shape the future of our planet through our investment decisions. This is the essence of impactful investing, and we invite you to be part of this revolution. Let's transform impact investing, one investment at a time.

16 Expert Interview of Tumi Frazier, conducted by ImpactVest and Critical Future on 02 February 2024.

APPENDIX

WHITEPAPER PROFILE
ImpactVest Alliance

SOJI SANYAOLU
Founder and CEO
AirSmat Inc.

Soji Sanyaolu, the CEO of AirSmat, is a visionary leader in transforming African agriculture through innovative technology. With a profound passion for sustainable development, Soji is pioneering the use of AI and data-driven insights to empower farmers across the continent, irrespective of their technological expertise. Under Soji's leadership, AirSmat has developed the AnyFarm app, a user-centric platform that leverages Farm Data and AI to provide actionable insights for efficient farm management, making technology accessible and inclusive for all farmers. Soji's strategies align with the United Nations Sustainable Development Goals, focusing on food security and environmental sustainability. Soji is dedicated to creating a sustainable, prosperous agricultural landscape in Africa, as well as inspiring a continental movement towards more environmentally responsible and technologically advanced farming practices.

Due to the success of AirSmat, Soji was bestowed the prestigious THRIVE by SVG Ventures award. This accolade recognises AirSmat's innovative impact on the AgTech industry, further cementing AirSmat's role as a key player in transforming agriculture through technology. AirSmat joined the Endeavor African Agtech Scale Up program, sponsored by FMO: Dutch Entrepreneurial Development Bank. This collaboration helps to fuel their journey to revolutionise African agriculture with technology and amplifies their impact within a supportive global network.

Case Study: AirSmat Inc.

Insights from the interview:

The interview highlights AirSmat's commitment to revolutionising African agriculture through technology, emphasising CEO Soji's dedication to empowering farmers, enhancing sustainability, and ensuring food security. The company's innovative use of AI and Blockchain emerges as a key strategy in addressing agricultural challenges. Recognising the diverse linguistic landscape in Africa, AirSmat introduced Conversational AI in multiple languages, allowing farmers to interact with the technology in their native languages.

Social impact:

AirSmat aims to empower farmers, increase revenue, and create jobs, contributing to improved livelihoods and economic development. The company's focus on environmental sustainability, particularly in carbon monitoring through Blockchain, aligns with broader climate action goals, showcasing a holistic approach to social impact.

How AI and blockchain can help to measure social impact:

- **AI for Precision Analytics in Agriculture:** AI/ML systems play a pivotal role in refining data analysis precision, predicting long-term social impact, and ensuring inclusivity in insights. This optimisation facilitates the measurement of augmented revenue and job creation resulting from agricultural initiatives, aligning with broader social and economic goals.
- **Blockchain and Agriculture:** Within the agricultural landscape, Ethereum stands out as a catalyst for positive change. This technology, highlighted for educational purposes, is pivotal in promoting sustainability and climate-conscious practices. Its application not only empowers farmers but also aligns with broader social objectives, fostering increased livelihoods and job opportunities.

CRISTIAN TĂNASE

Founder and CEO
connectome

Cristian Tănase is a technology enthusiast, inventor and innovator. He spent over 10 years at Apple where he helped enhance Apple's Smart Home ecosystem by working closely with hardware developers and manufacturers and building platform differentiating, next generation products that seamlessly connect to Apple devices. Cristian has also spent time working in the Smart City industry where he is best known for his work on inventing a groundbreaking way of integrating 5G in street lights or for introducing the world to its first wireless, multifunctional smart pole, he is also named as an inventor on a number of patents. His work is dedicated to how we interact with technology, and is driven by the importance of value, design and human experience in product creation.

Cristian envisions an even more intelligent future, where technology brings us true value in a very personal way, and has committed Connectome to creating extraordinary human experiences for the world that could be, with the help of today's technologies.

Case Study: Connectome

Insights from the interview:

The interview shed light on Connectome's strategic communication approach, adeptly navigating the integration of artificial intelligence (AI) into smart living solutions. The emphasis on balancing user-friendly functionality with sophisticated AI technologies reflects the company's commitment to ensuring a seamless and intelligent living experience for residents.

Social impact:

Connectome aims to enhance residents' daily lives, streamline tasks, and contribute to their well-being by providing a comprehensive smart living experience. The company's focus on reducing carbon footprints and promoting sustainability aligns with broader social impact goals, contributing to environmental conservation and cost-effectiveness for residents.

How AI and blockchain can help to measure social impact:

- **AI:** Advanced algorithms enable organisations to predict the carbon reduction potential of large-scale smart home device implementations, offering precise quantification of environmental impact and measurable decreases in carbon emissions. This data-driven approach reinforces a commitment to sustainability.
- **Blockchain:** Implementing Ethereum blockchain technology enhances transparency and security in data management, ensuring the responsible use of technology by safeguarding sensitive information. This fosters user trust and contributes to overall social impact objectives by providing an immutable and transparent record for environmental and social impact metrics.

