



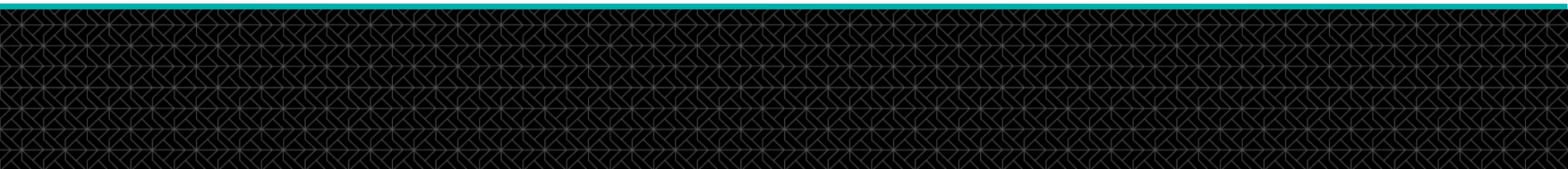
Securing Today. Shaping Tomorrow.®

DTCC Institutional Trade Processing (ITP)

Strategy Overview & 2018 Focus Areas

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ITP Strategy | Overview

The industry is demanding no-touch post-trade processing to ensure settlement finality and reduce cost and complexity; the ITP strategy leverages Omgeo assets to deliver this vision for buy-side, sell-side and custodians

- ITP is uniquely positioned to facilitate the straight-through processing of institutional trades with the linkage global infrastructure, the ALERT SSI repository and our 6,000+ global client community across 52 markets
- ITP will reduce exceptions, settlement fails and operational cost for the industry with a common platform integrating reference data (LEI, SSI) enrichment, agreement and consolidated exception and settlement management processes
- The urgency of the strategy is driven by increasing cost pressures on clients, competition and fragmented workflows, the need to deliver lower-cost services, reduce post-trade platform complexity and streamline and enhance the user experience
- We will execute our strategy over three years by providing immediate and ongoing incremental client value with functional components that add standalone benefits and enable the retirement of legacy platforms via a new, cloud-based architecture

50%

Reduction in Fails
w/ GC Direct

7.5M

SSIs in ALERT

98%

SDA Rates w/
CTM

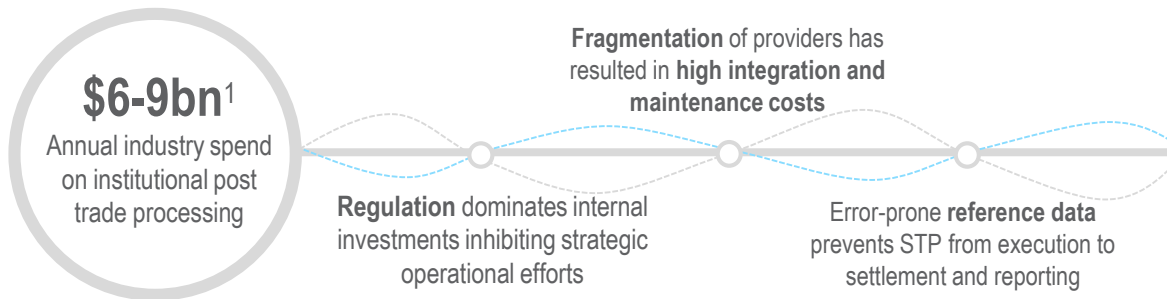
+2M

Trades Processed
on ITP Daily

ITP Strategy | Business Drivers

1. Market Trends

The ongoing reality of thin margins and increasing operational cost and complexity is no longer just a sell-side issue, but also being directly felt by buy-side and custodian market participants



¹ Source: base60 analysis. Oliver Wyman/Morgan Stanley data "Wholesale Banking & Asset Management. 2014, 2015, 2016". Based on annual spending for core post-trade and related functions within highly standardized asset classes

2. Client Challenges



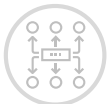
Multiple points of reconciliation throughout the trade lifecycle both within organizations and between organizations leading to **expensive exception management** processes and technology



Lack of comprehensive and real time trade lifecycle view leads to inefficient post trade process, wasted resources and costly exception processing and fails management



Persistence of manual processes at each step in the post-trade process and in pockets of the industry drives up operational cost for all actors in the post-trade process



Multiple solutions with different data formats, messaging, communication methods and platforms require sell-side and custodians to have multiple complex systems to support their buy-side clients

