

Impact Investing Innovation

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From Impact 1.0 to 3.0

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Abstract

Impact innovation has evolved from Impact 1.0 to 3.0. Each phase of impact innovation iterates on prior improvements and adds new components. Whereas Impact 1.0 has emerged with Carbon Credit Trading and Impact 2.0 has contributed participatory grantmaking, impact measurement, and price competitions. Impact 3.0 builds on those prior accomplishments with emerging Web3 community toolsets and impact certificate trading. These combined features enable Impact 3.0 to scale philanthropy to unprecedented levels.

Key Words: Social Impact, ESG, Impact Certificates, Carbon Credits, Decentralized Autonomous Organization, Finance, Token Models, Cryptocurrencies, Feedback Effects, Emerging Technology, Tokens, Blockchain, Distributed Ledger Technology

JEL Categories: K20, K23, K32, L43, L5, O31, O32

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Introduction

Growth in philanthropy is the main driver of impact innovation. Since the turn of the century, the number of private foundations in Brazil increased by 300%, producing 5.5 billion USD in donations, India's philanthropy exceeded 5 billion USD in 2006 alone; in China, over 800 private foundations were established between 2006 and 2011.² The transfer of impact donations from OECD countries to developing countries increased from around 5 billion USD in 1991 to over 53 billion by 2008.³

Impact innovation is evolving. Key components of the evolution of impact innovation can be summarized by the transition from Impact 1.0 to Impact 3.0. Impact 1.0 describes the traditional model of impact giving and pledges. Impact 2.0 involves participatory grant-making, use of technology, impact measurement innovation, and innovation and impact prices. Impact 3.0 further upgrades the Impact 2.0 accomplishments via collaborative giving communities and impact certificate marketplace. Impact Certificates are "electronic tickets" that can be sold to claim a project's impact akin to a carbon credit. Each phase improves prior phases and their accomplishments, builds upon them, and optimizes them further.

Growth-driven impact industry improvements are the main driver of impact innovation from Impact 1.0 to 3.0. For example, Impact 2.0's participatory grant-making helps increase the

² David Moore & Douglas Rutzen, *Legal Framework for Global Philanthropy: Barriers and Opportunities*, 13 INT'L J. NOT-FOR-PROFIT LAW 5, [X] (2011).
<https://www.icnl.org/resources/research/ijnl/legal-framework-for-global-philanthropy-barriers-and-opportunities>

³ *Id.*

erosion of public trust⁴ in charitable giving. Through increased public trust in charities' ability to allocate donations per donative intent, charities can expand fundraising, attract the necessary talent, and increase advocacy.⁵ The traditional private foundation model in Impact 1.0 can be improved with the transparency of WEB3 in Impact 3.0.

Through enhanced transparency in impact certificate markets, Impact 3.0 upgrades private foundations and overcomes the lack of transparent and accountability mechanisms⁶ that afflicted Impact 1.0 foundations. Impact 3.0's WEB3 collaborative communities further improve Impact 1.0 private foundations by adding collaborative WEB3 democratic measures that address plutocratic power structures in Impact 1.0 foundations that originated in the lack of democratic elections of Impact 1.0 foundations' organizations' leaders or trustees. While Impact 3.0 still relies on those foundation structures, the WEB3 collaborative community involvement removes the power centers and makes the decision processes in foundations much more transparent. While foundations' trustees, councils, boards, and their leaders may still be allowed in Impact 3.0 to work in

⁴ Ben Gose, *The Trust Crisis*, CHRON. PHILANTHROPY, Jan. 2020, at 12. According to the 2019 Edelman Trust Barometer (an annual study of institutions around the world) only 52% of Americans have faith that nonprofits will do the right thing. Id. A survey by the Better Business Bureau found that 70% of Americans said that trust is essential before making a donation, but fewer than 20% of Americans said they highly trust charities. The lack of public trust towards charities is illustrated by CharityWatch reports cases of abuse of the charitably giving system. For example, two separate actions were filed by the Federal Trade Commission in conjunction with state charity regulators from across the U.S to crack down on predatory practices of companies that solicit donations on behalf of charities. Charity Watch, *Fundraisers for 'F' Rated Charities Hit with a Combined \$170.2 Million in Legal Judgments* (May 19, 2021), <https://www.charitywatch.org/charity-donating-articles/fundraisers-for-f-rated-charities-hit-with-a-combined-1702-million-in-legal-judgments>

⁵ Gose, *supra* note 4, at 12-14.

⁶ Robin Rogers, *Why the Social Sciences Should Take Philanthropy Seriously*, Soc'y, Dec. 2015, at 533.

perpetuity, without the required operational accountability and transparency,⁷ Impact 3.0's use of WEB3 collaborative communities significantly curtails the power of such leaders. It enhances operational efficiency while addressing issues of accountability and transparency. As such, Impact 3.0 enhances transparency in philanthropy with overall enhancement of democracy and civic equality that were previously afflicted in Impact 1.0.⁸

The crowd wisdom of collaborative WEB3 communities in Impact 3.0 helps overcome the lack of checks and balances and misallocation of donor funds in the inherent power imbalances that can afflict Impact 1.0 and 2.0. Impact 1.0 philanthropic strategies entrusted individual donors, not collectives of donors as in Impact 3.0, with identifying the impact problems that needed to be solved. Through their charitable organizations, high-net-worth individuals and organizations have unparalleled influence over social institutions.⁹ At its worst, high-net-worth individuals may leverage underfunded causes with corporate strategies to reduce problems corporate interests helped create.¹⁰ Individual philanthropists can leverage underfunded causes and reshape them according to their ideals without significant checks and balances or crowd wisdom considerations. Individual donor power and the associated misallocation of impact funding are curtailed in Impact 3.0 as donor power is exercised mostly by collaborative donor communities.

⁷ Rob Reich, *Philanthropy in the Service of Democracy*, 17 *STANFORD SOC. INNOVATION R.*, 26 (2018).

⁸ DAVID CALLAHAN, *THE GIVERS: WEALTH, POWER, AND PHILANTHROPY IN A NEW GILDED AGE* (2017); Una Osili, Kinga Zsofia Horvath, Sasha Zarins, et. al., *An Annotated Bibliography of Recent Literature on Current Developments in Philanthropy*, Feb. 2019, <https://hdl.handle.net/1805/20454>.

⁹ MATHEW BISHOP & MICHAEL GREEN, *PHILANTHROCAPITALISM: HOW GIVING CAN SAVE THE WORLD* (2008).

¹⁰ Robin Rogers, *Why the Social Sciences Should Take Philanthropy Seriously*, *Soc'y*, Dec. 2015, at 533.

Impact 3.0 enables capital allocation timely and efficient. Impact 3.0 improves on Impact 1.0 and 2.0 capital allocation timeframes, lowering the time between donors receiving their tax deductions and deploying the donated funds to the impact projects. While boards and donors in Impact 1.0 and 2.0 often seek to preserve their endowments rather than deploy the assets,¹¹ Impact 3.0 incentivizes asset deployment by listing impact projects post due diligence by expert communities. With the certainty of impact outcomes created by expert community crowd wisdom upvotes, the donor community deployment of funds can happen faster, with more process efficiency, and with more confidence because information asymmetries are minimized through the process.

It is important for purposes of this whitepaper to highlight that the target audience for this paper depends on donor motivation. There are many different kinds of donors some of whom may be more some less inclined to engage with technology-based technology solutions for philanthropy. Some donors are motivated by inherently personal and individualized causes. Some donors have personal experience with causes that impact their lives and motivate them to support the cause. For example, a particular hospital may have saved the child of a donor and the donor feels strongly about helping other children and their parent in the same situation with the same disease. Accordingly, the donor may set up a particular charity for purposes of healing children that suffered from that particular disease. Similarly, some donors may wish to help a particular institution, such as their alma mater, regardless of how funded

¹¹ *Put a Stake in 'Zombie Charity.'* *Philanthropy Is for the Living.* CHRON. PHILANTHROPY, Sept. 2019, at 31. In 2021, US foundations were only required to spend 5% of their assets per year. Although this is a minimum requirement for US foundations, many boards view 5% as the default rule.

such institution may already be. The key here for those personally motivate donors is their personal experiences with the institution and their desire to "give back" or "pass on", including but not limited to religious, DEI, SDG, and other causes. This can also apply to corporate donations motivated by a board decision with board members who care particularly about a certain cause. In short, donors who are motivated by their personal or local interests may not be motivated by scaling impact overall. The target audience of this paper is the donor base that cares about technology-based improvements in philanthropy. This whitepaper focuses on a subgroup of the global philanthropy market consisting of high-dollar impact focused donors who wish to utilize WEB3 tools to attain enhanced transparency, immutability of outcomes, and accountability for their donations.

The transition from Impact 1.0 and 2.0 to Impact 3.0 is an iterative process. Most donors will realize over time what inefficiencies are created in the Impact 1.0 and 2.0 systems. Once the donor communities realize those inefficiencies, they may begin to turn a certain proportion of their donations into contingencies in impact certificates. In this iterative process, donors may experience what works in the impact certificate market allocations they created. That experience may help donors learn by doing and experiment further in the impact certificate marketplace. This process will take time. As the impact certificate market matures, even donors who are motivated by personal experience with causes may over time realize that they can support the personally motivated causes through the efficiencies created by the impact certificate marketplace in Impact 3.0. It is the authors assumption that most donors, regardless of their heritage and personal motivations, will over

time realize that their cause benefits from the uses of WEB3 Impact 3.0 systems.

Target Audience

The target audience for this paper depends on donor motivation. There are many different kinds of donors some of whom may be more some less inclined to engage with technology-based technology solutions for philanthropy. Some donors are motivated by inherently personal and individualized causes. Some donors have personal experience with causes that impact their lives and motivate them to support the cause. For example, a particular hospital may have saved the child of a donor and the donor feels strongly about helping other children and their parent in the same situation with the same disease. Accordingly, the donor may set up a particular charity for purposes of healing children that suffered from that particular disease. Similarly, some donors may wish to help a particular institution, such as their alma mater, regardless of how funded such institution may already be. The key here for those personally motivated donors is their personal experience with the institution and their desire to "give back" or "pass on", including but not limited to religious, DEI, SDG, and other causes. This can also apply to corporate donations motivated by a board decision with board members who care particularly about a certain cause. In short, donors who are motivated by their personal or local interests may not be motivated by scaling impact overall. The target audience of this paper is the donor base that cares about technology-based improvements in philanthropy. This paper focuses on a subgroup of the global philanthropy market consisting of high-dollar impact focused donors who wish to

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Evolution of Impact Innovation

Impact innovation is evolving. Key components of the evolution in impact innovation are signified by the transition from Impact 1.0 to Impact 3.0. Impact 1.0 describes the traditional model of impact giving and pledges. Impact 2.0 involves participatory grant-making, use of technology, impact measurement innovation, and innovation and impact prices. Impact 3.0 further upgrades

the Impact 2.0 accomplishments via collaborative giving communities and impact certificate marketplace.

