Distributed Ledger Foundation

A technology- agnostic, non-profit global organization dedicated to developing standards of integrity, trust, and governance in distributed ledger technology

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OIX OPEN IDENTITY EXCHANGE

State of Distributed Ledger Technology

Blockchain. Just the term invokes many different reactions, emotions, and opinions. Blockchain technology was born from the desire to bring a peer-to-peer electronic cash system to the world through Bitcoin, but it has ended up triggering so much more. Blockchain has not only brought the concept of cryptocurrencies to the mainstream, but more importantly, it has also done so for distributed ledger technology. It has been clearly disruptive, regardless of market, as this technology has shown that it can be transformative, not just in the world of finance, but also across business sectors and in the public sector. Through this disruption, a new kind of value has been realized, as well as the scrutiny of new business models. We are currently in a period of early adoption, but the potential of distributed ledger technology is clear for with business legal and technical implications on a global scale.

The rush to leverage this new technology is reaching levels we haven't seen since the dot.com days. As a result, the marketplace is increasingly crowded – and increasingly fragmented. With many different kinds of organizations having their own, venture-capital driven interests, supporting different variants of blockchain, spawning a diverse array of cryptocurrencies and crypto assets, and, working to launch related technologies and applications. The mass media interest amplifies the noise in the marketplace is creating an unintended feedback loop. One that is jeopardizing the confidence of those in Board rooms, government agencies and on Wall Street who remember. These key constituencies are beginning to be more confused about how best to realize value from this new asset class effectively. Even the confusion on basic terms surrounding blockchain undermines the due diligence necessary from these people and their organizations to dedicate resources and drive innovation of distributed ledger technology. All the while (and rightly so), when it seems we are bound to be due for some type of correction in the market as public sentiment drives political intervention and expectations are harder to meet.

A major contributor to this skepticism are new ideas of what trust means and lack of time tested best practice guides, and good governance standards around blockchain. We have this new, disruptive technology, driving new business models based on this technology, and we have this crush of new investment thanks to the same technology – and all happening at the same time. With this, comes a fundamental challenge, how do we articulate the duties and liabilities in the governance of these

The properties of Distributed Ledger Technology

Distributed
All network participants have a full copy of the ledger for full transparency

Anonymous
The identity of participants is either pseudonymous or anonymous

Unanimous
All network participants agree to the validity of each of the records

Time-stamped
Transaction timestamp is recorded a block

Immutable
Any validated records are irreversible and cannot be changed

Programmable
A blockchain is programmable ('Smart Contracts')

Secure
All records are individually encrypted

widely diverse, enterprise class, cross jurisdictional multiparty contracts to protect the varying economic incentives of stakeholders? If distributed ledger technologies are meant to enable a new trust layer of internet scale applications, how do we trust the new trust layer?

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Today there is no definitive answer to these types of questions. One reason for this is that there is a crucial knowledge gap that exists around distributed ledger technology for decision makers – and, more specifically, across national and state regulators and legislators. This knowledge gap only widens when common sense due diligence of use cases, best practices, and legal issues is undertaken. We can take the complexity of assigning duties and liabilities in multi-party contracts based on blockchain as a one example of the challenges for prudent decision makers. These governance models, unlike the more common place ones, don't have a central authority. They don't have a prime contractor acting as a systems integrator to pull all the new technology together and be liable should a breach occur or a system fail. These internet scale business models are by definition decentralized and "self-regulatory", being extrajudicial or cross-judicial, meaning that they are not the province of any one country. For regulators, and the participants in internet scale business models, the question becomes: if there's no one, or no single entity in charge, and there is no one legal jurisdiction that is regulating, what happens when it breaks? As it turns out, blockchains break, fraud happens, and breaches occur.[1] What happens when things break from the security perspective, but also from a liability perspective?[2] Who is accountable when a hundred million dollars' worth of cryptocurrency disappears?[3] Who is liable for that?

Securing these systems in today's business, legal and technical compliance context and in the future is the burning business problem all stakeholders face. In order for the potential of distributed ledger technology to be realized, there need to be conformance standards, and compliance guidance shared by industry and governmental bodies alike. They must be secure, scalable and global. This is the focus of the Distributed Ledger Foundation.

