

INVESTOR DAY – BLOCKCHAIN

What are the implications
for Computershare?

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CERTAINTY | INGENUITY | ADVANTAGE

The logo for Computershare, featuring a stylized 'C' icon followed by the word 'Computershare' in a bold, sans-serif font.

Blockchain

Introduction

Stuart Irving, CEO, Computershare said:

"There are evangelists who say it will change everything and sceptics who say it will change nothing. The answer will surely be somewhere in between, but to which of these two extremes the outcome skews towards and when it will do so is the subject of much speculation.

"Fear and greed are likely adding fuel to this debate, as various parties analyse what it means for market evolution and what it means for them specifically"

Source: "Blockchain could blow away sharemarkets",
Shaun Drummond, Sydney Morning Herald, March 28th, 2016

Today, our focus is on the implications for Computershare



Blockchain

Introduction

- > Pre-trade order-routing and electronic trading of financial assets is now virtually frictionless and low cost. Various technologies have been applied to push trading responsiveness to millisecond levels.
- > In contrast clearing, settlement and custody processes have not similarly evolved. Securities transactions are held in a 'clearing' process for 2 or 3 business days creating vast credit exposures that have to be managed, often through complex risk systems and margining requirements.
- > The clearing and settlement process has given rise to specialist clearing and settlement organisations with specialist credentials, systems and skillsets.
- > Equally, the laws, regulations and rules around the legal register of shareholders has given rise to specialist providers such as Computershare. These legal and regulatory frameworks are not uniform across jurisdictions



Blockchain

Introduction & Perspective

- > We believe the commentary that blockchain is automatically “bad for Computershare” is ill informed and reflects incomplete analysis or competing vested interests.
- > The focus should be on payments and trade settlement; not registry. This is where the investments are being channelled.
- > The view that ‘distributed ledger’ technology means everyone will get a copy of a share register is naïve.
- > Computershare is not an intermediary in the traditional sense. Computershare is an agent for a critical end-user segment of the market (an enviable position in a blockchain environment).
- > We see real-life commercial opportunities given Computershare’s unique positioning (e.g. Computershare is not an intermediary), not just risks as is often reported in the local AU market.



Overview: So what is a Blockchain?

"At its most basic, the blockchain is a global spreadsheet, an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value and importance to human kind: birth and death certificates, marriage licenses, deeds and titles of ownership, educational degrees, financial accounts, medical procedures, insurance claims, votes, transactions between "smart" objects, and anything else that can be expressed in code."

Source: Don Tapscott: What's the Next-Generation Internet? Surprise: It's All About the Blockchain!, HuffPost Business, March 12th, 2015

What some key market participants said



“There are basically three groups – there are the **large banks**, there are the **exchanges**, and there is the **settlement system**. And what's going to happen is **one of those three are going to use this technology to disrupt the other two**. I think that's the bottom line.”

Patrick Byrne, Phd. CEO, Overstock.com, November 20th, 2015



“Distributed Ledger Technology could provide a **once in a generation opportunity to reduce cost, time and complexity in the post-trade environment** of Australia's equity market,”

Elmer Funke Kuppe, former CEO, ASX, January 22nd, 2016



“The industry has a **once-in-a-generation opportunity** to reimagine and modernise its infrastructure to resolve long-standing operational challenges... To realise the potential of distributed ledger technology in a responsible manner and to avoid a disconnected maze of siloed solutions, **the industry must work together in a coordinated fashion.**”

Michael Bodson, President and CEO at DTCC, January 25th, 2016



Post-trade made easy

“**The industry needs to take a collective view** on the potential of the technology [...] The market must embrace this potential, show patience with this development and invest in various innovative solutions to bring it to bear.”