WHITEPAPER PROFILE
ImpactVest Alliance

TUMI FRAZIER
Co-Founder and CEO
Fourth Wave Technology

Tumi Frazier, a co-founder and CEO of Fouth Wave Technology, a Cleantech company that promotes sustainable agriculture, advances healthy food systems, and improves climate resilience through meaningful innovation. Tumi is a serial entrepreneur, a renowned Keynote Speaker and an associate of a top ranked global leadership development institution, a pioneer in the field of global leadership research. Tumi has deep knowledge and experience facilitating partnerships for technology for good or technology innovation products.

Tumi Frazier moderates panel discussions and roundtable leadership conversations on critical issues: Food Safety and Security, Nutrition, Intra-Africa Trade, Digital Transformation, Africa's Post-COVID-19 Recovery and Long-Term Resilience, Manufacturing, Global Linkages and Partnerships, Global Diversity, Equity & Inclusion, Women and ESG (Environmental, Social and Governance).

Tumi writes articles covering a wide range of topics from Africa's business environments to opportunities for innovative solutions suited to Africa's unique environment. She has authored two books, *Your Moment* and *In the Midst of the Storm* and co-authored two books: *Stepping Stones to Success* and *Courageous Stories of Inspiration*. Tumi was one of the winners of SABF Social Innovation Award 2022 and has won the "Best Women-Led Team" category as a finalist in Cleantech South Africa by the Global Cleantech Innovation Program 2023-2024.

Case Study: Fourth Wave Technology

Insights from the interview:

Fourth Wave Technology, led by co-founder Tumi Frazier, focuses on AI solutions that promote data driven and regenerative farming in Africa and across the globe. The company's Evofarm App and Business Intelligence Platform reflect a commitment to supporting small farmers, policy makers, the agrifood and water industries through cleantech, making a positive impact on the environment and fostering sustainable communities. Tumi emphasises tailored, accessible technology that understands local farmers' needs to close digital gaps in unserved and emerging markets. Along with a dedication to education and inclusion of youth in agriculture. Digitally and ecologically minded farmers are a necessity to grow more healthy food, transform food systems and build economies that lift communities out of poverty around the world.

Social impact:

Since agriculture is one of the largest users of water resources and a primary cause of groundwater pollution in most rural areas, it's crucial to educate small farmers on the importance of water conservation techniques and ways to increase food production through relevant technologies and eco-smart farming practices. Fourth Wave Technology's app educates farmers on growing traditional crops that are more drought and disease resistant and adaptable to climate change. It teaches responsible water consumption and production and the importance of building soil health to ensure communities have access to the food they need. Their solution strengthens the capacity of small farmers to implement data-driven and climate resilient farming practices for precision, increased throughput, and effectiveness, contributing to profitability, increased employment, and food secure communities. Through AI-enabled precision and advisory, farmers can increase productivity on the same size land or backyard by 50%. Automated monitoring allows farmers to capture farm activities and track progress in real time, with deeper AI insights. AI climate forecasting enables instant warning of critical environmental changes, reducing response time and saving farmers money.