1. *Fraud and privacy problems on the blockchain*, International Data Group. http://bit.ly/2FoYZiL

2. *The Distributed Liability of Distributed Ledgers: Legal Risks of Blockchain*, University of New South Wales Law Research Series. http://bit.ly/2tvN2C2

3. *$530 million cryptocurrency heist may be biggest ever*, CNN. http://cnnmon.ie/2FEMtuF

Why the Distributed Ledger Foundation?

At this point in the rapid evolution and global adoption of blockchain and distributed ledger technology, there is a moment of opportunity. The requirement for compliant blockchain governance and trust is reaching 'critical need' status. Securing that need for compliance in current law will have a profound impact on future regulation of this technology. The most important step to achieving governance and trust is for there to be a private sector led partnership to inform legislators, regulators and policy makers, so they can collaborate on how best to make better, more informed decisions. The Distributed Ledger Foundation aspires to be a trusted, neutral representative body dedicated to fostering trust in an increasingly fragmented, "zero trust" environment.

> **What happens when things break from the security perspective, but also from a liability perspective? Who is accountable when a hundred million dollars' worth of cryptocurrency disappears? Who is liable for that?**

The origins of the DLF came from growing interest and concern around the application of blockchain and DLT in identity systems at scale by new and long standing members of the Open Identity Exchange (OIX). Start-ups, SMEs and board members of the OIX became concerned about the potential for misapplication of the technology. At workshops and in whitepapers they pointed to the brittle business models and the lack of trust frameworks for distributed ledger technology and its application. Some like Evernym took a leading-edge approach by standing up the Sovrin Foundation. Others like Microsoft helped establish and grow the Decentralized Identity Foundation. OIX has built its authoritative global brand as a technology agnostic, non-profit trade organization of leaders from competing business sectors focused on building the volume and velocity of trusted transactions online. OIX, began over seven years ago driven by the concerns of digital identity security, privacy and ease of use. It's invested on the years in joint legal research defining best current practice governance guides and trust frameworks for identity systems. The interest in piloting a complementary organization focused on distributed ledger technology was evident in member surveys and a willingness to provide seed funding. The DLF will be incubated within the OIX with the goal of market testing the value of a new foundation to secure the growing investments of OIX members as their blockchain pilots, POCs and products move to commercial deployments. OIX will help bootstrap the DLF by providing administrative, legal and program support to the nascent DLF. That concrete help combined with the insight and guidance

Caption speaking to the images below and their relevance to the whitepaper

on governance best practices in a series of OIX white papers accelerates the market test of the DLF potential. There is clear interest and increasing venture investment in the nexus of identity systems and the application of distributed ledger technology. OIX can help the DLF collaborate with the growing number of foundations and related organizations in emerging distributed ledger ecosystem. The DLF like OIX will not be a standards development organization. OIX's incubation of the DLF will enable the DLF to focus on collaborating with its partners, acting as a convener, curator and coordinator of a global conversation on governance to enable a private sector led partnership with governments around the world. Working together they can help the ISO and other standards bodies determine the kinds of standards that will secure trust for all stakeholders in the world of blockchain.

Additionally, a pivotal issue the OIX intends to help the DLF avoid is the unintended consequence of the gold rush environment around investment in blockchain has resulted in a fragmentation of these initiatives. The hot house environment has seen the proliferation of trade groups, foundations, and think tanks. These advocacy organizations seem to be cropping up at the same pace as cryptocurrencies. In the aggregate they miss the intended effect: to secure existing investments and expand addressable markets. In so doing they may sub optimize even the most well-intentioned advocacy efforts. Like the OIX, the DLF wants to enhance the coordination between participating parties, promote cross-functional collaboration (between technology experts and legal domain experts, academia and policy makers). It is a counter intuitive argument. Adding a new foundation to the roster of existing foundations and think tanks can be beneficial to those built to be advocates of their own, or specific technologies. The DLT is focused on enabling a broader set of global solutions to the urgent need to secure the compliance of today's investments in existing regulations and shape future conformance standards and regulations.