Euroclear and Oliver Wyman report, issued February 3rd, 2016

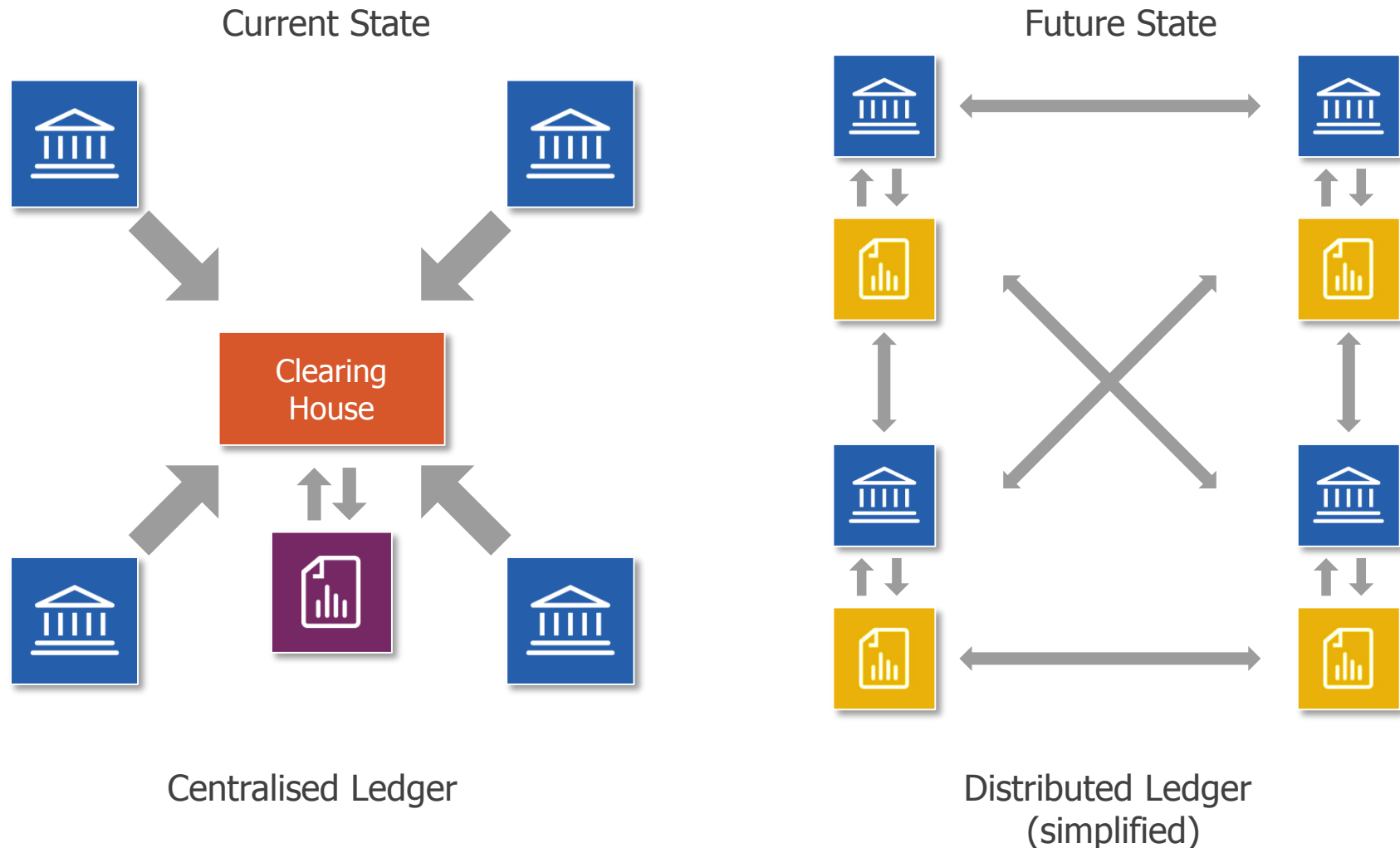
Blockchain: Risk & Opportunities

Implications for Computershare

- > Our global presence makes us an attractive partner to blockchain solution providers. It also gives us access to a wide range of commercial blockchain 'use case' opportunities.
- > If blockchain technology delivers on its promise, we are very well positioned and fully expect to service and leverage our strong relationships with issuers globally to simplify their obligations to the market (via distributed ledger technology) and to evolve our services platform to make this seamless for issuers, investors and market participants;
 - As a global agent acting for issuers, Computershare will seek collaborative solutions to deliver service efficiencies within existing market infrastructures and new market structures.
 - We will also promote more innovative ('disruptive') solutions where they can deliver clear benefits to issuers, investors and market users.

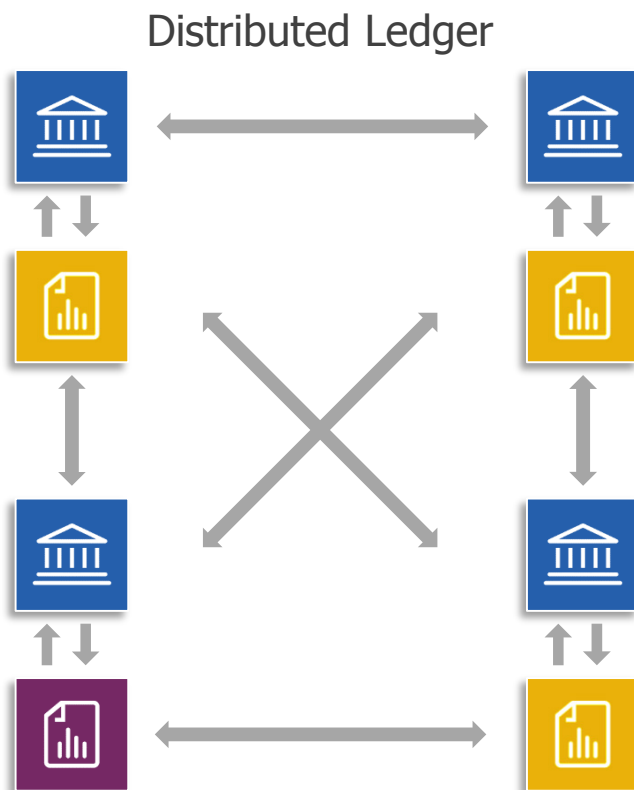
Market Structure: Centralised vs. Distributed Ledgers

A distributed ledger is a network that records ownership through a shared ledger, not through a centralised institution



Market structure: future state

More granular analysis: Distributed Ledgers versus Share Register



The blockchain must be “permissioned” to reflect the different roles and responsibilities of the key actors in the market place, e.g. the exchange for trading purposes, the issuer agent for issuance, cancellation, investor communications and corporate actions management, etc.