Impact 1.0

Legacy philanthropy in Impact 1.0 is characterized by donors funding NGOs based on promises to create target impacts. Aside from their goal of discovering the most qualified project candidates to fund the best, not just the known candidate projects, the goals of Impact 1.0 donors typically focus on attaining critical mass of funding in a bid to make tackling big challenges worthwhile and possible while at the same time reducing the risk of bad investments by diversifying. Diversification helps ensure that the Impact 1.0 donors may be guaranteed a small part in a breakthrough impact project. Like all impact donors, Impact 1.0 donors want to ensure the identified impact project candidates are qualified and have the potential to succeed. Moving as much funding as possible from process to impact results is key for the operations. However, to maximize the chances of success, Impact 1.0 donors often create a support network for the funded projects, which increases the cost of Impact 1.0. Support networks for projects may include collaborations with other innovators, as well as university, research, and corporate partnerships.

Legacy and WEB2 technology limit philanthropy in Impact 1.0. Impact 1.0 often made it harder to form philanthropic syndicates because donor networks operated in silos and were not incentivized by the Impact 1.0 technology system to work together. Forming consortia was difficult in Impact 1.0 because of complicated decision-making processes, compliance

requirements, and fiscal controls. If consortia were formed in Impact 1.0, they often spend too much time soliciting additional donations and not enough time on pursuing their goals. Raising funds and leveraging funding for impact projects in Impact 1.0 was also rather time-consuming as compared with Impact 2.0 and 3.0 technology systems. Donors in Impact 1.0 were able to fund outlier projects because crowd wisdom and syndication were not fully incentivized. Impact verification was not a high priority in Impact 1.0 systems. Access to the top deals was not always possible in Impact 1.0 because of the silos and lack of collaboration technology systems. Because of the unavailability of advanced technologies, Impact 1.0 often suffered from a lack of transparency and accountability. Impact projects with certifiable records were rare. Therefore, the overall performance record of Impact 1.0 suffered. Individual donors were often not able to fully finance the breakthroughs they needed or desired.

Because Impact 1.0 does not support a liquid and efficient marketplace for funding, funding results in Impact 1.0 are logistically difficult to attain. To protect their interest in impact results, donors often overinvest in the process not in impact outcomes directly. Because of the lack of a central marketplace, funding sources that are not well-known often can only generate exposure to a very limited purview of the impact market. Without a full view of the market, impact donors in Impact 1.0 often end up funding projects by people they know through their existing networks, not the most qualified projects based on objective standards. Conversely, when impact investors are well known, they are often overwhelmed by the response from projects and spend a lot of time on due diligence processes and compliance processes to discern unqualified project applicants

and candidates with poor fits from the desirable impact projects. Because of the lack of an efficient marketplace, impact intermediaries, such as foundations, DAFs, NGOs, and fiscal sponsors, among others, often experience their priorities being hijacked by big-dollar donors. This often results in a feast or famine situation for fundable projects in Impact 1.0.

Because of the lack of a marketplace, grant recipients, innovators, and implementers in Impact 1.0 often spend too much time on fundraising efforts. Grant applicants' information asymmetries attributable to the lack of the impact marketplace result in grant applicants' inability to apply to all potential target funding sources, making it harder for impact projects to establish a fundable reputation. Similarly, the lack of an impact marketplace can result in opaque decision processes from funders.

Carbon Credits

Carbon credits are a key Impact 1.0 innovation. While they were mostly a niche commodity in the fight against climate change, carbon credits have become a crucial tool competition-based tool in mitigating global greenhouse gas emissions. Purchasing carbon credits allows companies to produce CO₂ emissions and then offset those emissions from the purchased carbon credit.¹² Subsequently, carbon markets allow investors and companies to trade both carbon credits and carbon offsets simultaneously, creating a new market for these commodities. While these credits are actively traded on carbon credit marketplaces, there is no

¹² *The Ultimate Guide to Understanding Carbon Credits*, <https://carboncredits.com/the-ultimate-guide-to-understanding-carbon-credits/> (last accessed Jan. 9, 2024).

established national market in the United States for this trading. Only California has a formal cap-and-trade program.¹³ The amalgamation of evolving carbon credit standards, technological advancements, and market dynamics have shaped the impact trajectory for carbon credits in Impact 1.0. Impact 3.0 may follow the same trajectory with impact certificate marketplaces.

The historical origin of carbon credits can be traced back to pivotal international agreements aimed at mitigating climate change. The Kyoto Protocol of 1997 was a watershed moment that established flexible market mechanisms and three ways for countries to meet their emissions targets: International Emissions Trading, the Clean Development Mechanism, and Joint Implementation.¹⁴ The Clean Development Mechanism laid the groundwork for the trading of carbon credits, enabling developed nations to offset their emissions by investing in emission reduction projects in developing countries.¹⁵ The Kyoto Protocol also established International Emissions Trading which established carbon credits as a commodity that countries that had emission units to spare could sell to other countries that are over their targets.¹⁶ The transfer and acquisition of these units would be registered through a registry system established by the Kyoto Protocol and tracked through an international transaction log to facilitate international sales of carbon.¹⁷

Two types of carbon credits emerged from the original carbon

¹³ *Id.*

¹⁴ U.N. Framework Convention on Climate Change, What is the Kyoto Protocol?, https://unfccc.int/kyoto_protocol, (last accessed Jan. 9, 2024).

¹⁵ *Id.*

¹⁶ U.N. Framework Convention on Climate Change, Emissions Trading, <https://unfccc.int/process/the-kyoto-protocol/mechanisms/emissions-trading>, (last accessed Jan. 9, 2024).

¹⁷ *Id.*

credit trading market: allowances and offsets.¹⁸ In cap-and-trade frameworks such as the International Emissions Trading, participants receive a finite allocation of tradable emission allowances determined by a specified reduction objective.¹⁹ This finite allocation serves to amplify both the demand and pricing of these allowances. Conversely, offsets are products of baseline-and-credit mechanisms like Clean Development Mechanism or Joint Implementation, generating credits solely when new emission reduction initiatives exhibit additionality, meaning they result in greater emissions reductions than would have naturally occurred without the project.²⁰ The fundamental disparity lies in the origin of credits: allowance credits stem from direct reductions in an entity's carbon emissions, whereas offset credits involve the reduction, prevention, or elimination of carbon emissions in alternative locations, either within or external to the same entity.²¹

Over subsequent decades, carbon credits evolved in tandem with global climate policies, highlighting the importance of political engagement and compromise in Impact 1.0. The Paris Agreement of 2015 solidified their role as a linchpin in climate strategies. The Paris Agreement provided a framework for financial and technological evolution which sparked the creation of the Enhanced Transparency Framework (ETF).²² Under ETF,

¹⁸ Anja Kollmuss, Helge Zink, & Clifford Polycarp, *Making Sense of the Voluntary Carbon Market: A Comparison of Carbon Offset Standards*, WWF Ger. (Mar. 2008).

¹⁹ *Id.*

²⁰ *Id.*

²¹ Gary E. Marchant, Zachary Cooper & Philip Gough-Stone, *Bringing Technological Transparency to Tenebrous Markets: The Case for Using Blockchain to Validate Carbon Credit Trading Markets*, 62 NAT. RES. J. 159 (2022).

²² U.N. Framework Convention on Climate Change, The Paris Agreement: What is the Paris Agreement?, <https://unfccc.int/process-and-meetings/the-paris-agreement>, (last accessed Jan. 9, 2024).

starting in 2024, countries will report transparently on actions taken and progress in climate change mitigation, adaptation measures and support provided or received.²³

As with most technology-driven impact innovation in Impact 1.0 - 3.0, the objectives for carbon credit trading are evolving. While they were initially conceived to incentivize emission reductions in Impact 1.0, carbon credits have metamorphosed into multifaceted impact tools. The core carbon credit principles evolved to focus on integrity and transparency within the carbon credit market. These principles are pivotal in guiding the market toward effectively achieving emission reduction goals while maintaining trust and credibility. Multinationals are increasingly signing up for Science-based Targets, aligned to the goals of the Paris Agreement, committing to the use of offsets equivalent to only 5-10% of their overall emissions.²⁴ The purpose of these commitments is to maintain integrity and transparency and to ensure their credits are credible, both in the eyes of the public and of all stakeholders.²⁵ However, the pursuit of these objectives is not without challenges. Credibility remains a paramount concern. Foreshadowing the challenges of Impact 3.0, Impact 1.0 carbon credit trading had to ensure the accuracy and legitimacy of emissions reductions to maintain the credibility of these markets. Additionally, the principle that projects funded by carbon credits would not have occurred without such financing, and leakage, the risk of emissions shifting elsewhere, are critical factors in determining the real impact of these initiatives. These challenges are emulated in the Impact 3.0 impact certificate market.

²³ *Id.*

²⁴ Felicia Jackson, *Voluntary Carbon Markets Get an Integrity Floor*, FORBES (Apr. 4, 2023).

²⁵ *Id.*

Credential tracking is a key issue in Impact 1.0, as exemplified by the carbon credit market. Many companies that committed to achieving "net zero" carbon emissions failed in that objective. Particularly those companies that are dependent on carbon offsets sourced from agricultural and related undertakings are often in non-compliance with their net zero objectives.²⁶ The failure to enforce and monitor net zero commitments in Impact 1.0 foreshadows the issue of credential tracking in Impact 3.0, where the stakes are much higher. Any Impact 3.0 platform without WEB3 credential tracking systems is bound to encounter significant disruption over time. The Impact 1.0 disruptions associated with credential tracking provide important lessons in this context. Ascertaining a specific Impact 1.0 entity's adherence to its pledge poses considerable challenges. Assessing the actual actions of companies becomes an arduous task in Impact 1.0 without the transparency and accountability afforded by WEB3 systems, especially in the absence of mandated disclosure of comprehensive climate-related data and amidst the substantial variability in corporate commitments, rendering the benchmarking of progress nearly unfeasible.²⁷ With the problems of transparency and accuracy in mind, there is a considerable shortage of verified carbon emission credits in Impact 1.0.²⁸ Moreover, the concept of additionality, crucial to ensuring that funded projects are truly reducing emissions beyond what would have occurred naturally, poses a significant challenge in Impact 1.0. Establishing costly centralized validation and verification protocols that are already fully integrated in Impact 3.0 at the core of the WEB3 protocols is still essential in Impact 1.0 to fortify the credibility of carbon credits. Furthermore, the current state of the global voluntary carbon market is fragmented, with little uniformity and lacking transparency,

²⁶ Jocelyn Timperley, *The Truth Behind Corporate Climate Pledges*, THE GUARDIAN (July 26, 2021).