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The DLF's adoption of the OIX model positions it to avoid institutional biases and accelerates its critical first step: to partner with others now in place to meet the current compliance challenge and support its future vision. It leverages a proven blueprint with attributes for inclusive membership and open participation. This inclusive approach to building

Caption speaking to the images below and their relevance to the whitepaper

a team of global partners who include those that represent government, business, academia, and the non-profit sector to inform regulators understand what distributed ledger technology can do, how it is best governs and how it can benefit all parties that are involved.

The moment of opportunity is here to answer the question of how trustworthiness is to be determined in the current legal climate and by helping develop standards for future conformance in blockchain and distributed ledger systems.

Qualities of the DLF

Transparency. This is one of the most crucial, and defining, traits of the distributed ledger foundation. History is littered with examples of crises that have had impacts on a massive, global scale, and which were exacerbated by a lack of transparency, and the absence of governance and regulatory frameworks. From the 1997 Asian financial crisis[4], to the 2007 American sub-prime mortgage crisis[5], and the 2009 European debt crisis[6], the three pillars of integrity: transparency, governance, and regulation were not present – and while these crises were initially regional in scope, they had global repercussions. Blockchain and distributed ledger technology are on a growth path to touch every industry, in every market, all over the world. The DLF will act as an open source of best practices to guide the assignment of duties and liabilities articulate in the multi-party contracts that will demonstrate compliance to regulatory policies that impact the deployment of distributed ledger applications. Delivering this advice for both the public and private sector requires transparency from the foundation in all facets of its activities.

The other trait of the DLF, and one that can only be earned, is trust. Trust in the work of the DLF first by its partner organizations, its members and ultimately the governments it serves must certainly grow over time to deliver on its mission. But, how will the DLF work to establish trust on day one? The foundation will be a non-profit, technology agnostic and neutral so as not to be financially obligated to any corporate or government entity. Additionally, as the name implies, the Distributed Ledger Foundation will be inclusive, and not favoring or showing bias toward any, distributed ledger technology-type or implementation.

Finally, the DLF will be a truly representative and global body. By having global participation and membership, the foundation, as well as the

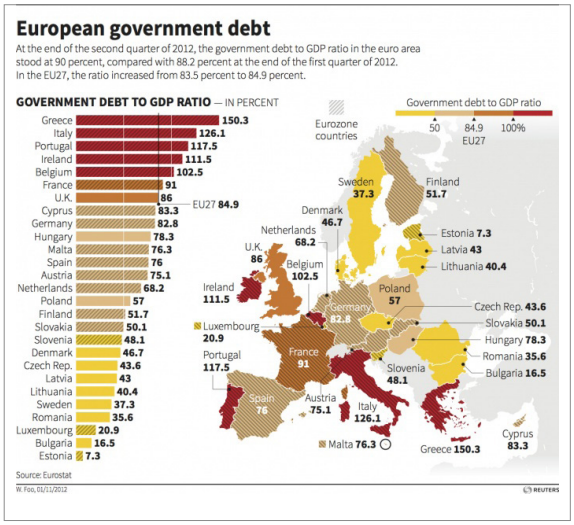
4. *Causes and Sources of the Asian Financial Crisis*, Symposium on Economic and Financial Recovery in Asia. http://bit.ly/2livBse

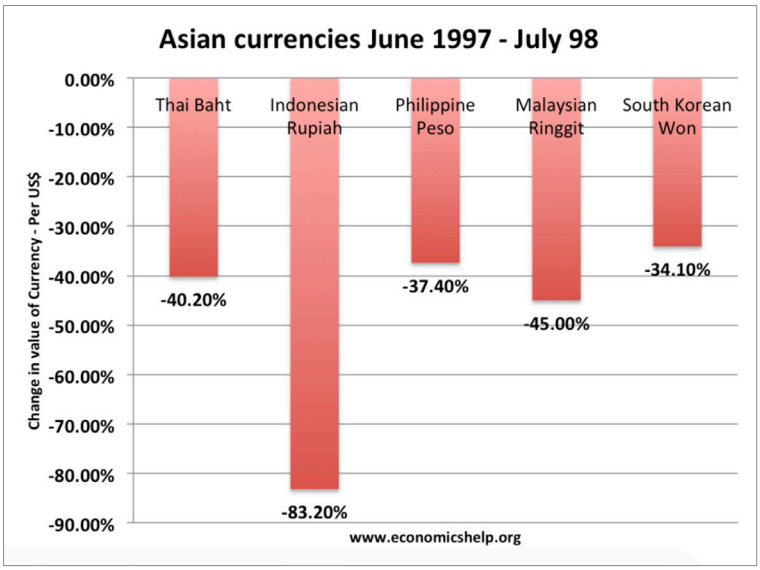
5. *The Financial Panic of 2008 and Financial Regulatory Reform*, Harvard Law School Forum on Corporate Governance and Financial Regulation. http://bit.ly/2livkpc