The issuer agent plays a critical role in administering the distributed ledger. This role does not go away.

Only one trusted party can logically act as the gateway (or node) for the issuer for the purposes of maintaining issued share capital (etc.), otherwise the system will lack the integrity it needs on a distributed basis.

Share Registrar /
Transfer Agent

NOTE: Access to the distributed ledger will be a public policy, regulatory and competition issue. It is hard to envisage a Government approving a monopoly for issuer and investor services where a competitive market exists today.

Risk or opportunity?

Our current focus

- › We are focusing our deep markets and technology expertise on understanding the implications for:
 - Existing, liquid and deeply established post-trade market infrastructure (e.g., CHESSE or DTC)
 - › Computershare can “collaborate” with existing market infrastructure to bring about evolutionary efficiencies.
 - New product markets where no infrastructure exists or is highly inefficient.
 - › Computershare can demonstrate innovation, and strong industry leadership by partnering with major market participants and fintech partners.
 - Collaborative vs disruptive opportunities – which offers the best path short and long term?
 - Hybrid opportunities, where new digital assets and transactions systems leverage existing market systems.
 - › Fungibility and exchangeability of digital securities.

Risk or opportunity?

So which infrastructure functions logically become redundant, if blockchain technology is widely adopted?

- > Some market speculation about how ASX will leverage blockchain technology to move downstream into “issuer agent” services role. The rationale cited is to offset loss of clearing revenue from competition.
- > This speculation is no fully informed and fails to reflect the different ways distributed ledgers might be constructed.
 - Interestingly, CHESS today is a form of distributed ledger system with ASX and registries managing separate components of the register.
- > Market speculation hasn’t focused on the most rudimentary aspects of blockchain technology, i.e. that blockchain provides for (i) the transfer of assets electronically and (ii) synchronised asset transfers (shares vs cash), whether using smart contract principles or not.
- > Share registry doesn’t seem like the place to start any AU-market analysis re disintermediation of market critical functions.

Risk or opportunity?

So which infrastructure functions logically become redundant, if blockchain technology is widely adopted?

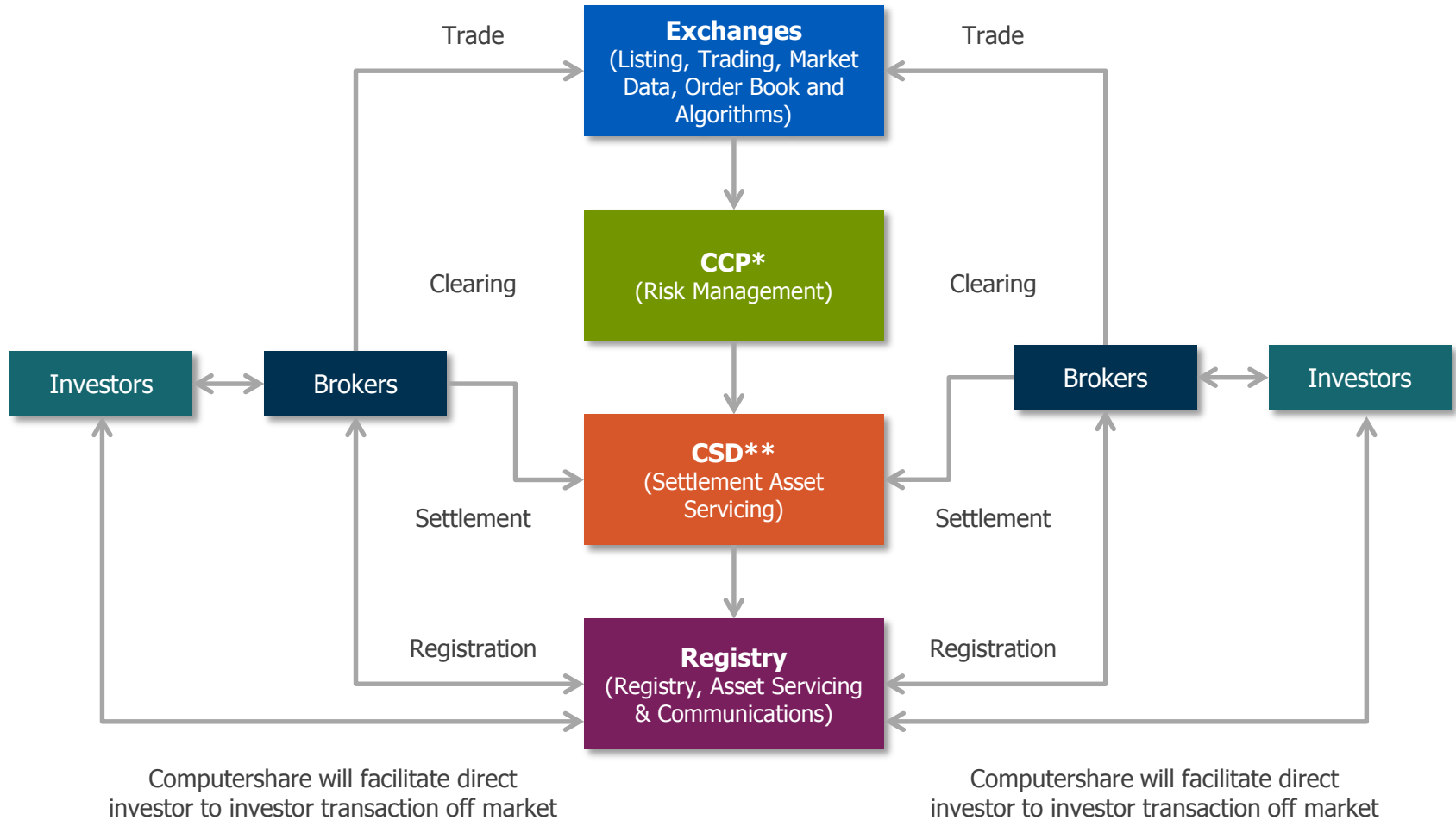
- > Little to no attention has been given to the idea that new channels for post-trade settlement activities may become feasible.
 - Connecting a registry platform directly to a trading platform through a distributed ledger is a logical construct for a streamlined and efficient market model.
 - Perhaps not surprisingly the entities seeking to lead the post-trade industry forward are the CSDs