²⁷ *Id.*

²⁸ Gary E. Marchant, Zachary Cooper & Philip Gough-Stone, *Bringing Technological Transparency to Tenebrous Markets: The Case for Using Blockchain to Validate Carbon Credit Trading Markets*, 62 NAT. RES. J. 159 (2022).

which can undermine its effectiveness.²⁹ WEB3 systems in Impact 3.0 impact certificate markets equally address those issues of fragmentation, transparency, and associated effectiveness in Impact 3.0.

Carbon credit design in Impact 1.0 WEB2 designs can be optimized with WEB3-based Impact 3.0 architecture. Carbon credit markets in Impact 1.0 can be upgraded by WEB3 technology by providing a secure and transparent ledger. WEB3 technology upgrades in Impact 3.0 can mitigate concerns about data accuracy and help ensure the integrity of transactions in Impact 1.0.³⁰ Rewarding eco-friendly actions with money, called regenerative finance, or ReFi, is growing. New WEB3 technology can help upgrade the regular carbon market.³¹ Using WEB3 technology in this market could make it better by valuing saving nature instead of consuming nature. Web3 technologies have the potential to act as a contributing force that can make a meaningful and measurable impact in the fight against climate change for individuals, households, and communities across the world.³²

Standardization concerns in the carbon credit market in Impact 1.0 foreshadow the standardization issues Impact 3.0 impact certificate markets will encounter. WEB technology can help address the standardization issues encountered in Impact 1.0. For example, an industry-wide carbon sequestration standard for Carbon Credits, fortified by a transparent blockchain protocol, aimed at enhancing the prevailing voluntary carbon market

²⁹ Nicholas P. Espenan, *Improving Voluntary Carbon Markets Through Standardization and Blockchain Technology*, 23 WYO. L. REV. 142 (2023).

³⁰ *Id.*

³¹ Owen Baim, *Curbing Climate Change: An Analysis of the Blockchain's Impact on the Voluntary Carbon Market* (Apr. 20, 2023) (B.B.A. thesis, University of Michigan Stephen M. Ross School of Business) (on file with the University of Michigan Library).

³² *Id.*

framework within the United States could be a promising first step. This proposed standard would necessitate market participants to adhere to consistent and transparent reporting procedures, compelling the submission and divulgence of carbon inventory and methodologies by carbon registries operating in the United States.³³ The integration of a standardized carbon market and blockchain protocol is poised to facilitate self-governing reporting of all transactions involving carbon credits, spanning from inception to retirement.

Social Impact Credits

Social impact credits, in Impact 1.0 parlance, and social impact certificates, in Impact 3.0 parlance, refer to certificates or tokens created on a database or network to track, verify, or incentivize social impact activities or initiatives. Impact credits or certificates can be created in WEB2 - Impact 1.0 and WEB3 - Impact 3.0 contexts. Such impact credits are typically stored through the use of either centralized WEB2 or more decentralized WEB3 technology.

In a WEB3 Impact 3.0 context, impact certificates leverage the transparent and immutable nature of WEB3 technology to ensure the credibility, traceability, and accountability of social impact efforts. WEB3 Impact 3.0 technology presents a particularly promising avenue for tackling the inherent challenges within the impact investing sector.³⁴ By transforming non-financial value, such as impact, into trackable digital tokens, the technology facilitates the creation of impact tokens on a blockchain.

³³ *Id.*

³⁴ David Uzsoi & Patrick Guerdat, Report, *Impact Tokens: A Blockchain-Based Solution for Impact Investing*, INT'L INST. FOR SUSTAINABLE DEV. (2019).

Across Impact 1.0 and Impact 3.0, impact certificates are specifically designed to unlock investments for projects contributing to positive social and environmental impacts, aligning with the goals outlined in the SDGs.³⁵ Impact teams can “mint” a certificate of impact that is associated with their project and declare themselves to be the owners.³⁶ This can be as simple as making a public statement, analogous to acknowledging a funder. For example, at the bottom of a press release, an impact team could write “This post backs social impact certificate “XYZ”, which is now owned by XYZ as evidenced by this link. Or, you could post an offer to sell these certificates to philanthropists who express interest in purchasing them. By deciding which certificates they are willing to pay for, altruists using the system define the rules of the game.”³⁷

Social impact credits in Impact 1.0 bear some resemblance to the carbon credit marketplace in Impact 1.0. Yet, drawing a parallel with the carbon credit marketplace can be challenging: at their worst, carbon credits in Impact 1.0 are non-transparent, fraudulent and fail to mitigate climate change. Nonetheless, operational shortcomings do not necessarily invalidate the underlying theory, and a well-executed carbon credit system holds the potential to wield substantial influence in curbing climate change via Impact 1.0 systems.³⁸ Setting aside instances

³⁵ *Id.*

³⁶ Paul Christiano, *Certificates of Impact*, EFFECTIVE ALTRUISM FORUM (Nov. 10, 2014), https://forum.effectivealtruism.org/posts/yNn2o3kEhixZHkRga/certificates-of-impact#2_Certificates_of_impact.

³⁷ *Id.*

³⁸ Daniel Goodwin, *Exploring Impact Certificates: Could a New Certificate Make Funding Public Goods a Successful as Venture Capital?*, PUNK ROCK BIO (Jul. 5, 2022), <https://www.punkrockbio.com/p/exploring-impact-certificates>.

of inadequacy, the substantial influx of capital into carbon credits signifies a rationale, presumably poised to spur significant advancements in supply, demand, and market integrity (e.g., verification) in the near future.³⁹ Social impact models influence consumers' perceptions of venture legitimacy in Impact 1.0.⁴⁰ Legitimacy perceptions are, in turn, related to consumers' purchase intentions and willingness to recommend the venture to others. Therefore, social entrepreneurs in Impact 1.0 can appeal to consumers to create financially sustainable ventures through social impact models.⁴¹

Impact certificate markets in Impact 1.0 offer a potential solution to numerous challenges encountered by philanthropists in Impact 1.0. Primarily, they enable impact grantmakers in Impact 1.0 to entrust the task of selecting startups to profit-focused investors, investing their resources only in cases where a project aligns with their success criteria.⁴² This approach enhances the efficiency of funding allocation for Impact 1.0 funders focused on high-impact outcomes, potentially increasing it by one or two orders of magnitude.⁴³

Impact markets in Impact 1.0 are subject to a number of risks. Such risks include benign risks that can cause them to fail as well as more dangerous risks that can cause them to be harmful.⁴⁴ Impact markets, particularly those promoting retrospective funding and the resale of impact, carry a significant inherent

³⁹ *Id.*

⁴⁰ Jason Lortie, Kevin C. Cox, & Philip T. Roundy, *Social Impact Models, Legitimacy Perceptions, and Consumer Responses to Social Ventures*, 144 J. BUS. RSCH. 312 (2022).

⁴¹ *Id.*

⁴² Dawn (Denis) Drescher, *Toward Impact Markets*, IMPARTIAL PRIORITIES (March 14, 2022), <https://impartial-priorities.org/toward-impact-markets.html>.

⁴³ *Id.*

⁴⁴ *Id.*

risk: they may incentivize ventures prone to substantial net-negative outcomes.⁴⁵ This risk stems from the potential for individuals to benefit from causing positive impacts without bearing the costs if their actions result in negative impacts.⁴⁶ Furthermore, mitigating this risk in Impact 1.0 poses considerable challenges. Consequently, the establishment of impact markets in Impact 1.0 itself represents a risky undertaking. Impact 1.0 markets typically have more sellers than buyers and many potential buyers would have done those projects anyway thus removing the need for a secondary market.⁴⁷ This imbalance of high supply and low demand significantly reduces the “resale” value of generating social credits in Impact 1.0 and thus sellers would lose the financial incentive of selling the isocial impact credits in the first place.

Impact 2.0

The dramatic increase in private philanthropy since the turn of the century⁴⁸ triggered changes in endowment practices. Such changes in Impact 2.0 included modern charities transitioning

⁴⁵ Ofer & Owen Cotton-Barratt, *Impact Markets May Incentivize Predictably Net-Negative Projects*, EFFECTIVE ALTRUISM FORUM (Jun. 21, 2022), <https://forum.effectivealtruism.org/posts/74rz7b8fztCsKotL6>.

⁴⁶ ID.

⁴⁷ Chris Leong, *Making Impact Purchases Viable*, GREATERWRONG (Apr. 17, 2020), <https://ea.greaterwrong.com/posts/AMQg4hCRGFXaHzvsd/making-impact-purchases-viable>.

⁴⁸ Moore & Rutzen, *supra* note 2.

from advocates to investors.⁴⁹ Especially social and educational problems are increasingly being organized and addressed under the guise of new philanthropy or Impact 2.0. In Impact 2.0, philanthropists apply market-based solutions to modern problems.⁵⁰ Impact 2.0 philosophy blurs the lines between foundations, start-ups, social ventures, and venture capital.⁵¹ In Impact 2.0, the traditional grant-driven style of philanthropy of Impact 1.0 is increasingly giving way to entrepreneurial ventures in the context of charity,⁵² including through competitions that crown a winner who may be investable in follow-on rounds.⁵³ The Impact 2.0-driven reconfiguration of charitable work has resulted in corporate foundations and philanthropists assuming social and moral duties that had historically been fulfilled by civil society organizations like government and state agencies.⁵⁴

Participatory grantmaking

The participatory grantmaking model in Impact 2.0 is inspired by venture philanthropy. It presents several distinct upgrades from Impact 1.0 to Impact 2.0. First and foremost, participatory

⁴⁹ Phil Buchanan, *5 Issues Foundations Must Confront to Stay Relevant*, CHRON. PHILANTHROPY, June 2016, at 36; Alex Daniels & Rebecca Koenig, *How New Philanthropy Is Divvying Up the Charity Dollar: And why nonprofits fear they are losing out*, CHRON. PHILANTHROPY, Dec. 2017, at 18.

⁵⁰ Stephen J. Ball & Antonio Olmedo, *Global Social Capitalism: Using Enterprise to Solve the Problems of the World*, CITIZENSHIP, SOC. ECON. EDUC. (2011).

⁵¹ *Id.*

⁵² Alex Daniels & Rebecca Koenig, *How New Philanthropy Is Divvying Up the Charity Dollar: And why nonprofits fear they are losing out*, CHRON. PHILANTHROPY, Dec. 2017, at 18.

