

The Future of Global Custody

June 2021

Virgilio A Mendoza

Business Development Central Bank and Sovereign Wealth Funds

OVERVIEW



Northern Trust: Our Business



The Future of Global Custody



Q&A

northerntrust.com | © 2021 Northern Trust

Northern Trust: Our Business



A FOCUSED BUSINESS MODEL

Founded in 1889

Assets:*

\$14.8T

UNDER CUSTODY/ADMINISTRATION

\$1.4T
UNDER MANAGEMENT

26 LOCATIONS 25,000

Asset Servicing

- Global custody
- Fund services
- Capital markets
- Banking services
- Data solutions







Best Custody Specialist, Institutional

The Asset – Triple A Sustainable Investing Awards For Institutional Investor, Etf, And Asset Servicing
Provider, 2020 – Eleventh Consecutive Year



Best Custodian

Private Equity Wire US Awards,2020



Best Custodian

Private Equity Wire European Aw\ards,2021

^{*} All figures as of March 31, 2021. Source: Northern Trust. Figures for AuC and AuM are rounded

OUR EMEA BUSINESS

Eleven locations and over 3,900 employees delivering asset servicing and asset management solutions to more than 700 asset managers, asset owners and family offices



UNITED KINGDOM

- Working with 7 of the 11 largest pension schemes in the UK
- Services include middle office solutions for the UK's largest asset managers and asset owners
- 3rd largest fund administrator

LUXEMBOURG

- Servicing asset owners, asset managers specialising in tax-transparent funds
- Lobbied government to secure change in legislation for tax transparent funds
- First provider to launch a third party UCITS management company

SWITZERLAND

- 30+ years experience in the Swiss market
- Asset management and asset servicing solutions for a diverse Swiss client base
- Investing in local fund administration and servicing teams

IRELAND

- Ireland's second largest administrator and custodian by number of funds
- Centre of excellence for tax-transparent funds from hubs in Dublin and Limerick
- Expertise in servicing multinational pension pooling vehicles

NETHERLANDS

- Over 30 years experience in servicing Dutch institutional investors and investment managers
- Specialist provider to pension funds, insurers and asset managers
- Innovative local investment and distribution support for asset managers

MIDDLE EAST

- Servicing 11 of top 20 sovereign funds and government entities
- Servicing asset managers, owners and family offices from Abu Dhabi and Riyadh
- Bespoke investment services including Outsourced CIO and local DC solutions

GUERNSEY

- Guernsey's largest fund administrator, custodian and transfer agent
- Recognized globally for expertise in private equity administration
- Providing offshore trustee services for institutions and individuals worldwide

NORDICS

- Serving the Nordic region's most sophisticated investors from Stockholm and Oslo
- Clients across sectors including pension insurance, government, banking and asset management
- Delivering innovative ESG/SRI investment and asset servicing solutions

Market presence statistics updated 2020 and 2021 based on available data sources

The Future of Global Custody



GLOBAL CUSTODY

What is Global Custody?

Standard Custody

Enhanced Services

Safekeeping	Sundry Asset Recordkeeping	Settlement	Cash Management	Proxy Voting	Reporting	Core Custody Tax
Network Management	Mutual / Alternative Fund Services	Reconciliation	Pricing	Settlement Embedded Foreign Exchange	Income Collections	Corporate Actions
Repo Services	Class Actions	Enhanced Reconciliation Services	Client Directed / Provided Pricing	Securities Lending	Accounting Reporting	Enhanced Tax Services for LPs
Physical Services	Client Directed Segregated Accounts	DC Retirement Allocation Tool	Client Directed Lending	External Directed Borrowing	Regulatory Reporting	Tax Transparent Fund Services

INDUSTRY TRENDS AND HOW CUSTODIANS RESPOND

Markets grow more complex and more costly



Regulatory complexity

Rapidly expanding and divergent regulations strain resources



Demand for data and insight

Powerful new analytics raise the bar for volumes, accuracy, and strong data governance



Pace of technological change

Rapid evolution makes "keeping up" a challenge without scale to invest



Asset class digitization

To take advantage, investors need providers with the right infrastructure and expertise