3. DTCC Challenges

Multiple redundant products across the post trade lifecycle with limited integration of data and no cohesive user experience (proprietary data formats, messaging and platforms, multiple dashboards and interfaces across products)



High operational costs and complexity limiting time to market and ability to rapidly innovate and deliver new services



Slow delivery and inability to rapidly develop new capabilities and respond in an agile and nimble manner to increasing competitor threats



An opportunity exists to fundamentally change the ITP business and deliver on a compelling strategy that positions ITP and our clients for long-term viability and success

ITP Strategy | Principles

The ITP Strategy reflects a renewed vision to enable clients to eliminate the number of “touches” in the post-trade lifecycle and consolidate exception & settlement management processes

Focus on execution & delivering client value

- Primary objective is to **create client value**; secondary objective is to drive down cost
- Efficient **linkage** down to Core (M2i) and overall DTCC technology capability improvements



Consolidated view & management of full trade lifecycle

- Including aggregation of trades **matched outside of DTCC**
- **Automation** to drive down exceptions & **collaboration tools** for quick issue resolution
- Increased **tracking** to ensure settlement finality



Centralization & persistence of golden source reference data

- **Integrated SSI and LEI data** to facilitate downstream processes & retire local data stores



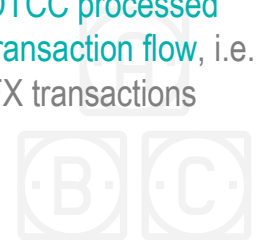
Establishment of an authoritative trade record

- **End-to-end automation**, reduces reconciliation & touch points

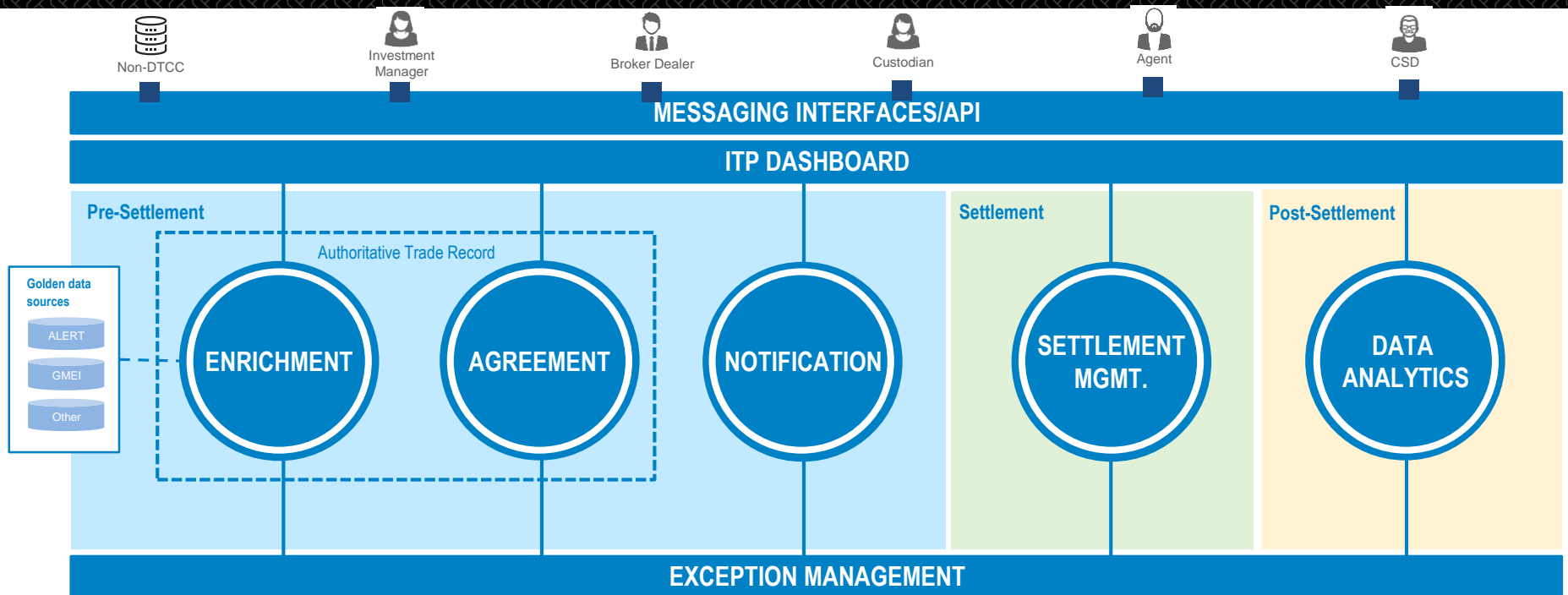


Open architecture & adoption of best practices & standards

- Robust **API framework & flexible interfaces** to support our community
- Addressing manual clients with **value add services**, intuitive interfaces
- **Capture of non-DTCC processed transaction flow**, i.e. FX transactions