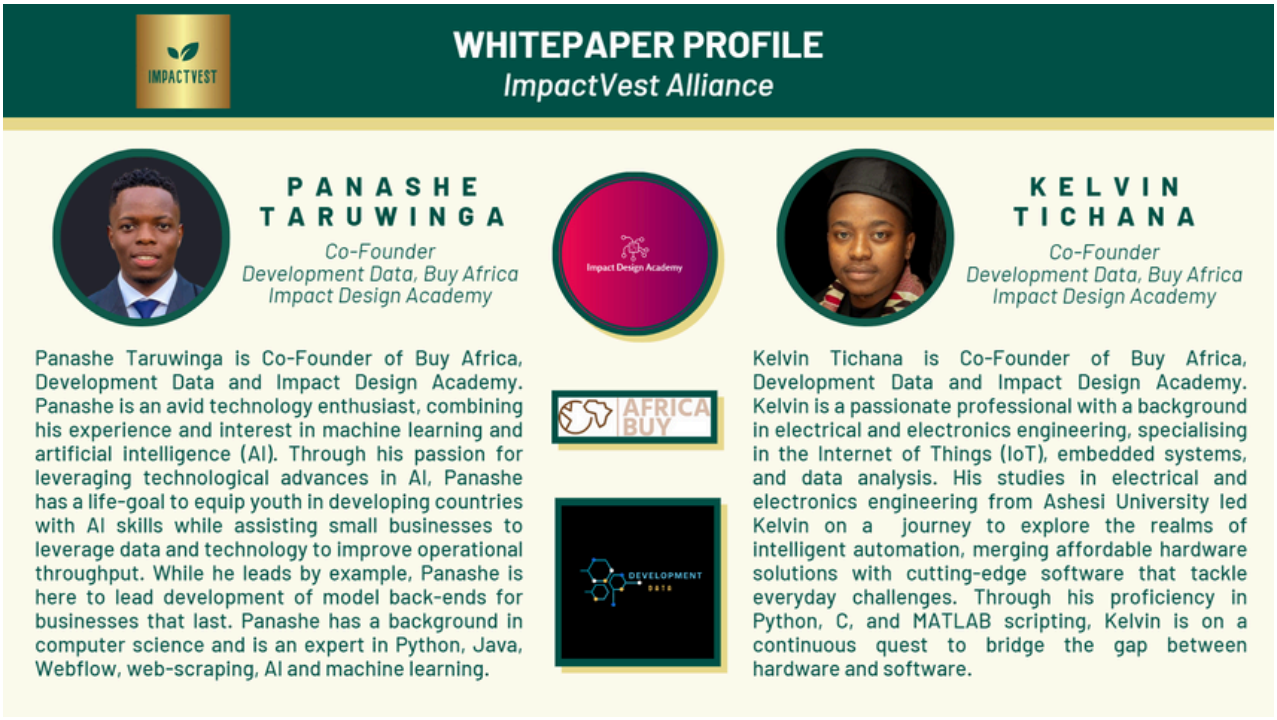
Case Study: Fourth Wave Technology (continued)

Social impact (continued):

AI image recognition and AI chat helps with early detection of crop infestation and stress associated with moisture deficiencies, insects, or diseases infestation for early mitigation to reduce crop loss.

How AI and blockchain can help to measure social impact:

- **AI Empowering Sustainable Agriculture:** Leveraging AI algorithms, agricultural companies can employ advanced algorithms to analyse historical farming data. By predicting the long-term impact of sustainable agricultural practices facilitated by AI, such as reduced environmental footprint and increased crop yield, these insights can guide investment strategies for lasting positive outcomes in rural communities. Farmers have access to historic and predictive analysis of their yield based on the data from all their farming activities which they can use to raise funding; thereby including many, especially women who have been excluded from essential services. AI is able to measure percentages of women with access to markets, funding and various support programs including jobs created in various communities. Through AI, governments have higher quality and integrated data from farm level, cluster level, regional and national level to monitor water stress and droughts, understand the magnitude of water problems in rural areas, including easy traceability of the communities impacted by water scarcity for their timely support. AI can also help governments and organisations that support small farmers monitor and evaluate the effectiveness of their support programs and enable the development of evidence-based policies. By leveraging AI algorithms, business teams can analyse supply chains and market digitally, quantify end-user value, interpret customer behaviour, and evaluate distribution processes.
- **Blockchain for Sustainable Agriculture:** Ethereum-based blockchain technology can enhance transparency and security in data management This approach ensures the responsible and ethical use of technology by safeguarding sensitive information, fostering trust among users, and contributing to the overall social impact goals of such companies. The decentralised nature of blockchain adds an extra layer of security, assuring stakeholders of the integrity of recorded data.



Case Study: Impact Design Academy

Insights from the interview:

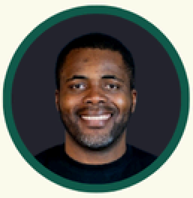
The founders' dedication to fostering practical AI education, sustainable solutions, and transparent practices emerged as pivotal insights, underlining their holistic vision for leveraging AI's potential in driving positive change for community development and environmental responsibility. Additionally, their passion for cultivating inclusive and ethical practices underscores a commitment to ensuring long-term societal impact.

Social impact:

Impact Design Academy strives to democratise AI education, fostering practical applications for societal challenges and ensuring environmental sustainability, contributing to a future where technology bridges gaps in knowledge and drives positive social and environmental change.

How AI and blockchain can help to measure social impact:

- **AI's Predictive Role in Social Development:** AI, armed with advanced algorithms proves invaluable in dissecting historical data to anticipate forthcoming social impacts. A prime example involves forecasting the enduring effects of AI education initiatives on community development. This predictive capability aids in formulating investment strategies geared towards sustainable, positive outcomes over the long term.
- **Blockchain for Transparent Social Metrics:** By embracing Ethereum-based blockchain technology, a transparent database unfolds, ushering in verifiable and unalterable records of social impact metrics. This establishment ensures accountability.