Efficiency and productivity

The paradox: efficiency is essential, yet requirements are growing more complex



Money in motion

DB to DC, active to Passive (ETFs), eequities to alternatives, in-house management



Fee Pressure

Outsourcing options, aaccess to liquidity, location strategy, trust fee evolution

The Digitization of our Environment



THE JOURNEY TO DIGITAL MARKETPLACES

Asset servicers have always evolved with the times

CERTIFICATED



IMMOBILISED



DEMATERIALISED



DIGITALISED















Pre-1975

- Physical certificates
- Non-Delivery Versus Payment (DVP) settlement
- High cost and high risk

1975 onwards

- Central Securities Depositories (CSD) introduced
- Immobilised in CSDs and traded in book entry form
- Delivery Versus Payment (DVP) introduced

1985 onwards

- Securities issued and settled in book entry form
- · Gradual phasing out of certificates (immobilised and bearer)

2018 onwards

- First true digital issuance of securities emerge
- Blockchain technology takes hold

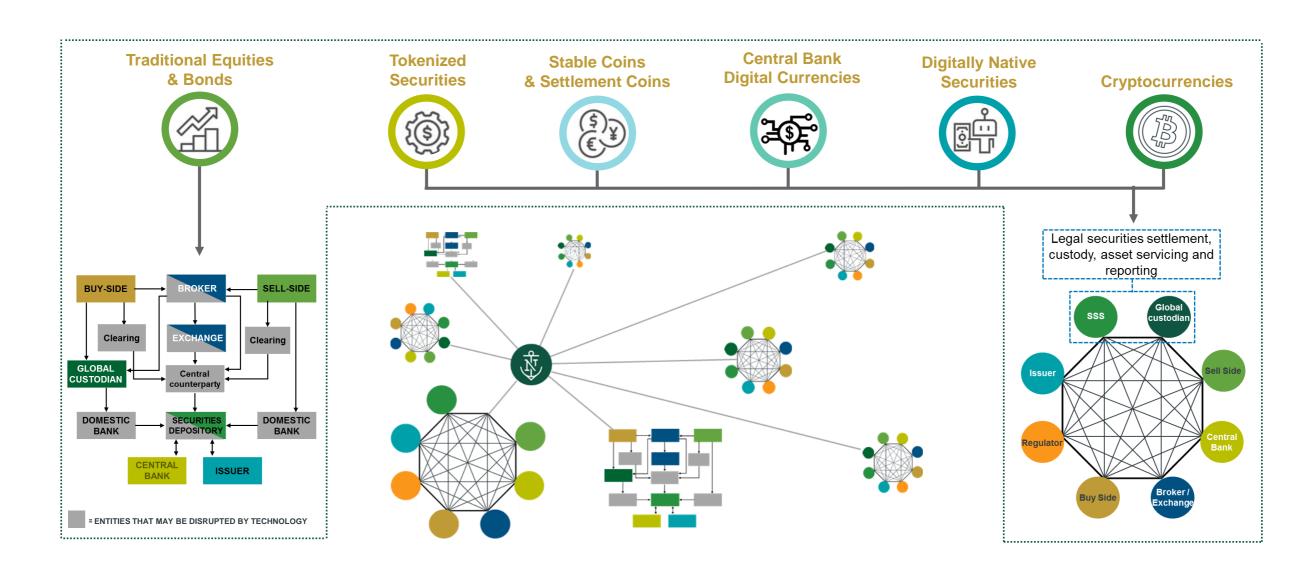
Circa 2030

- Digital issuance of securities is the norm
- Transactions and settlement are instant
- Regulatory oversight is live via direct access to ecosystems

northerntrust.com | © 2021 Northern Trust 10 NTAC:3NS-20

THE COEXISTENCE OF TRADITIONAL AND DIGITAL ECOSYSTEMS

We are now seeing the emergence of digital ecosystems which will result in an increased number of markets in which we offer custody services



WHAT HAS NORTHERN TRUST BEEN DOING?