⁵³ Philanthropists who focus on the seeding of other businesses post impact investment are called philanthrepreneurs. Ball & Olmedo, *supra* note 50. https://www.researchgate.net/publication/275684301_Global_Social_Capitalism_Using_Enterprise_to_Solve_the_Problems_of_the_World

⁵⁴ Ball & Olmedo, *supra* note 50.

grantmaking fosters inclusivity by involving diverse stakeholders in the decision-making process, amplifying perspectives from different backgrounds and expertise. This approach enhances the relevance and effectiveness of funded projects, aligning them more closely with community needs.⁵⁵ Additionally, it promotes transparency and accountability, but without the WEB3 component upgrades, as the process becomes more open and comprehensible to both grantmakers and recipients. By incorporating elements of venture philanthropy, such as strategic thinking and performance measurement, the participatory grantmaking model encourages a more results-oriented approach, maximizing the impact of philanthropic investments and upgrading Impact 1.0 to Impact 2.0.⁵⁶

For example, a participatory grantmaking model known as the Impact Grants Initiative, is based on venture philanthropy.⁵⁷ It offered high engagement opportunities for previously unaffiliated local donors and community leaders while identifying high-performing nonprofits capable of making significant impact.⁵⁸ For example, it has been used by local Jewish communities as a community grantmaking model, called the "Jewish Communal Fund," to spark novel and international partnerships, cultivate new community leaders and philanthropists, generate more charitable contributions, and help make the fund not just a philanthropic catalyst but also a learning organization and emerging center for philanthropic

⁵⁵ Tyler Dale Hauger, *Nothing About Us Without Us: Innovating Grantmaking Processes With Participatory Methodology*, 36 *Innovation: Eur. J. Soc. Sci. Rsch.* 631 (2023).

⁵⁶ *Id.*

⁵⁷ Adin C. Miller, Elisa Gollub, Ilana Kaufman, & Adina Danzig Epelman, *The Impact Grants Initiative: Community-Participatory Grantmaking Modeled on Venture Philanthropy*, 6 *FOUNDATION REVIEW* 6 (2014).

⁵⁸ *Id.*

education and training.⁵⁹

Despite its upgrades to Impact 1.0, participatory grantmaking in Impact 2.0 encounters several challenges. Balancing inclusivity and efficiency can be complex, potentially leading to longer decision-making processes and increased resource allocation for facilitation. Ensuring meaningful participation from all stakeholders without dominance by particular voices or interests requires skillful facilitation and management which is costly. Moreover, there might be a learning curve for both grantmakers and participants in adapting to this collaborative decision-making approach. Establishing clear guidelines, managing conflicts of interest, and maintaining focus amidst diverse perspectives are ongoing challenges that need careful navigation within this model of grantmaking.

Impact measurement

Social impact measurement in Impact 2.0 refers to the process of assessing and evaluating the effects and outcomes of an organization's actions or initiatives on society or specific segments thereof.⁶⁰ It involves quantifying and qualitatively understanding the changes, benefits, or drawbacks resulting from these activities. Social impact measurement aims to gauge the effectiveness, relevance, and sustainability of interventions, whether they're undertaken by nonprofits, businesses, or governmental entities.⁶¹ It encompasses a range of metrics, both quantitative (such as numbers served, funds raised, or lives

⁵⁹ *Id.*

⁶⁰ *How to Measure Social Impact*, BRIGHTTEST, <https://www.brightest.io/social-impact-measurement#:~:text=A%20Definition,to%20an%20organization's%20direct%20actions>. (last accessed Jan. 11, 2024).

⁶¹ *Id.*

impacted) and qualitative (examples include changes in behavior, improved well-being, or community empowerment), allowing organizations to understand their contributions to societal welfare, refine strategies, and make informed decisions to optimize their social impact.⁶²

The benefits of social impact measurement in Impact 2.0 are numerous. Firstly, it enables organizations to demonstrate accountability and transparency to stakeholders, including donors, investors, and the public, thereby building trust and credibility.⁶³ Measurement helps in understanding what works and what doesn't, allowing for evidence-based decision-making and the allocation of resources towards the most effective interventions.⁶⁴ It also aids in communicating impact to attract funding or support, encouraging collaborations, and fostering continuous improvement by providing insights for refining strategies.⁶⁵ Furthermore, social impact measurement promotes a focus on outcomes rather than just outputs, ensuring that initiatives create meaningful and sustainable changes in society.

Impact measurement in Impact 2.0 is subject to several obstacles. Identifying, measuring and improving social impact is a significant challenge for corporate and private foundations, charities, NGOs and corporations.⁶⁶ One major challenge is the complexity of measuring intangible social outcomes in Impact 2.0, such as changes in attitudes, empowerment, or community

⁶² *Id.*

⁶³ Unmesh Sheth, *Why You Should Measure social impact?*, *SOPACT* (July 22, 2023) <https://www.sopact.com/perspectives/measure-social-impact>.

⁶⁴ *Id.*

⁶⁵ Chris Lau, *Why Should You Measure Your Social Impact?*, *JUNXION*, (Oct. 25, 2022) <https://junixion.com/insights/why-should-you-measure-your-social-impact/>.

⁶⁶ MARC J. EPSTEIN & KRISTI YUTHAS, *MEASURING AND IMPROVING SOCIAL IMPACTS: A GUIDE FOR NONPROFITS, COMPANIES AND IMPACT INVESTORS* (2014).

cohesion, which are often harder to quantify compared to straightforward metrics like funds raised or people served. Limited resources, including time, expertise, and funding, pose barriers for impact measurement in Impact 2.0, especially for smaller organizations or initiatives without dedicated evaluation capacities. Standardization and consensus on measurement methodologies and metrics remain elusive, leading to variations in approaches and sometimes hindering comparability across different programs or sectors.⁶⁷ Additionally, resistance to change within organizations, reluctance to embrace new measurement practices, and concerns about the potential administrative burden can impede the adoption of robust impact measurement frameworks. WEB3 solutions in Impact 3.0 can address many of these challenges.

The consulting business of impact measurement in Impact 2.0 typically involves specialized firms or consultants offering services to organizations, whether they're nonprofits, businesses, or government entities, to help them assess, evaluate, and enhance their social impact. These consulting services vary based on the specific needs and objectives of the client but they all follow a distinctly centralized business approach to impact measurement. Without crowd wisdom and community audit that are part of WEB3 Impact 3.0, such consulting practices can often be subject to single points of failure. Consultants specializing in this field offer a spectrum of services. This includes aiding organizations in defining social goals, establishing key performance indicators, and devising measurement strategies aligned with these

⁶⁷ Hans Rawhouser, Michael Cummings, & Scott L. Newbert, *Social Impact Measurement: Current Approaches and Future Directions for Social Entrepreneurship Research*, 43 *Entrepreneurship Theory & Prac.* 82 (2019).

objectives. They assist in data collection and analysis, utilizing diverse methods to gather and assess quantitative and qualitative data against predetermined metrics.⁶⁸ These professionals conduct comprehensive evaluations to gauge the effectiveness, efficiency, and sustainability of an organization's initiatives, determining their impact on social change.⁶⁹ Additionally, consultants provide capacity-building workshops to bolster an organization's internal capabilities for impact measurement, create compelling reports for stakeholders, and offer ongoing advisory services to refine and enhance social impact strategies based on evaluation outcomes.

Consulting firms in impact measurement often possess expertise in various methodologies, frameworks, and tools for assessing social impact across diverse sectors. They tailor their services to meet the unique needs and goals of each client, supporting them in enhancing their social contributions while aligning with their overall mission and objectives. While there isn't a universally standardized set of metrics for measuring social impact across all initiatives or sectors, several commonly used metrics and frameworks exist. These metrics aim to evaluate different aspects of impact and vary based on the specific goals, context, and nature of the program or organization. Some widely used metrics and frameworks include but are not limited to the following:

- **Social Return on Investment (SROI):** This metric quantifies the social value generated relative to the resources invested. It incorporates financial and non-financial

⁶⁸ See *Measuring the Social Impact of Corporate Investments*, DELOITTE, <https://www2.deloitte.com/us/en/pages/consulting/solutions/corporate-social-impact-measurement-metrics.html> (last accessed Jan. 10, 2024).

⁶⁹ *Id.*

outcomes, translating them into a monetary value.⁷⁰

- **Theory of Change:** This framework outlines the pathway of how activities lead to desired outcomes and impacts. It identifies key indicators and milestones along this pathway, providing a structure for measurement.⁷¹
- **Impact Reporting and Investment Standards (IRIS):** IRIS offers a catalog of standardized metrics used to measure social, environmental, and financial performance. It provides a common language for impact investors and organizations to report and compare metrics.⁷²
- **Global Reporting Initiative (GRI):** GRI provides a framework for sustainability reporting, including social impact metrics. It focuses on various dimensions of impact, such as human rights, labor practices, community engagement, and more.⁷³
- **United Nations Sustainable Development Goals (SDGs):** The SDGs offer a comprehensive framework encompassing 17 global goals with associated targets and indicators. Many organizations align their impact measurement with these

⁷⁰ Laura Arrillaga-Andreessen & David Hoyt, An Introduction to Social Return on Investment, Stanford Graduate School of Business Case Study No. SI65 (2003)<https://www.gsb.stanford.edu/faculty-research/case-studies/introduction-social-return-investment>.

⁷¹ Andrew Dillon, How to Measure Your Organization's Social Impact, Kellogg Insight (June 10, 2022) <https://insight.kellogg.northwestern.edu/article/measure-your-organizations-social-impact>.

⁷² *Impact Reporting and Investing Standards*, WATEREQUITY <https://waterequity.com/term/impact-reporting-and-investing-standards/> (last accessed Jan. 10, 2024).

⁷³ GLOBAL REPORTING INITIATIVE, <https://www.globalreporting.org/> (last accessed Jan. 10, 2024).

goals to demonstrate their contribution to global development priorities.⁷⁴

- **Benefit-Cost Analysis (BCA):** BCA assesses the net benefits generated by an intervention by comparing the costs incurred to the benefits achieved. It helps in understanding whether the social benefits outweigh the costs.⁷⁵

These metrics and frameworks are adaptable and can be tailored to suit specific contexts and objectives. While they provide guidance and a starting point, selecting the most appropriate metrics requires consideration of the organization's mission, stakeholders, and the nature of the interventions being evaluated. As a result, there's often a need to customize measurement approaches to best capture an organization's unique social impact.

Innovation & Impact Prizes

Impact innovation and impact prizes are a significant impact innovation contribution of Impact 2.0. Impact prizes follow the basic logic that applying teams will compete to complete core metrics for an impact prize. The hosting organization is then tasked to select the best team based on the chosen metrics which will then be presented to the donor of the prize.

As of the time of this writing several different innovation and impact prizes were available. For example, the iF SOCIAL IMPACT

⁷⁴ *Sustainable Development Goals*, U.N. DEP'T ECON. & SOC. AFFS., <https://sdgs.un.org/goals> (last accessed Jan. 11, 2024).