- > What seems clear, however, is if blockchain delivers on its promise – and it still has to demonstrate it is sufficiently scalable to support mission critical capital markets - the current “supply chain” could become highly compressed, both in function and time (e.g. T+2 reducing to T+0).

- > The market structure implications will remain fluid while organisations jockey for position.

Current state

Market structure: four level architecture



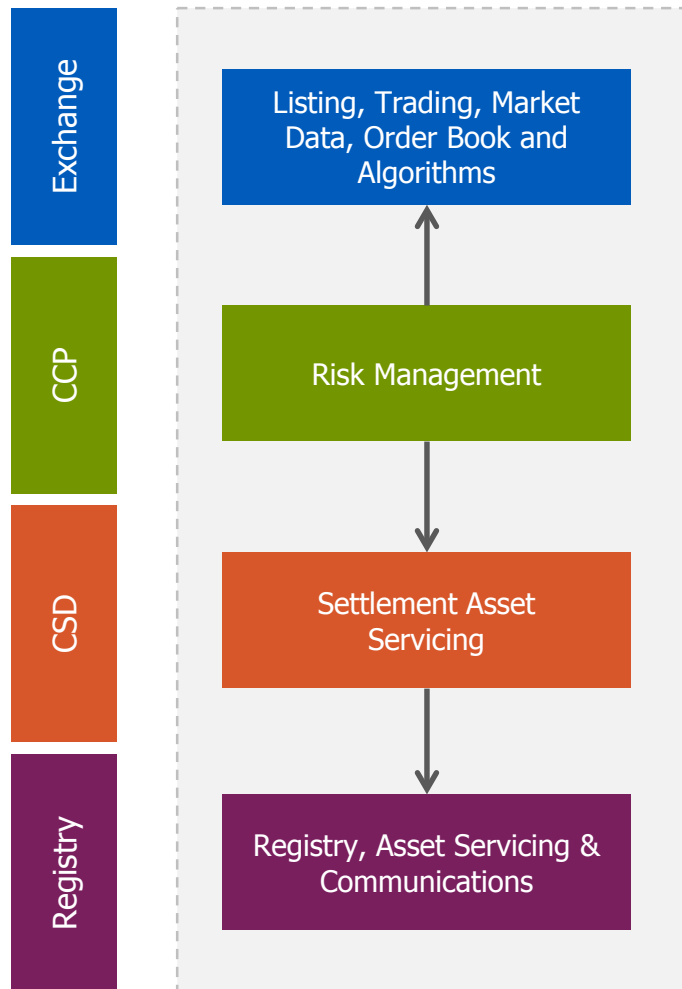
* CCPs include LCH, NSCC etc.

** CSDs include Crest, DTCC, CHESSE etc.

Potential future state

New market model? ~ a potential business opportunity

Compressed market structure: 4 to 2 level architecture?