Innovating and reimagining our products and services

Our Experience

Our process in action – a selection of indicative projects

- Internal research into the blockchain and cryptocurrency begins (Q1 2015)
- Live deployment of Northern Trust's blockchain private equity fund administration capability (March 2017)
- Northern Trust becomes a foundation investor in the World Bank's Blockchain Operated New Debt Instrument (bond-i) (August 2018)
- Northern Trust and BondEvalue Partner to Deliver Fractionalised Bond Ownership Using Blockchain Technology (November 2019)
- BondEvalue and Northern Trust Collaborate to Complete World's First Blockchain-based Bond Trade (August 2020)
- Standard Chartered and Northern Trust partner to invest in the launch of Zodia (December 2020)

Strategic opportunities



Digital Custody

Partnering to offer institutionalgrade custody solutions for digital assets and cryptocurrencies



Digital Market Infrastructure & Assets

Engaging with industry partners and regulators to advocate and lead digital innovation

– eg. tokenisation



Digital Central Bank Currencies

Investing in technology and key partnerships to support developments and evolving regulatory requirements



Australian Stock Exchange (ASX)

Working with the ASX as their CHESS system is transitioned to DLT – an opportunity for new models



Data & Insight

Supporting alpha generation and enabling our clients with actionable insights to enhance decision making



Artificial Intelligence

Enhancing operational alpha and empower our clients, e.g.. Robotic process automation in reconciliation exceptions

NTAC:3NS-20 northerntrust.com | © 2021 NorthernTrust 12

THANK YOU!

northerntrust.com | © 2021 NorthernTrust

IMPORTANT INFORMATION

Confidentiality Notice: This communication is confidential, may be privileged, and is meant only for the intended recipient. If you are not the intended recipient, please notify the sender as soon as possible. All materials contained in this presentation, including the description of Northern Trust, its systems, processes and pricing methodology, are proprietary information of Northern Trust. In consideration of acceptance of these materials, the recipient agrees that it will keep all such materials strictly confidential and that it will not, without the prior written consent of Northern Trust, distribute such materials or any part thereof to any person outside the recipient's organization or to any individual within the recipient's organization who is not directly involved in reviewing this presentation, unless required to do so by applicable law. If the recipient is a consultant acting on behalf of a third party client, the recipient may share such materials with its client if it includes a copy of these restrictions with such materials. In such event, the client agrees to comply with these restrictions in consideration of its accepting such materials.

© 2021 Northern Trust Corporation. Head Office: 50 South La Salle Street, Chicago, Illinois 60603 U.S.A. Incorporated with limited liability in the U.S. Products and services provided by subsidiaries of Northern Trust Corporation may vary in different markets and are offered in accordance with local regulation. This material is directed to professional clients only and is not intended for retail clients. For Asia-Pacific markets, it is directed to expert, institutional, professional and wholesale clients or investors only and should not be relied upon by retail clients or investors. For legal and regulatory information about our offices and legal entities, visit northerntrust.com/disclosures. The following information is provided to comply with local disclosure requirements: The Northern Trust Company, London Branch; Northern Trust Global Investments Limited; Northern Trust Securities LLP. Northern Trust Global Services SE, 10 rue du Château d'Eau, L-3364 Leudelange, Grand-Duché de Luxembourg, RCS B232281; Northern Trust Global Services SE UK Branch, 50 Bank Street, London E14 5 NT; Northern Trust Global Services SE Sweden Bankfilial, Ingmar Bergmans gata 4, 1st Floor, 114 34 Stockholm, Sweden; Northern Trust Global Services SE Netherlands Branch, Viñoly 7th floor, Claude Debussylaan 18 A, 1082 MD Amsterdam; Northern Trust Global Services SE Abu Dhabi Branch, registration Number 000000519 licenced by ADGM under FSRA # 160018. The Northern Trust Company Saudi Arabia, PO Box 7508, Level 20, Kingdom Tower, Al Urubah Road, Olaya District, Riyadh, Kingdom of Saudi Arabia 11214-9597, a Saudi Joint Stock Company – Capital 52 million SAR. Regulated and Authorised by the Capital Market Authority License # 12163-26 CR 1010366439. Northern Trust (Guernsey) Limited (2651)/Northern Trust Fiduciary Services (Guernsey) Limited (29806)/Northern Trust International Fund Administration Services (Ireland) Limited (160579) / Northern Trust Fiduciary Services (Ireland) Limited Office: Georges Court, 54-62 Townsend Street, Dublin 2,