⁷⁵ RICHARD O. ZERBE & TYLER SCOTT, A PRIMER FOR BENEFIT-COST ANALYSIS, https://aisp.upenn.edu/wp-content/uploads/2015/09/0033_12_SP2_Benefit_Cost_000.pdf (last accessed Jan. 11, 2024).

PRIZE⁷⁶ invites projects contributing to societal betterment, prioritizing those aligned with the UN Sustainable Development Goals. Applications are free, with an annual donation of EUR 100,000 from iF Design supporting selected projects. Eligible projects must be established, allowing a maximum of two applications per project, excluding student concepts.

Additionally, there are various specialized prizes that target distinct goals. The 2030 Social Impact Special Prize⁷⁷ aims at European startups addressing inequality, particularly focusing on UN SDGs 1, 3, 4, 8, 9, 10, 11, and 16. DBS Foundation's global, regional, and local awards spotlight innovative entities addressing urban social and environmental challenges.⁷⁸ Similarly, the F. M. Kirby Prize⁷⁹ recognizes impactful enterprises globally, amplifying solutions to social or environmental issues, valuing courageous leadership and proven traction. XPRIZE operates by identifying global challenges, designing competitions around them, attracting diverse participants worldwide, evaluating solutions against specific criteria, awarding substantial prizes, and supporting the implementation of winning solutions for real-world impact.⁸⁰ These competitions aim to spur innovation, collaboration, and progress in addressing significant global challenges.

⁷⁶ *iF Social Impact Prize*, iF DESIGN, <https://ifdesign.com/en/if-social-impact-prize> (last accessed Jan. 11, 2024).

⁷⁷ *2030 Social Impact Prize*, TORINO SOCIAL IMPACT, <https://www.torinosocialimpact.it/en/activities/2030-social-impact-prize/> (last accessed Jan. 11, 2024).

⁷⁸ *Social Impact Prize: Calling for Bold ideas for a better world*, DBS BANK, <https://www.dbs.com/foundation/our-support/social-impact-prize> (last accessed Jan. 11, 2024).

⁷⁹ *F.M. Kirby Prize for Scaling Impact*, Duke University Fuqua School of Business CASE, <https://centers.fuqua.duke.edu/case/practitioners/funding/kirby-impact-prize/> (last accessed Jan. 11, 2024).

⁸⁰ XPRIZE FOUNDATION, <https://www.xprize.org/> (last accessed Jan. 11, 2024).

Lastly there is the new xFoundry@UMD prize through their Xperience program.⁸¹ Xperience unites all 12 schools and colleges at UMD to confront significant societal challenges. Through an integrated resource ecosystem, they look to facilitate seamless collaboration, knowledge management, and investment opportunities to sustain their programs. Guided by a multidisciplinary curriculum and annual targeted competitions, students not only earn academic credits but also stand a chance to launch well-funded ventures. Each Xperience cohort focuses on a distinct challenge within seven competition domains, aligning with real market needs and investor interests. The ultimate reward is a new venture with funding ranging from \$250K to \$2M, supported by an external CXO network for success, with student team members becoming integral co-founders, and earning extensive local and national press coverage. Xperience wants to cultivate a dynamic exchange of ideas and merge creative expression and critical thinking across disciplines to propel teams toward groundbreaking solutions and transformative impact. It's an immersive program transcending academics, inviting teams to compete, innovate, and emerge as pioneers tackling society's grand challenges.

Impact 3.0

Impact 3.0 builds on the accomplishments of Impact 1.0 and 2.0. Yet, it takes impact investing innovation beyond the current trajectory and enables impact investments to turn into for-profit scaling ventures. Impact 3.0 scales through a combination of: a.) collaborative giving community, b.) funding

⁸¹ *xFoundry Xperience*, UNIVERSITY OF MARYLAND xFOUNDRY, <https://xfoundry.umd.edu/xperience> (last accessed Jan. 11, 2024).

a mix of effort, via non-profit grants, and results, via post-grant for-profit ventures that launch after impact verification via collaborative communities, and c.) certification of impact via listing of impact certificates.

WEB3 technologies for community governance provide a distinguishing feature of Impact 3.0. Whereas WEB2 technology limits the applications and uses of social impact certificates, WEB3 technology enables an ever-expanding variety of social entrepreneurs, impact activists, donors, and impact investors to collaborate. In particular, emerging WEB3 technology allows impact certificates to expand the Impact 1.0 market for carbon credits beyond the current emphasis on carbon emissions. By broadening the scope of impact trading via impact certificate issuance, impact measurement, and verification expands in scope and scale.

Unlike Impact 1.0 and 2.0, Impact 3.0 allows the funding of a mix of effort and verifiable results. Funding effort alone is possible through the regular grant screening process that eventually may lead to an impact certificate issuance. But, Impact 3.0 also funds verifiable results. WEB3 expert communities verify the attained impact of a team before the impact certificate listing. Moreover, this initial result of a verified project is ideal typically only partially funded with an initial release of assets, which in turn triggers the impact certificate listing. Subsequent results of the listed impact team are screened for each subsequent release of impact certificate fractions. Such fractions are released to the larger donor market. If the larger donor market should not purchase the impact certificate fractions, the original underwriting donor community has underwritten the impact certificate listing.

Through firm commitment underwriting of impact certificate listings, the project team and the investing community obtain assurances that the entire impact certificate listing will be purchased, including all fractions of impact certificates, if the respective impact milestone deliverables are upvoted by the respective WEB3 expert community.

Key to the potential of Impact 3.0 is the listing of impact certificates on an impact certificate marketplace. Through the listed impact certificates, impact projects demonstrate their ability to perform verifiable impact. Unlike Impact 1.0 and 2.0 where projects may receive funding despite a lack of impact verification, Impact 3.0 only allows project funding if projects are verified and demonstrate impact via milestones. To ensure impact verification, projects are listed on the impact certificate marketplace only after they have either: a.) won a competition (utilizing an Impact 2.0 idea), or b.) received an upvote from a community of experts utilizing a decentralized voting design.⁸²

Through the impact certificate marketplace, Impact 3.0 expands Impact 2.0 initiatives of participatory grantmaking, impact measurement, and competitions. Impact certificates expand the ideas of participatory grant giving in that they allow projects to apply directly and seek impact certificate listing status. Moreover, the impact certificate marketplace epitomizes impact measurement but does so through more decentralized means that allow the impact projects and the overall impact marketplace to scale directly. It awards the verified winners of the

⁸² Craig Calcaterra, Wulf A. Kaal, & Vlad Andrei, *Blockchain Infrastructure for Measuring Domain Specific Reputation in Autonomous Decentralized and Anonymous Systems*, Univ. St. Thomas (Minn.) Legal Stud. Rsch. Paper No. 18-11 (February 18, 2018), <https://ssrn.com/abstract=3125822>.

competition and impact community upvotes immediately through impact certificate listing. In contrast with Impact 1.0 and Impact 2.0 it creates a much broader primary and secondary market for good.

Impact 3.0 is configurable and therefore allows donors to use a conventional innovation fund with traditional Impact 1.0 and 2.0 features or upgrade it materially with Web3 features. Such WEB3 features may include but are not limited to the following:

- **Donor Crowd Wisdom** - WEB3 community structures allow donors to collaborate for increased impact without losing control. By voting on donation outcomes, the donor community exercises crowd wisdom. In the chosen WEB3 governance design it is possible for the entire donor community to see the outcome of the vote in a "test or informal vote". Once every donor sees how all other donors assess the given project, they can jointly change their minds during the "formal vote" in which their respective reputation tokens are at stake. Typically, in this form of decentralized governance, all decisions are made with unanimity.
- **Legal Separation** - WEB3 community engagements facilitate unique legal solutions that ensure tax recognition in the chosen 501c3 and legal separation and limited liability for the donor community. In this legal structure, donor WEB3 communities are not directly represented in the 501c3 for tax reasons but can still exercise significant influence over the donations by showing their considerations and voting outcomes as it pertains to impact teams that may or

may not qualify for donations.

- **Primary and Secondary Markets** - WEB3 impact certificate listings enable WEB3 donor community reinvestment of commercial upside of innovation through the resale of impact certificates in a secondary market. The primary market of donor investments into impact certificates provides for firm commitment underwriting of impact certificates. This ensures market certainty and team success. In the secondary market, donor WEB3 communities can resell the impact certificates with the upside of secondary market pricing structures and open market supply and demand.
- **Project due diligence** - incoming impact projects are subjected to a rigorous sequence of due diligence measures entailing core competencies of the applying team expertise and participatory decision making. While different measures can be used to pre-screen impact team applications to filter out non-viable candidates, Impact 3.0 applies WEB3 community software toolsets to empower expert communities with decentralized governance and reputation logic. The upvotes of the expert communities function as a due diligence review that is fully transparent to all constituents, including primary market donors, underwriting donors, and secondary market participants. Such expert community assessment becomes an integral part of the pricing of impact certificate fragments in both the primary and secondary markets.

- **Funding effort & impact** - Impact certificates allow parts of a grant to be contingent on effort while other parts are contingent on the success and impact verification of the project. This duality of funding effort and impact creates a hybrid form of investments between Impact 1.0 and Impact 2.0. It improves the Impact 1.0 traditional model of "pay for process", aka. If a project performs certain metrics nominally, it may receive funding. The Impact 3.0 hybrid form of impact investment also improves upon Impact 2.0 by upgrading price competition and pay for performance. It does so by creating a tangible Impact investment market through impact certification.
- **Collaboration** - Whereas Impact 2.0 incentivized competition and associated enhanced performance for grant money, Impact 3.0 via impact certificates incentivizes a larger engagement for all stakeholders. All stakeholders in the impact certificate model, including impact teams, donors, primary and secondary market participants, and the impact certificate marketplace operator participate in the market and collaborate for a greater outcome for all involved. Impact teams benefit from collaboration because their project gets funded and has secondary market upside and scaling opportunities after impact certificate listing. Donors benefit because they obtain assurances that their donations are fulfilling their purpose and have long-term impact upside and scaling opportunities for future growth. Primary and secondary market participants benefit from enhanced transparency and certainty in the Impact 3.0

impact certificate market, as compared with Impact 1.0 and 2.0. The impact certificate marketplace operator benefits from collaboration as the percentage fees of successful projects are presumably higher than the fees of projects that don't succeed. Setting up collaboration-driven checks and balances WEB3 approach to impact verification benefits all constituents long-term.