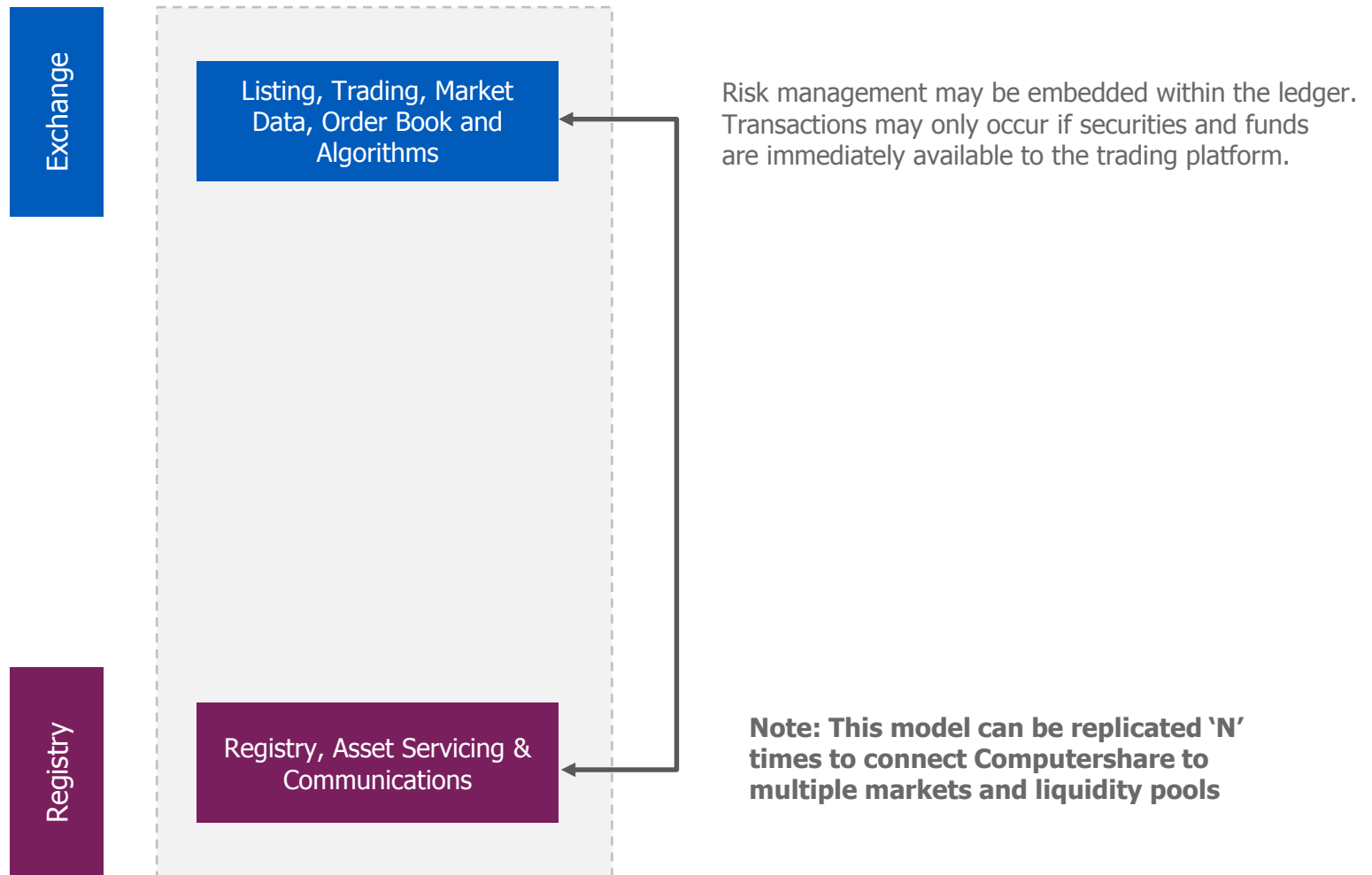


Note: This existing model today connects Computershare (and its Issuer clients) to multiple markets and liquidity pools

Potential future state

New market model? ~ a potential business opportunity

Compressed market structure: 4 to 2 level architecture?



Risks and opportunities

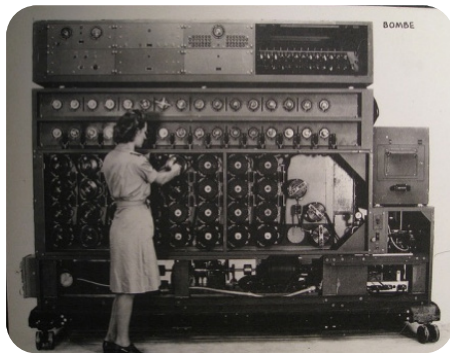
Interaction between a Distributed Ledger and the Share Register

- > In our view, the share register and the ledger are highly complementary but serve different purposes.
- > We do not believe a distributed ledger will be the “share register” for corporate law, privacy reasons or operational purposes.
Note: The legal register of title is already “the single source of truth”.
- > We view the distributed ledger as a sophisticated transaction communications channel between different actors in the market system. Access rules and commercial dynamics determine who plays what roles for whom on the ledger.
- > We believe there are sound and effective regulatory policy reasons why connecting the register to the distributed ledger will deliver a more effective regulatory outcome based on trusted service providers. It will also provide the best transition to a future state environment.
- > We’re engaging with various parties on this issue, including ASX and SEC.