6. *The Eurozone Debt Crisis and the European Banking Union: A Cautionary Tale of Failure and Reform*, Edinburgh School of Law. http://bit.ly/2lgqMzA

public and private initiatives that the foundation helps support, will benefit enormously from a diversity of inputs. This includes member organizations that represent interests across any industry and market. The foundation will solicit representative input from academia with participants at the educator and student levels from institutions in the United States and abroad. Finally, in order to ensure compliance in the status quo and to inform potential government regulatory policy, legal thought leaders with expertise in governance and trust will be a critical part of the foundation's formation and eventual structure.

A strength of the foundation will be its makeup as an independent, non-profit and global body. Through its membership, it will be judged by its ability to deeply understand the implications of legislation and regulation on distributed ledger technology and its use, and deliver conformance guidance through initiatives, that are transparent and trustworthy.





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Platform of the DLF

As a contributor to other partners, the DLF strives to educate the public as well as inform policy makers on distributed ledger technology, applications and platforms. There's is growing confusion about this technology and its application. Currently, there is far too much noise around Blockchain without the benefit of a neutral, objective and authoritative body to provide trustworthy insight into the technology in general, its compliant deployment, and a clear understanding of the impact its applications may have in their respective markets. To date, the largest and most successful implementation of blockchain remains Bitcoin, and it would be too easy for this to dominate the understanding of the technology. There are still far too many decision makers that are in need of access to impartial and unbiased thought leadership on distributed ledgers and how initiatives can be developed and responsibly brought online. This is compounded by the need for policymakers the world over to not only better understand the technology and the transformative impact it has on business models and governance. The pressing need is to understand potential legal implications of the technology and the effects it may have on existing policy or legislation.

A key way that the distributed ledger foundation will resolve these issues is by providing periodic, formalized workshops that bring together industry thought leaders and domain experts. These workshops will be used to analyze real-world, internet scale use cases to foster deep thinking about blockchain trust and governance design. For example, better election and voting processes to make them more secure and reliable, digital identity management for better control and security of individual identification records, and defining techno-legal standards for smart contracts. These workshops will advance the expertise and understanding needed to better serve policymakers who are tasked with establishing regulations or legislation to support these types of vexing problems.

Another critical component of the foundation is the promotion and development of models for trust frameworks to articulate and align the economic interests of stakeholders governance. This is one of its most important functions. There are today many applications of distributed ledger technology used by multiple parties, whether public, private or governmental, or a combination of each. These require a mutually agreed upon, legally enforceable, common set of requirements to ensure that all transactions occurring are secure and fair for all participants. The role of the DLF is not to act in any capacity as a central authority for the

implementation of a distributed ledger. Rather, the role of the foundation is to provide expertise and research as well as legal insight into the establishment of trust frameworks for these implementations.

A third plank of the foundation is to advocate for the distributed ledger initiatives of member organizations. There are going to be many potential ideas that member organizations will have as applications of DLT. The foundation will take an active, supporting role convening, curating and promote the adoption of best practices and conformance standards to market. This will include guidance in many areas including: voting fairness, speed and integrity, standards for smart contracts and questions around liability in distributed ledger systems and application.

Goals of the DLF

The Distributed Ledger Foundation, through its partnerships and platform, aspires to be an authoritative 'center of excellence' on the compliance of distributed ledger systems to relevant regulations. It aims to be a global leader for the promotion of voting transparency, alignment of economic incentives and stakeholders control. To achieve this, the foundation will be active in working with partner organizations as well as public officials to develop public policies that promote transparency and trust of distributed ledger systems. From a regulatory standpoint, the foundation will publish white papers that focus on accountability and governance of applications that provide proactive, public information on policies across jurisdictions which may impact distributed ledger technology.