- **Repeatability, enthusiasm, new market entrants** - the collaboration, due diligence, funding logic, and primary and secondary markets in impact certificates enhance efficiency in the impact certificate market, allowing it to scale and prove efficacy to future donors & participants. The ongoing impact community interaction and measurable impact outcomes demonstrated through impact certificate issuance ensure that existing donors stay engaged and new donors are easier to attract. New donors, excited by tech-forward Impact 3.0 giving models, will expand philanthropy resources over time.

A number of WEB3 startups have attempted to optimize the market for impact certificates in accordance with the above-illustrated principles. Many have failed. For example, the Ethereum community has proposed using protocol-generated revenue and a results oracle to create a startup-style funding cycle for public good projects. The results oracle, operating as a DAO, finances these projects retroactively, rewarding the impact teams that contributed value.⁸³ It can distribute rewards to

⁸³ Optimism & Vitalik Buterin, *Retroactive Public Goods Funding*, MEDIUM (Jul. 20, 2021), <https://medium.com/ethereum-optimism/retroactive-public-goods-funding-33c9b7d00f0c>.

three types of addresses: individual or organizational, fixed allocation tables, and project tokens representing contributions.⁸⁴ For the first two, funds are sent directly or via allocation tables. Project tokens introduce a prediction market concept, allowing the Results Oracle to set a price floor by purchasing tokens based on the allocated reward and token supply.⁸⁵ The key downside of these types of oracles in DAO format are decentralized governance attack vectors. In other words, even if the core concept of resource distribution works well enough, the overall project is typically subject to the downsides that derive from lack of attack resistance of the governance design.

Another WEB3 technology-based optimization attempt for impact certificates is the implementation of Hypercerts. A Hypercert "is an interoperable data layer for impact-funding mechanisms. Each hypercert is an impact claim described by (1) the scope of work that has been (or will be) performed in a given time period by a set of specified contributors and (2) the scope of impact that this work has had (or will have) in another given time period. In addition, a hypercert has the potential to declare which rights the owner of the hypercert has, e.g. the right to publicly display the hypercert."⁸⁶ Hypercerts can function as NFTs stored on public, verifiable blockchains, ensuring immutability which amplifies transparency and traceability and subsequently reduces transaction costs across the entire system.⁸⁷ This would also allow the ability to merge and split hypercerts along different dimensions which is useful if funders

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ Holke Brammer, *Hypercerts: A New Primitive for Public Goods Funding*, PROTOCOL LABS (Aug. 24, 2022), <https://protocol.ai/blog/hypercert-new-primitive/>.

⁸⁷ *Id.*

only want to pay for particular aspects of a project, rather than pay into a general fund for a project.⁸⁸ Ultimately, Hypercerts serve a tri-fold purpose: they establish clear identifiability by documenting contributors, the scope of work, and timeframes involved, enabling multiple records of the same work to identify distinct impacts.⁸⁹ These public and immutable records ensure traceability and permanence, facilitating durable documentation.⁹⁰ Additionally, these digital assets allow ownership transfer under specific conditions and fractionalization, granting various rights to owners related to retrospective rewards, public display of support, or passive income from intellectual property.⁹¹ Notably, a hypercert defines the work undertaken without specifying the precise impact size, leaving that evaluation to external assessments of the covered aspects within the defined timeframe. Like other optimization attempts, Hypercerts often lack the require verification of impact inputs in decentralized governance settings that are attack proof.

Collaborative Giving Communities

WEB3 Communities are the key component of Impact 3.0. Scaling social impact is made possible through WEB3 community governance. Several core WEB3 communities are needed for the scaling of social impact and to upgrade the existing philanthropic model. Among those communities are the donor community itself and the contractor community of individuals who

⁸⁸ *Id.*

⁸⁹ *Hypercerts: A new primitive for impact funding systems*, HYPERCERTS FOUNDATION (Feb. 14, 2023), https://hypercerts.org/docs/assets/files/hypercerts_whitepaper_v0-3e54f05fe1358373c4f32610dd4fb391.pdf.

⁹⁰ *Id.*

⁹¹ *Id.*

work for the donor community and provide expert validation of impact services to the donor community.

The donor community in this model will not pool assets and it will not take custody of donor assets. Instead, the donor community will make decentralized WEB3 governance decisions on impact projects seeking funding. While such decisions are internally binding to the donor community and have a binding effect on the legal wrapper used by the donor community, as the case may be, they have no binding legal effect on the 501c3 that collected the donor assets. While the 501c3 board is not bound by the decisions of the donor community, in effect it will adhere to the publicly visible voting and staking outcomes of the donor community on their chosen blockchain or centralized database. Not adhering to the choices made by the donor community risks the 501c3 board and its long-term client base.

The second key community is the community of experts in a given field. The expert community is made of individuals who work for the donor community and provide expert validation of impact services to the donor community. Given the broad variety of expertise that may be needed by the donor community to assess due diligence outcomes to make impact investment decisions, it is conceivable that the donor community will over time hire many different expert communities. While centralized service providers can provide expertise and due diligence inputs, centralized service providers often lack crowd wisdom inputs and necessitate agency structures to supervise their work. Such agency structures can become expensive. Expert communities can be set up quickly and self-organized through a software suite of WEB3 governance. Agency structures used in centralized legacy system service providers become obsolete. The automation of expert community creation and self-organization brings down

costs and creates economies of scale in impact investing.

The interplay between the expert community and the donor community is driven by the stalking behavior of the majorities in the respective communities. For example, when the expert community considers a project for funding. That decision and staked upvote by the donor community triggers the associated due diligence job for a given expert community. Once the evaluation job is posted on the expert community board. A given member of the expert community will stake reputation tokens to be chosen by the expert community to perform the job. Once the job is finished and posted on the expert community forum, the expert community evaluates the job and votes on the job. The first vote is informal, the second vote is formal. This duality of votes allows for consensus building for each engagement,⁹² where the overwhelming majority of decisions are unanimous.

The mechanics of WEB3 community decisions in the impact certificate marketplace design revolve around reputation token staking. Reputation tokens are non-fungible tokens that are chain agnostic in design and can be implemented through a blockchain-connected client across any layer I blockchain. The use of weighted reputation voting has key advantages over other WEB2 and WEB3 one-token-one-vote voting mechanisms. It aligns incentives for donor community members individually and at the same time calibrates their incentives with the overall community. Donor community members act for themselves as individual utility maximizers while at the same acting on behalf of the interests of their community of donors. This is all visible in the staking engagements of each donor community member and the voting outcomes of the entire community.

⁹² Calcaterra, Kaal, & Andrei, *supra* note 82.

Reputation staking changes the incentive design for Impact outcomes. Unlike Impact 1.0 and 2.0 where voting decisions were not part of the design typically, in Impact 3.0, the donor community makes collective decisions by staking reputation tokens to define core impact fund mission and goals, to propose impact targets and bounties, similar to XPRIIZE,⁹³ approve specific grant applications, and decides organizational governance questions. This level of public engagement and for-good public decision-making allows for a level of public scrutiny and associated public engagement that is unprecedented in the history of philanthropy.

Impact Certificate Marketplace

The marketplace for impact certificates can be described as a “much broader for-good carbon credit marketplace.” Whereas in the traditional carbon credit marketplace the offset offered to polluters through the acquisition of carbon credits enables impact outcomes, in the impact certificate marketplace the definition of “impact” is entirely different and much broader. Impact 3.0 via the impact certificate marketplace can involve any kind of impact and for-good engagement that finds validation via impact certificate listing. Impact 3.0 via impact certificates is limited by market participants’ choices. If market participants don’t purchase impact certificates post-listing, those projects whose impact certificates do not find purchasers are less likely to proliferate and find commercial applications long-term.

⁹³ XPRIIZE FOUNDATION, <https://www.xprize.org/> (last accessed Jan. 11, 2024).

Impact creation in Impact 3.0 via the impact certificate marketplace may be more defined by the start of an era of impact creation and less so as a toolset for impact. In 2024, the market place for impact certificates has the required WEB3 technology solutions that can help is scale impact 3.0. The growth trajectory of Impact 3.0 via the impact certificate marketplace depends on the donor market realization and appreciation of the efficiencies created by impact certificates. Other dependencies for the growth of Impact 3.0 include donors' willingness to try out a new technology-based impact scaling solution by running parallel tracks in their donative efforts, overall growth of philanthropy, tech matching between impact solutions in impact projects and impact certificate listings, critical mass of impact certificate listing, standardization of impact certificates, broadening of funding sources for Impact 3.0, and credential tracking in Impact 3.0. Given these dependencies, a smaller subset of the philanthropy market will be attracted to impact certificate markets. It may take five to ten years for the impact certificate marketplace to fully establish itself and scale in impact donor circles. Scaling here also include opening up new donor markets that had previously not considered impact investments but are attracted to the impact certificate marketplace because of its Impact 3.0 efficiencies, transparency, and accountability.

Historical examples of social impact tokens in Impact 3.0, akin to impact certificates in Impact 3.0, include SolarCoin⁹⁴, a WEB3-based solar energy incentive; Fishcoin⁹⁵, a WEB3-based data

⁹⁴ *SolarCoin: A Blockchain-Based Solar Energy Incentive*, SolarCoin <https://www.allcryptowhitepapers.com/solarcoin-whitepaper/> (last accessed Jan. 11, 2024).

⁹⁵ *Fishcoin: A blockchain based data ecosystem for the global seafood industry*, FISHCOIN, [hyperlink] (last accessed date).

ecosystem for the global seafood industry, Soulbound⁹⁶ Tokens, non-transferable digital identity tokens representing an individual's unique identity by incorporating unique traits, characteristics, or background and may include the person's medical history, work records, or other information belonging solely to that individual. Another project example of Social Impact Tokens is the "Impact Token Project," which represents the nexus of economic theory, blockchain technology/philosophy and the remarkable research and efforts of Social Good Ecosystem participants and seeks to bring together an ideal system for social good.⁹⁷ The EG Token⁹⁸ offers a direct channel for passionate donors eager to witness the tangible outcomes of their contributions. Through donations to the EG Social Impact wallet, every dollar is meticulously traced via WEB3 technology until it reaches its intended impact point. Recipients then document and share these impacts with both the community and a broader audience.⁹⁹ Additionally, the EG community actively identifies and celebrates volunteers who actively drive positive change while retail investors trading the EG token allocate 5% of token fees toward funding social impact initiatives.¹⁰⁰

The impact certificate marketplace creates several core benefits for philanthropy in Impact 3.0. First and foremost, the impact certificate marketplace significantly increases the efficiency and effectiveness of grant-making by retaining the value of all the impact work of existing grantor networks while at the same time upgrading it with a technology platform for impact

⁹⁶ Kajol Wadhvani, *A Comprehensive Guide to Soulbound Tokens*, SOLULAB, <https://www.solulab.com/soulbound-tokens-guide/> (last accessed Jan. 11, 2024).