Share Registry implications

Registry responsibility continues

- > Registers, share management and reporting
- > Transfer processing, including for restricted securities
- > Dividends and other Corporate Actions, e.g., splits, acquisitions & spin-offs
- > Shareholder Communications and Proxy Voting
- > Other innovative solutions:
 - Development of alternate settlement channels e.g. future state model (ref slide 14) connecting to deeply established exchange platforms and /or alternative trading platforms
 - Our team is also developing relevant 'use cases' to understand product and service benefit and will soon start to focus on what "cost out" opportunities blockchain may separately create (if any).



Risks and opportunities: Specific Use Cases

So where's the opportunity for CPU?

We're developing a range of Use Cases for commercial consideration, including:

1. Registry management for US market, but globally applicable.
 - Private Market Registry (Transfer Agency) for US market, progressively applicable in a range of Computershare core markets as regulators liberate capital raising mechanisms [crowdfunding]
 - Restricted Securities Market (includes Public Issued Securities) for large, existing market in US.
2. Registry to CSD interface to facilitate registry management, CSD interactions and dematerialization, globally applicable.
3. Development of an "on-register" expedited settlement module
4. Cross Listed securities, including fungibility of digital securities and exchangeability between digital and analogue securities quoted on different markets
5. Investor Communications and Proxy Voting, focus on UK/EU, but global applicable. Applicable to new market models and to existing market structures.
6. Other broader enterprise solutions



SETL.io

simple | unified | immediate

Brief History of FinTech 1970s > 2016

Every decade a new technology changes financial services

- 1970s SWIFT
- 1980s Dematerialisation / CSDs
- 1990s Real Time Gross Settlement Systems [RTGS] / Central Banks
- 2000s C21st technology to front office, Chi-X, Algorithmic Trading, ICE
- 2010s C21st technology to post-trade

Strategic rationale for SETL

- We aim to do to the post-trade space what Chi-X did to front office trading
- Blockchain technology has the potential to completely transform settlement and post trade administration
- Three key elements to understand about our plan
 - The benefits - why is this such a good idea for the market
 - The technology - the essential elements for institutional finance
 - The proposition - key elements for the success of SETL



Benefits of SETL ?

- A simple, unified, t-instant, multi-currency settlement system using central bank money to
 - Transfer Cash
 - Settle FX
 - Settle Securities and Derivatives Transactions
- A 'Golden Record' of financial asset ownership designed to replace multiple complex and expensive intermediaries
- A way to de-risk the settlement and clearing process
- A way to free up significant bank capital
- A way to drive US\$80 bn of costs out of the post-trade environment



Proposition

- SETL is putting a proposition to the market which has a significant probability of success
 - There is a track record in executing disruptive technology - a very particular skill in financial markets
 - SETL has an understanding of financial markets borne of decades of experience and innovation
 - SETL has a clear execution strategy based around a phased approach
 - SETL can demonstrate technology working at real-world volumes
 - The SETL team has the trust and confidence of the market