ITP Strategy | Target State



MESSAGING INTERFACES

A. Pre-settlement – capture all post-execution trade flow from multiple channels including non-DTCC platforms and pre-matched FIX

B. Settlement - capture trade settlement status from multiple channels including custodians, agents, CSDs, SWIFT, etc.

ITP DASHBOARD

Single interface to the ITP platform to view and manage post-trade lifecycle events

TRADE ENABLEMENT & ENRICHMENT

Support account management and enhanced “smart” sourcing from authoritative/ golden data sources (e.g. SSI, GMEI/LEI, account info.)

AGREEMENT

Offer local match & central match standard workflows as well as pre-agreed trades from third party sources

Extensible support for new workflows (e.g. DLT) and asset classes

NOTIFICATION

All parties (buy-side, sell-side, CSDs) receive notification from the same, single authoritative trade record

SETTLEMENTS MANAGEMENT

Expand trade lifecycle coverage to link settlement status to original transaction improving settlements accuracy and timeliness

DATA ANALYTICS

Offer high-value operational data, analytics and reporting to increase transparency and enable improved client performance

EXCEPTION MANAGEMENT

Provide consolidated view, collaboration and resolution tools for exceptions that occur throughout the post-trade lifecycle

ITP Strategic Roadmap

Year 1 | Deliver client value & the foundational new platform

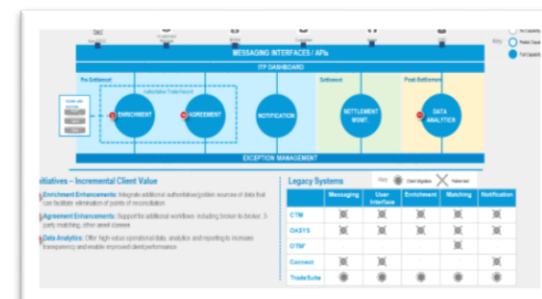
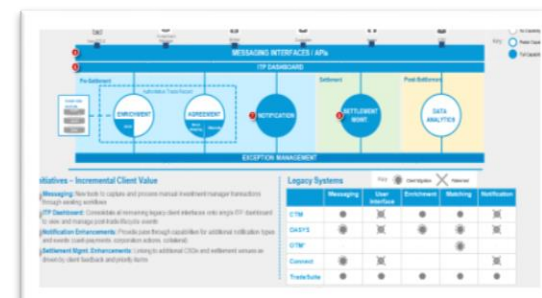
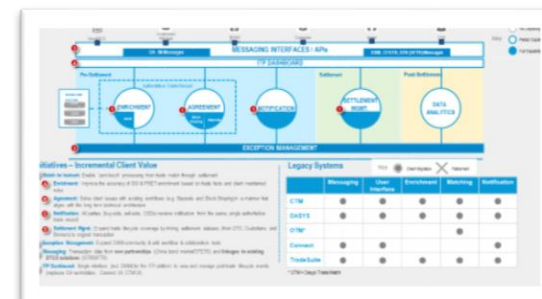
- **M2i:** Automated processing from trade match through settlement
 - **Enrichment:** Improve accuracy of SSI & PSET enrichment, increase ALERT usage
 - **Agreement:** Enable increased US flows through CTM
 - **Settlements Management:** Expand trade lifecycle by linking settlement status
- **DXM:** Expand community and collaboration & workflow tools

Year 2 | Begin consolidation via client value driven initiatives

- **M2i:** Extend STP workflow to additional markets
 - **Settlements Management:** Link to additional CSDs for settlement status
- **UI:** Consolidate legacy interfaces to new central dashboard
- **Notification:** Consolidate legacy application notifications to new platform
- **Messaging:** Translation tools to increase trade & settlement status capture
- **Retirement:** legacy user interfaces, messaging standards, OASYS, CONNECT