OLUGBENGA ABEJIRIN
Co-Founder
Kalibotics

MAYOWA ABEJIRIN
Co-Founder
Kalibotics

Olugbenga (Gbenga) Abejirin is an Electrical Engineer, Application Developer and Serial Entrepreneur. He specialises in Algorithms, Data Structures, Business Intelligence and Machine Learning. Gbenga is a registered PRINCE2 Practitioner and is passionate about impact and using advanced technologies to transform the African continent. He has founded such startups like Smart Classroom Solutions, which provide technology - enhanced learning environments for primary and secondary schools in Africa; and Xolani Health, a HealthTech that received a $15k grant from the Japan International Cooperation Agency and was accepted into the Techstars Acceleration program. He is currently the co-founder of Kalibotics, a Nigerian-based robotics and AI firm and co-founder of Cardio Intel, a UK-based HealthTech startup.

Mayowa Abejirin is an impact-driven techpreneur whose main interests are in building robotics systems and engineering AI (computer vision and language) algorithms to solve some of Africa's most pressing issues in manufacturing, healthcare, e-commerce, and education. He is an alumnus of the Venture Capital for Africa's Mentor Driven Capital Program, Forbes Nigeria Accelerator, Innovation Fellowship for Aspiring Inventors and Researchers (i-FAIR), and the US Mass Challenge accelerator program. He led a radiology AI startup, EpochZero, into Intel's exclusively deeptech program, Intel Liftoff for Startups, as the first-ever African team admitted into the program. Under Mayowa's leadership, EpochZero won the inaugural edition of the Intel African AI Hackathon, and he has twice been the technical lead on teams that have won national grants/competitions in Nigeria. He has also led engineering teams to deploy next-generation "smart classrooms" across the six geo-political zones of Nigeria in collaboration with the Federal Government of Nigeria and international partners.

Case Study: Kalibotics

Insights from the interview:

The co-founders of Kalibotics are dedicated to merging AI and robotics to solve real-world challenges. With a focus on healthcare, environmental initiatives like electronic waste (e-waste) management, and plans for blue tech, Kalibotics is committed to creating meaningful impact. The founders also emphasise the combination of AI and robotics as a unique avenue to manipulate physical objects in the real world, solving problems that traditional AI models alone cannot address.

Social impact:

Kalibotics aims to achieve significant social impact by reducing carbon emissions, promoting energy efficiency, and contributing to the overall decarbonisation of industries. Their initiatives, such as e-waste management and blue tech exploration, align with broader environmental goals.

How AI and blockchain can help to measure social impact:

- **AI for Social Impact Measurement:** AI algorithms could predict the tangible reduction in carbon emissions achieved through the integration of robotics and AI in managing e-waste. By employing predictive analytics, we can assess the multifaceted environmental advantages across industries, estimating the potential decrease in both energy consumption and carbon footprint.
- **Blockchain for Transparent Environmental Projects:** The adoption of Ethereum blockchain technology elevates transparency in environmental projects to a broader spectrum. Blockchain ensures an unaltered record of data, encompassing details of e-waste transactions and the integration of robotics and AI in these endeavours. This creates a universally transparent and credible repository, shedding light on the environmental impact of such practices in various sectors.

WHITEPAPER PROFILE

ImpactVest Alliance

SALMA SAKR

Chief Growth Officer
Rology

Salma Sakr is the Chief Growth Officer at Rology, a teleradiology platform solving the problem of radiologists' shortage and high latency in medical reports through matching cases from hospitals all over the world with the optimum radiologist remotely and instantly. Salma has a decade of experience in fast moving consumer goods (FMCG) at large corporations like Procter & Gamble. Salma pivoted into start-ups approximately five years ago, and has not looked back. Salma is committed to Rology's mission of saving lives, and looks forward to impacting more people in more places in her current role.

Case Study: Rology

Insights from the interview:

Rology, a teleradiology leader, leverages AI for transformative healthcare solutions in the Middle East and Africa. The company's commitment to ethical AI, inclusivity, and environmental sustainability emerge as key themes. Rology envisions continuous growth and evolution in the AI space, particularly in predictive capabilities. The company foresees increased regulatory scrutiny to ensure consumer and patient protection, which aligns with its commitment to self-regulation and maintaining the highest ethical standards.

Social impact:

Rology aims to democratise healthcare by providing equal access, humanitarian support during crises, addressing female healthcare needs, and promoting environmental sustainability. The platform has a significant impact on under-served communities, with a focus on inclusivity and gender-specific health concerns. Moreover, the minimal infrastructure requirements of Rology's platform contribute to environmental sustainability, as the company aims to further reduce its environmental footprint, working towards becoming a zero-touch platform.

How AI can help to measure social impact:

- **AI for Enhanced Healthcare Impact:** AI assumes a crucial role in improving diagnostic accuracy, operational efficiency, and overall patient outcomes. The applications of predictive analytics forecasts not only enhances these aspects but also elevates regulatory scrutiny, aligning with ethical standards and commitments to quality healthcare.

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