SETL

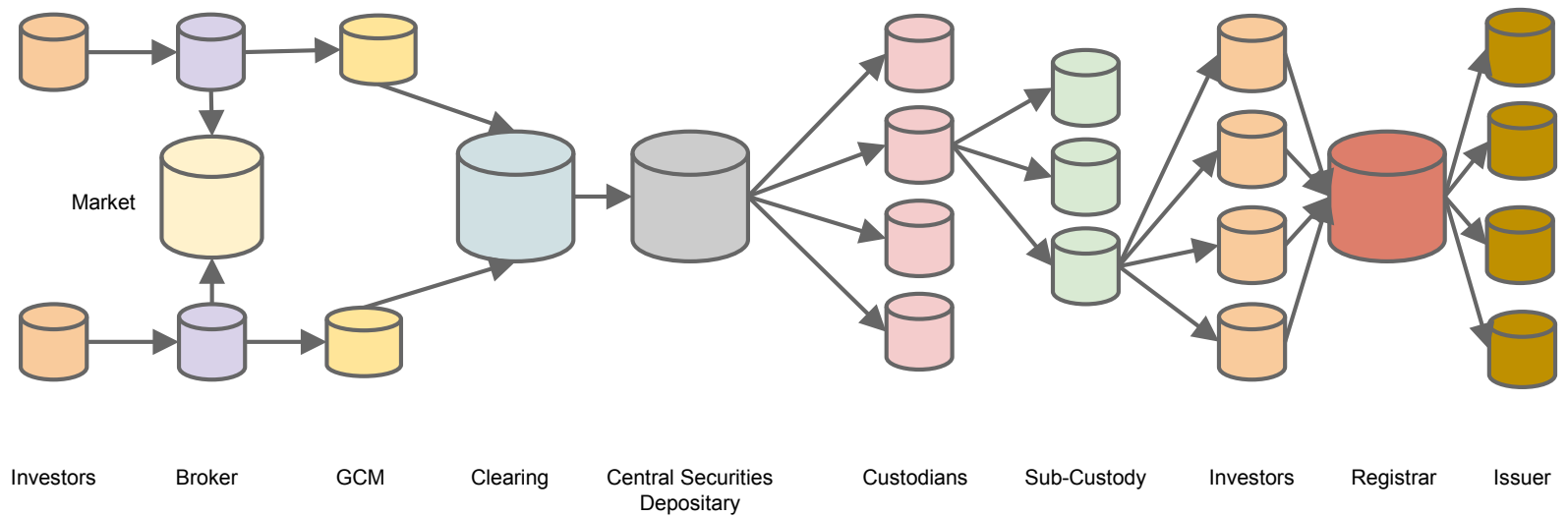
- Founded in 2015 after 24 months of pre-incorporation technical development
- Key Executives all previously worked together at Flemings / JPMorgan
- Board – Chairman Sir David Walker, Dame Rachel Lomax, Antony Jenkins, Ed Richards
- Regulatory engagement: BoE, ECB, BIS, IOSCO, ESMA
- Deep understanding that this is NOT solely about technology, it is really a project about regulation and adoption
- Deep understanding that payments and collateral movements are the ‘core’ of all financial service offerings

Technology

- To achieve these goals we needed permissioned technology that can work in the real-world of finance. In contrast to other blockchains, institutional finance needs:
 - The ability for participants to be ultimately identified
 - The ability to SETL real world currency and assets
 - The ability to execute 1,000s of transactions per second
 - The certainty that DvP and PvP can be executed
 - The ability to interface with existing protocols and systems such as SWIFT and FIX