Year 3 | Continue consolidation of legacy ITP solutions

- **Expansion** to support additional flows including Broker-to-Broker and Tri-party
- **Enrichment:** Expand central data sources (fees, taxes)
- **Data Analytics:** Embed operational analytics with exception data, workflows
- **Retirement:** CTM, enable TradeSuite migration



ITP Strategy | 2018 Priorities

In alignment with the ITP Strategy, the product focus for 2018 is on the acceleration of key foundational services and workflows; specifically ALERT, Match-to-instruct (M2i) and DTCC Exception Manager (DXM)

1 DTCC ALERT

Objective: Accelerate community build, maintenance automation and smart enrichment capabilities
Client Focus: Custodian adoption and client migration, Advisory council feedback
Development: Custodian and Prime Broker integration, Broker Lift-Out pilot offering

2 Match-to-Instruct (M2i)

Objective: Launch early adopter pairings, prepare participants for AKAS integration
Client focus: Broker dealer projects to “go-live,” Custodian alignment
Development: Integration testing, smart enrichment capabilities

3 DTCC Exception Manager (DXM)

Objective: Build early adopter community, accelerate ingestion of Custodian and Broker data
Client focus: Buy side early adopters, large Custodian exception processing
Development: Mapping of Custodian exception files, rollout activities

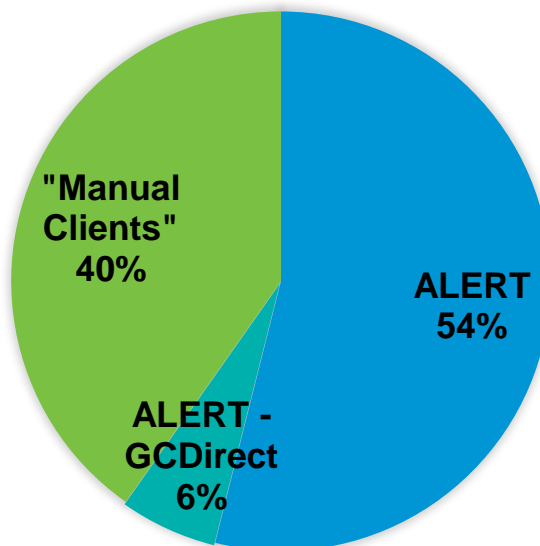
ALERT | Strategic Approach

Our objective is to achieve 100% coverage of SSIs in all markets and asset classes with direct management by Global Custodians; this requires multiple concurrent initiatives to (i) address the “manual” non-ALERT clients and (ii) the migration of Custodian client accounts to GC Direct.

CURRENT SSI COVERAGE (ACCOUNTS)

Drive 100% ALERT Coverage

- ✓ ASSIsT
- ✓ IM Lift-out
- Broker Lift-out
- Regulatory Comment / Mandate
- “White Paper” – thought leadership / marketing campaign



Drive GC Direct Adoption

- ✓ Custodian Lift-out
- ✓ ALERT for Prime Brokers
- Industry “Custodian Playbook”
- Custodian Metrics / KPI
- Buy Side Outreach & Custodian Communications
- GC Direct Adoption Timelines

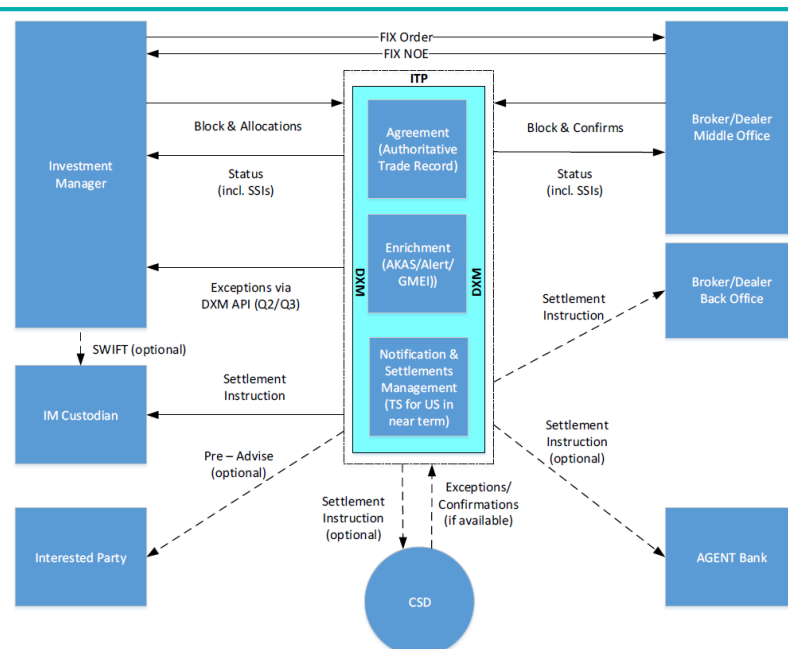
* “Manual” % derived from qualitative client feedback and industry working group analysis