⁹⁷ IMPACT TOKEN PROJECT, <https://www.impacttokens.com/> (last accessed Jan. 11, 2024).

⁹⁸ EG TOKEN, <https://www.egtken.io/token> (last accessed Jan. 11, 2024).

⁹⁹ *Id.*

¹⁰⁰ *Id.*

certificates. Furthermore, the impact certificate marketplace facilitates the next generation of improved collaborative grant-giving by integrating the benefits of WEB3 for representative organizations and elevating the presence and transparency of impact projects around the globe. Through these enhanced efficiencies, the impact certificate marketplace boosts the capacity of donor networks to fundraise and present a more unified approach. It also builds much-needed bridges between collaborative grant-giving networks, all of whom can enhance their grant-giving work through the impact certificate marketplace. Collaboration of collaborative grant-giving networks through the impact certificate marketplace, in turn, enables a learning experience through which Impact 1.0 and 2.0 networks can together with Impact 3.0 networks complement each other and strengthen joint for-good advocacy and mobilization approaches. Finally, the impact certificate marketplace enables upgrades to philanthropy through technology inclusion combined with collaborative learning for collaborative grant-giving networks around programmatic and operational inclusion.

Donor syndicates particularly benefit from the impact certificate marketplace. First and foremost, donors' individual agendas are largely removed by engaging through the impact certificate marketplace. Donors become incentivized to collaborate through membership in a donor community. The voting outputs of the donor community enable all individual donors to voice their preferences and work with the other donor community members to achieve their joint desirable donation allocations. The impact certificate marketplace also updates Impact 1.0 and 2.0 fee models through a modern donation allocation model. Through the joint donor community engagements via the WEB3 voting engine, donor community members cannot fund outlier

projects because of personal agendas. The donor community's collective wisdom, as instantiated through the WEB3 governance voting outcomes of the community, ensures capital is continuously optimally allocated.

Follow-on donors and donor syndicates also benefit from the impact certificate marketplace. the transparency of the donor communities' WEB3 voting outcomes supports the secondary market and for-profit follow-on investments as due diligence support for seed investments. Once the donor community and expert community upvoted a given project, the secondary market has deal access through the impact certificate listing. Projects that completed the impact certificate listing process have received multiple levels of due diligence including but not limited to the following - Donor community upvote for due diligence qualification - Expert community upvote (due diligence of the project) - Donor community vote to allocate funding to project for milestones in the form of underwriting the project's impact certificate issuance - donor market purchase of impact certificate fractions. Follow-on donor syndicates benefit from the impact certificate marketplace fee model that is competitive with Impact 1.0 and 2.0 fee models. Deal access for follow-on donor syndicates is significantly enhanced which lowers the cost of deal origination significantly. Finally, the wisdom of the crowd in the respective WEB3 communities of the impact certificate model upgrades the existing fund allocation model which was afflicted by uninformed voters, sockpuppets, and other gamesmanship, voting with nothing at stake, voting with other people's money. The marketplace for impact certificates benefits from access to WEB2 and WEB3 funding sources. WEB2 funding sources are mostly traditional donations and pledges. WEB3 funding sources are much bigger as they allow the resale of

impact certificates and equity sales in companies built on the innovations coming out of the impact certificate listing.

Roadmap for Impact 3.0

As Impact 3.0 evolves, Impact 3.0 market participants are seizing opportunities and tackling associated challenges across the impact industry in different market sectors and beyond. While core components of Impact 3.0, including but not limited to WEB3 Community toolsets and the impact certificate marketplace, are pushing the boundaries of existing impact markets and creating new opportunities for impact investments in the process, those components alone are the foundation of Impact 3.0 but need support structures. Those support structures are emerging in lockstep with the Impact 3.0 evolution and include impact scaling solutions, the standardization of Impact 3.0 impact certificates, and enhancements in Impact 3.0 funding solutions. Many other opportunities and challenges will emerge as Impact 3.0 continues to thrive.

The roadmap for Impact 3.0 necessarily includes addressing open issues identified by the Impact 3.0 community. Among those issues are standardization of Impact 3.0 impact investing via impact certificates and meeting the financing requirements of the United Nations Sustainable Development Goals (SDGs).¹⁰¹ Blockchain technology emerges as a promising solution to overcome these challenges within the impact investing sector. By transforming non-financial values, like impact, into trackable digital tokens, known as impact certificates, blockchain facilitates investments for projects contributing positively to social and environmental causes aligned with the SDGs.¹⁰² Many

¹⁰¹ Uzsoki & Guerdat, *supra* note 34.

¹⁰² Uzsoki & Guerdat, *supra* note 34.

current blockchain projects critically lack usage of existing social impact evidence in design and management, posing future challenges.¹⁰³ If cryptotokens are to be adopted as tools that can contribute to achieving the SDGs, they must leverage desired behaviors in an ethical, efficient, and sustainable manner.¹⁰⁴ Impact certificate technology, while emerging, needs to reliably certify that the certificate was issued by the group or individual that performed the associated activity and the certificate needs to be uniquely associated with that activity.¹⁰⁵ In essence, impact certificate purchasers should be willing to pay the same amount for a valid certificate of XYZ that they would be willing to pay to support cause XYZ to happen (and keep the resulting certificate).¹⁰⁶ In other words, in a perfect world of a functioning impact certificate marketplace, a philanthropist should be indifferent as to whether spending money to do a good deed or paying someone else to do it, provided the philanthropist gets the entire certificate for that good deed.

Scaling Impact 3.0

Community toolsets in Impact 3.0 verify impact efficiently. Unlike impact verification in Impact 2.0, including but not limited to impact screening via competitions, community-based impact verification in Impact 3.0 allows impact systems to scale because the verification can be set up instantaneously without the need to pay centralized organization intermediaries.

¹⁰³ Iain Barclay, Michael Cooper, Jakob Hackel & Paul Perrin, *Tokenizing Behavior Change: A Pathway for the Sustainable Development Goals*, 4 FRONTIERS IN BLOCKCHAIN (Jan. 2022), <https://doaj.org/article/bf4f69994d1d4633a0dd6e8af9bed507>.

¹⁰⁴ *Id.*

¹⁰⁵ Christiano, *supra* note 36.

¹⁰⁶ Christiano, *supra* note 36.

WEB3 community toolsets facilitate an unprecedented level of impact system enablement at scale. This pertains not just to the projects, that are listed on the impact certificate platform and marketplace, and their ability to utilize impact community toolsets but also to the impact certificate platform and marketplace itself.

A key component for impact scaling enabled through Impact 3.0 community governance and the impact certificate marketplace is philanthropy stakeholder alignment. Stakeholder alignment here pertains to all stakeholders in Impact 3.0, e.g. funding sources, donors, primary market impact investors, impact investors in the secondary market, impact fund operators, impact intermediaries, industry experts, donor communities, expert communities, impact projects, and past grantees. Impact 3.0 community governance and impact certificate align impact stakeholders because they directly benefit each stakeholder while creating synergies and knock-on effects for all stakeholders.

Take, for instance, the donor communities. Impact 3.0 enables the collaboration of donors in donor communities to tackle grand challenges that need to be addressed by the donor community in conjunction with other stakeholders. Impact 3.0 benefits donors by maximizing measurable impact through donor and expert community verification of impact projects. Donors participate in fund allocation and due diligence through collaboration with expert communities. The collaboration, in turn, enables constant learning by doing and evolutionary innovations in impact technology for participatory decision-making.

Donor support organizations, such as family offices, foundations, fiscal sponsors, and centralized support organizations, benefit from Impact 3.0 features. Donor support organizations benefit because the quantity and quality of their impact contributions are enhanced, creating economies of scale. For example, fiscal sponsors who support Impact 3.0 systems can optimize, automate, and streamline their work processes in a WEB3 environment. Once automated, many impact-related processes create knock-on effects on others. For example, WEB3-powered impact process optimization, including but not limited to WEB3 community governance, facilitates enhancements in impact measurements which in turn creates economies of scale for philanthropy overall. As the Impact 3.0 industry grows, donor support organizations benefit from a growing pipeline of Impact 3.0 deals. Donor support organizations grow with Impact 3.0 by maintaining and increasing their donor bases and increasing funding levels. Those benefits are, however, contingent on Impact 3.0's ability to attract highly effective fundable projects.

High-impact non-profit projects also benefit from the Impact 3.0 design. Impact projects benefit from Impact 3.0 because fundraising becomes more efficient. Whereas in Impact 1.0 and 2.0, projects had to appeal often to donors directly via multiple rounds of pitches and long-winded fundraising processes, in Impact 3.0, once a project applied on the impact certificate marketplace for impact certificate listing, it is available for grant funding directly. Intermediation is largely removed in Impact 3.0, which lowers overall cost. Through the project application process, Impact 3.0 builds a funding pipeline for new projects. However, funding is not limited to project completion. Follow-on funding rounds are likely if a

project demonstrates impact at the end of the initial funding round via grant, especially if there are commercial applications in a given impact project. In comparison with Impact 1.0 and 2.0, where projects often create impact outcomes that are funded in silos, Impact 3.0 allows for continuous funding throughout the development process and after. All funding stages are accompanied by feedback effects through the respective communities and their involvement in impact certificate fraction releases. a Projects are also rewarded for incremental steps

Businesses looking to demonstrate social impact benefit from Impact 3.0. The transparency of listing impact certificates provides businesses with direct access to impact project funding opportunities. Businesses can match their needs with the specific criteria of projects as listed on impact certificates and on the background information sheets. Businesses can increase their brand value through the association with and investment in impact certificates. Alignment with certified impact in Impact 3.0 also allows businesses to offset other non-impact or publicly perceived non-impact business engagements. For example, the tobacco industry could invest in a lung cancer impact certificate to offset their contributions to lung cancer. Moreover, businesses that invest in impact certificates may expect to attract impact-focused investors and talent. This ESG market is becoming increasingly important for businesses worldwide. Businesses that invest in impact certificates can protect their social licenses or, for example, their B-Corp Certification to operate. Finally, the transparency afforded by impact certificate markets can guide giving to high-impact, high-potential need areas where the business-driven impact investment can have the greatest impact.

Scaling impact is also facilitated by the technology-based fairness principles, transparency, and accountability of the WEB3 technology logic upon which the impact certificate marketplace was built. The smart WEB3 contracts that power the operations of the impact certificate marketplace prohibit and make impossible the extension of favors to individual donors. Unlike Impact 1.0 and 2.0 deals where the highest pledging impact donor could get special considerations and other favors, the smart contract of the Impact 3.0 impact certificate marketplace is tamper-proof and fully transparent on the blockchain. Accordingly, the impact certificate marketplace does not influence how impact certificates are funded. Donors who funded a given project that listed impact certificates cannot obtain better terms than other donors in the impact certificate market. The transparency and accountability of WEB3 technologies upon which the impact certificate marketplace was built create certainty of outcomes. Certainty, in turn, creates investor confidence based on which markets in impact certificates can grow.