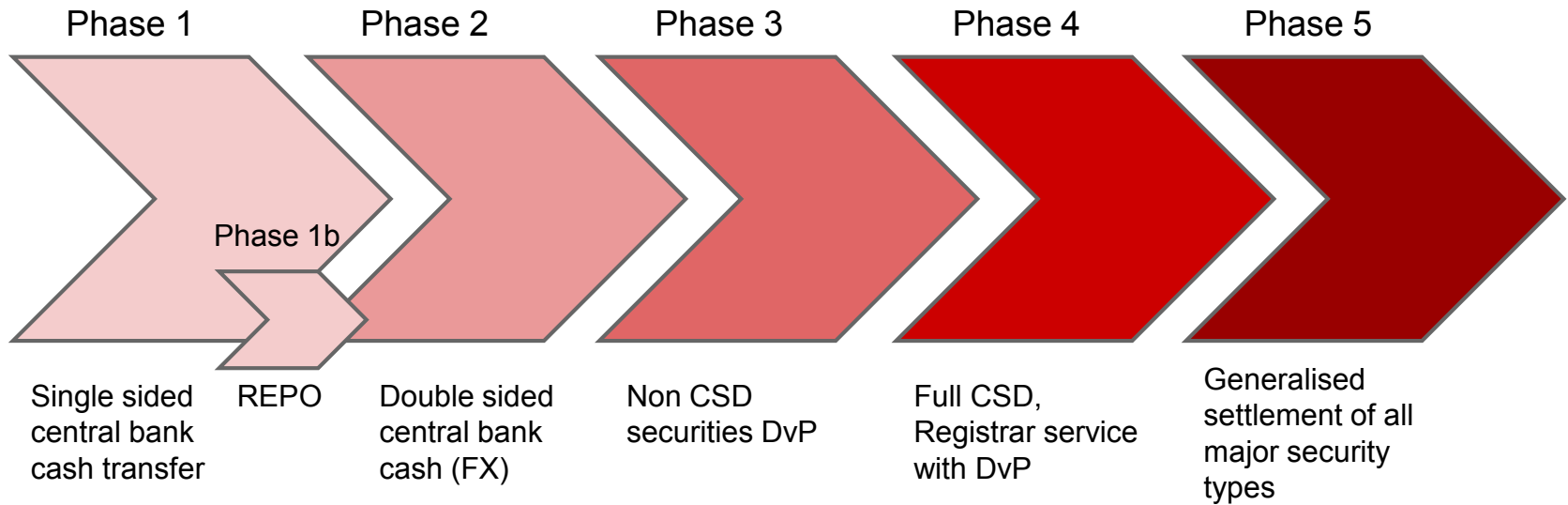


Simplified Equity Process



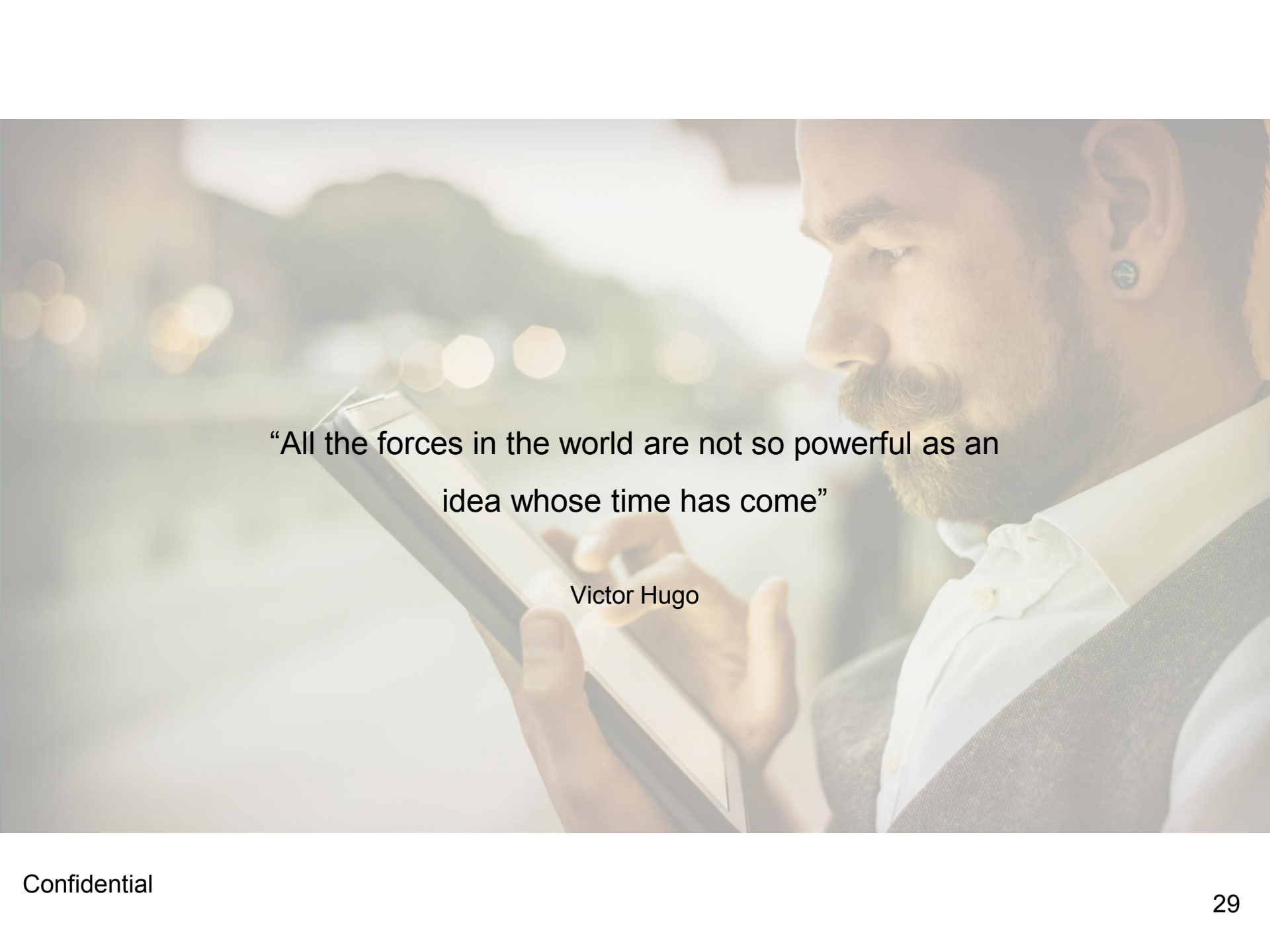
Post trade environment is over-crowded with intermediaries

Phased Implementation



SETL / Computershare

- Computershare brings: neutrality, trust, client base, issuers, regulators, financial infrastructure, geographic coverage and 'Final Mile' contact
- SETL brings: experience of delivering financial market disruption, robust financial grade Distributed Ledger Technology, deep Cryptographic and Info-security heritage, scalable business model
- The project we will jointly explore allows all parties to play to their strengths - Computershare as a provider of node access, as a provider of wallet services, as a provider of regulatory cover. SETL as a provider of working technology, first mover advantage, unified systems
- Together we plan to be able to offer to payments and financial services what the container has done for shipping and world trade.

A close-up, profile view of a man with a beard and a blue earring, looking intently at a tablet device he is holding. The background is softly blurred, showing bokeh lights and greenery, suggesting an outdoor setting. The overall tone is professional and focused.

“All the forces in the world are not so powerful as an
idea whose time has come”

Victor Hugo

Summary

- › If blockchain technology is widely adopted across our markets:
 - The share registry function will endure
 - Computershare is well positioned for market evolution
- › We are actively engaged in various blockchain initiatives.
 - We see opportunities, locally and globally