The foundation and its partner organizations will provide include public facing, joint research, and pilot projects will begin using the time tested OIX Intellectual property rights policy. These pilot projects aim to test business, legal, and technical interoperability in real world use cases. Transparency and trust being defining traits of the foundation, all of the data and any interpreted information from these activities will be made available for peer review.

Future of the Foundation

The disruptive economic and social impacts that blockchain and other forms of distributed ledger technology may fundamentally change how we connect, interact, and transact with each other and the world around us. The potential for this technology to successfully restore the sense of trust that has been lost through identity theft, hacking, fraud, data loss, and much more is motivating. In order to restore this trust, there must be rules of governance that are developed and supported for the benefit of all. The distributed ledger foundation aspires to be the trusted global resource for the compliance, governance and control of this technology. It hopes to achieve this by neutral, technology agnostic approach to governance. The foundation's development of compliance standards for applications of distributed ledger technology will help evolve the trust frameworks that will be critical to their success.

Team

Don Thibeau

ACTING CHAIR

Don is the Founder and Chairman of the Open Identity Exchange (OIX), a technology-agnostic, non-profit trade global organization comprised of leading companies from competing sectors.

Robert Robbins

GENERAL COUNSEL

Robert, Pillsbury's global corporate practice section leader, is recognized as a leader in structuring and closing complex mergers, acquisitions and restructurings, and in advising corporate boards.

Kay Chopard Cohen

EXECUTIVE DIRECTOR

Kay provides leadership and executive management and coaching for federal agencies and nonprofit organizations in improving business operations, governance, and strategic planning. Clients include the National Institute for Standards and Technology (NIST) Trusted Identities Group (TIG); Identity Ecosystem Steering Group (IDESG), Inc. as acting executive director; California District Attorneys Association (CDAA), business leadership and foundation development; Law Enforcement Alliance for Digital Evidence Response (LEADER); Bureau of Justice Assistance (BJA) U.S. Justice Department.

Advisory Committee

Scott David

Scott is the Director of Policy at the Center for Information Assurance and Cybersecurity at University of Washington and was formerly the Executive Director of the Law, Technology, and Arts Group at UW School of Law. Scott is an active member of the World Economic Forum's Global Agenda Council on Data Driven Development, the MIT/KIT Advisory Board, and the Open Identity Exchange Advisory Board.

Helen Disney

Helen is the CEO and Founder of Unblocked, a hub for Blockchain events, education, and information. Helen was listed in Innovate Finance's 2016 Women in Fintech Powerlist and referred to by Barclays as a "blockchain guru". She was recently appointed to the Advisory Board of the British Blockchain Association in charge of policy, governance and public affairs. She is also a member of techUK and of its DLT working group. Prior to founding Unblocked, she has a 15-year history of influencing public policy including running the Stockholm Network of think tanks and policy institutes.

David Fields

David is the Founder and Managing Partner of PTB Ventures, a venture capital firm investing in early-stage companies in the digital identity ecosystem. David is a former private equity investment professional and brings over a decade of private investment and advisory experience both to his investors and his portfolio companies at PTB. He began his career as a credit analyst at Citigroup Global Markets and later served on the investment team at Cooper Investment Partners. David graduated from the University of Chicago with a B.A. in Economics and holds the Chartered Financial Analyst (CFA) designation.

Tony Lai

Tony is an Entrepreneurial Fellow at the Stanford Center for Legal Informatics (CodeX) and a Co-founder of Legal.io, working on applied research and innovation in the design of legal service delivery systems, with a focus on ecosystem engineering to support trusted exchange and value flow.

Giles Watkins

Giles is an experienced board member with a strong Entrepreneurial and Professional Services background. Giles has deep credentials in Mergers & Acquisitions, Finance and Accounting, Technology Strategy, Risk Management, Privacy, Digital Identity, and Cyber Security across multiple sectors and geographies. He is currently working with early stage businesses to commercialize ground breaking technologies and leading the International Association of Privacy Professionals in the UK.