Greenwashing can be significantly curtailed through the impact certificate marketplace. Because funding only goes to trackable progress in impact certificates that are fully transparent and accountable, greenwashing of projects and donors is much more difficult. The transparency afforded by impact certificate trading and blockchain storage of associated data makes the impact certificate marketplace publicly auditable at any time. Regulators have full access to data at a moment's notice. Through this transparency any form of nominal but not substantive impact stories published by impact certificate purchasers and impact certificate listing projects can be invalidated instantaneously by any market participant, not just

insiders as in the WEB2 and legacy equivalents. The public fallout of greenwashing misstatements is likely to be more pronounced in the impact certificate marketplace as its entire logic is built on impact transparency and accountability. The WEB3 accountability enhancements in the impact certificate marketplace curtail traditional notions of greenwashing while at the same time increasing trust in impact projects. The enhanced greenwashing protections and trust enhancements, in turn, allow the impact certificate marketplace to support a new proliferation of impact investing and innovation.

Standardizing Impact 3.0

Standardization of impact certificates is a key challenge for Impact 3.0. In other words, how can we ensure that impact certificate trading is coherent and follows pre-established standards that market participants adhere to? The standardization of impact certificates will require precedent-setting. Precedent in this context refers to an established way of doing business in impact certificates. Because impact certificates are so new and don't have an established way of accommodating different and perhaps adverse interests, it is important to create best practices that over time lead to more binding standards. Such best practices of impact certificate trading can pertain to technology systems used, the storage of impact certificates, and the pricing logic for impact certificates, among many other considerations.

Impact 3.0 has key advantages for impact standardization. Unlike Impact 1.0 and 2.0, Impact 3.0 has the opportunity to provide mathematical organically evolving forms of impact standard

setting. Where standardization in Impact 2.0 required political compromise and years of lobbying, Impact 3.0 can use new WEB3 forms of standardization via precedent-setting in weighted directed acyclical graphs.¹⁰⁷ In this system, a smart contract can become the standard. Once the smart contract is set up as a template which is then over time used by other market participants, the fact that the market uses it continuously is the standard setting. The beauty of this WEB3 system is that it does not require a centralized lobbying and political compromise process through elected political leaders. The fact that people use the established smart contract suffices to set the standard. And, importantly, unlike Impact 1.0 and 2.0 standardization, in Impact 3.0, the standard evolves organically. As a new template smart contract is created because market participants realized the shortcomings of the existing smart contract template, the fact that the new template smart contract is used by and between market participants to, for example, exchange and trade impact certificates, suffice to change and upgrade the standard. While some market participants may adhere to the old smart contract template with the then-existing limitations, other market participants will move their business to the new smart contract, which then in fact becomes the new template and standard. Market power and market participant decision-making are preeminent and ubiquitous forces in this Impact 3.0 standardization. There is no need for market participants to explain the limitations of the old smart contract to lobbyists and politicians with urges to create the new standard. The market evolves with standards through the smart contract template evolution in an organic grassroots process.

¹⁰⁷ Craig Calcaterra & Wulf A. Kaal, *Secure Proof of Stake Protocol*, Univ. St. Thomas (Minn.) Legal Stud. Rsch. Paper No. 18-10 (Jan. 18, 2018), <https://ssrn.com/abstract=3125827>.

Funding Sources Impact 3.0

Funding sources are important for the Impact 3.0 evolution. It is conceivable that projects that successfully listed impact certificates will continue to look for additional funding sources as the project matures. The initial impact certificate listing may therefore function as a seed investment for the project. As the project proves impact through different kinds of impact measurements pre- and post-impact certificate listing, it qualifies for follow-on investments. The funding sources for that follow-on investment are particularly important as they allow Impact 3.0 to scale. Aside from venture capital follow-on investments for projects that showed a significant impact on the impact certificate marketplace, indirect government funding through tax credits seems of paramount importance.

Venture capital follow-on investments will benefit projects that prove impact by listing impact certificates but have larger capital requirements over time to fulfill their mission. In this scenario, the impact certificate listing fulfills a due diligence function for venture capital funds. Through the projects' success that is validated through the impact certificate, the venture capital follow-on investment benefits from all the project performance data that is generated through the impact certificate marketplace. Impact projects and venture capitalist funds benefit equally from the transparency and impact-verified accountability afforded by the impact certificate marketplace.

The government funding side is equally intriguing through tax credits. If and when governments realize the "for good" that is created by the impact certificate marketplace, the government may wish to incentivize the creation of solutions that benefit humanity. If approved by the government, such projects could receive tax credits for the solution they create. It is conceivable that, over time, the recognized and government funded projects that help solve hunger can offset and supplement the need for governments to fund social programs. While some problems in the world cannot be solved without government engagement, the transparency and accountability afforded by the WEB3 solution in Impact 3.0 open up the possibility for governments to trace and engage with for good solutions created by technology. This public private sector collaboration may help offset government funding over time and / or help the government allocate funding to verifiable impact projects and align with the government agenda.

Community coordination software in Impact 3.0 enables the creation and sharing of impact community revenue via government tax credits. Rather than creating one-off tax credits for successful projects and their teams, the projects that list impact certificates can prove community-driven impact over time. Therefore, the community that organizes around the impact certificate should be able to apply for and receive tax credits as a form of revenue stream from the government for the continuous creation of desirable societal outcomes. The WEB3 community software allows the distribution of government tax credits to community members pro rata to their merit or reputation scores.

Credential Tracking in Impact 3.0

Credentials and expertise tracking for impact projects and associated impact project community actors is crucial for Impact 3.0. Expertise tracking in this context refers to Impact 3.0 system features that allow donors and secondary market participants as well as external follow-on funding sources, such as venture funds and the government, to track how a given individual or project performs in impact terms over time. While impact certificates are one prominent measure for expertise tracking, impact certificates are mostly a fungible measure of impact success in economic terms without a direct reference to the inherent expertise developed by the individual project community members and the project as a collective. That's how WEB3 community software becomes even more relevant. We previously discussed in this paper how WEB3 community software can help with the scaling of impact certificate verification and due diligence functions. There is another important dimension to WEB3 community software tools and that dimension pertains to expertise tracking.

WEB3 reputation systems govern evolving impact communities. As impact projects list impact certificates and get verified through expert community upvotes, the impact project team itself becomes a community that starts with the core team and onboards experts that support the core impact project. The impact project team members become founders in the system and start onboarding new members through a reputation onboarding process.¹⁰⁸ The underlying reputation governance in WEB3 systems that govern this community has a broad societal impact¹⁰⁹ as exemplified

¹⁰⁸ Calcaterra, Kaal, & Andrei, *supra* note 82.

¹⁰⁹ CRAIG CALCATERRA & WULF KAAL, *DECENTRALIZATION: TECHNOLOGY'S IMPACT ON ORGANIZATIONAL AND SOCIETAL STRUCTURE* (2021).

through the application to impact communities. The reputation score of each impact community member measures the expertise developed by the community member over time. Such scores are attack-resistant and evolve organically.¹¹⁰

The decentralized governance of impact communities through reputation scoring creates scaling efficiencies for Impact 3.0. As impact projects become trackable expertise WEB3 communities, the expertise tracking via reputation tokens enables evolving Impact 3.0 funding sources to evaluate the evolving effectiveness of impact teams through individual members' reputation scores and the aggregation of impact community members' scores. Especially important in this context is the government's examination of disparate evolving impact community expertises. Once a project has listed its impact certificates and become a WEB3 community, the scores of each community member can be aggregated and compared with other projects in the same impact market. Even without the comparison to other projects, the government can track the expertise in a given "for good" category and allocate tax credits for the scores the community generates. Such tax credits can then be distributed as a form of dollar revenue to the community members pro rata to their respective members' reputation scores.¹¹¹

Importantly, the individual reputation scores created by the impact community also create a source of identity for each community member.¹¹² Identity in WEB3 governance logic needs to be distinguished from identity concepts that revolve around the proof of physical existence via biometrics or email etc. verifications and KYC systems. WEB3 governance identity revolves

¹¹⁰ Calcaterra, Kaal, & Andrei, *supra* note 82.

¹¹¹ Calcaterra, Kaal, & Andrei, *supra* note 82.

¹¹² Craig Calcaterra & Wulf Kaal, *Self Sovereign Identity*, WULF KAAL (May 25, 2020), <https://wulfkaal.com/2020/05/25/self-sovereign-identity/>.

around the creation of reputation merit scores in WEB3 communities. These scores are calculated in an immutable and attack-resistant manner. Therefore, the scores can be aggregated for an individual who is a member of many different communities. The aggregated score creates a constantly evolving identity score in WEB3 systems that can be compared with a credit score. In other words, the score identifies how well the person or AI does in a given set of communities. The score functions to open doors and allows contributions to certain smart contract templates and work communities similar to a credit score.

Expertise delineation follows certain basic principles in the Impact 3.0 WEB3 governance model. To summarize, let's take for instance an impact community that has listed a successful impact certificate for carbon sequestration. Each ton of carbon that has been removed from the earth is verified by an expert community that earns its reputation score for purposes of expertise tracking. Conversely, the carbon sequestration impact project itself creates its community carbon score. That score measures how good the community is at removing carbon from the earth. The score is calculated through the following metrics: A given project member will perform a job for the community, the work product is submitted to the community forum for forum discussions, and at the end of the forum discussion the community votes on the member's work product which functions as a community audit of the work product. Once the audit vote is final, the incoming fee that is associated with the job performed by the community via audit is then distributed to all members of the community pro rata to their respective updated reputation score. The calculations to update the reputation scores weigh the member's contribution who performed the job on behalf of the community higher than the members of the community

who merely audited the work product by discussing it in the forum and voting on it. Through the voting logic, impact community members are incentivized to work for themselves while at the same time working to benefit the community overall. Ideologically, this dynamic community-based governance system has the potential to create a reputation economy and forms of decentralized commerce that transcend notions of capitalism and socialism which have afflicted the human race since their inception.

Conclusion

The article has demonstrated how Impact 3.0 through emerging community technology facilitates the evolution of the impact certificate market. Whereas WEB2 technology limits the applications and uses of impact certificates, WEB3 technology enables an ever-expanding variety of social entrepreneurs, impact activists, donors, and impact investors to collaborate. In particular, emerging WEB3 technology allows impact certificates to expand the market for carbon credits beyond the current emphasis on carbon emissions. Through the impact certificate market evolution in combination with WEB3 smart contract technology components, Impact 3.0 can create impact solutions and controls for the world to see and experience in unparalleled ways.