- ✓ Available
- In Progress
- Proposed / Concept

Match-to-Instruct (M2i)

M2i provides a true end-to-end market utility workflow, uniquely positioned to facilitate trade settlement across asset classes, via a single global platform

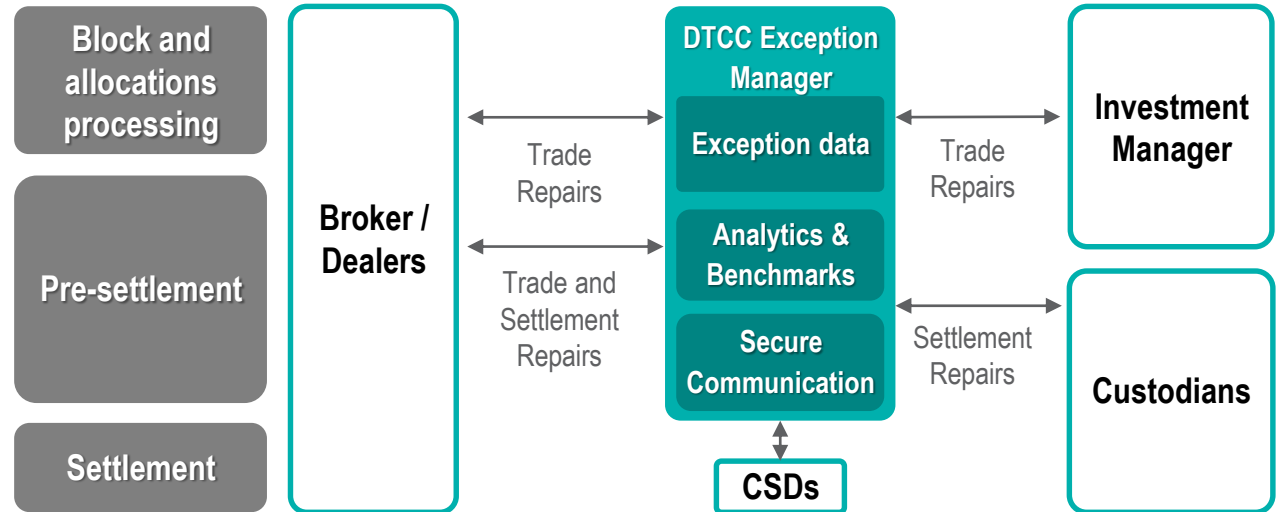
- DTCC will facilitate trade agreement on T and this will serve as the **authoritative trade record**, eliminating the need for duplicative matching or affirmation
- SSIs will be maintained centrally** in ALERT through GC Direct and Broker Direct interfaces and leveraged to enrich the authoritative trade record centrally
- DTCC will implement a new rules based application (AKAS) to select the preferred location (PSET) and associated SSIs for both the IM and BD. **PSET will be “locked in” on T**
- In general, the broker will meet the end users/custodians at their preferred location (leaving any necessary repositioning as the responsibility of the broker), which will **reduce fails as well as reduce custodian and end user costs**
- DTCC will leverage the enriched trade record to create **“mirror image” settlement instructions** for both the dealer and the custodian (in the case of settlements at DTC, these will be passed directly to DTC for settlement)



DTCC Exception Manager (DXM)

Description

- DXM is a platform to publish, view and communicate on exceptions throughout the trade lifecycle process.
- This exception and workflow management service will support all securities transactions globally.



Benefits

Buy-side and outsourcers

- IM has one place to view a consolidated exception report for all its brokers and custodians
- Pre-settlement and settlement information can be tracked centrally and delivered to relevant parties
- Near real time view saves significant effort and reduces risk
- Robust communication capabilities connect buy-side with brokers and custodians
- Risk metric dashboard provides transparency on risks present in exceptions population
- Can replace current client exception reporting and client portals

Broker

- IM clients will be able to view exceptions, reducing broker interaction and manual processes
- Pre-settlement and settlement exception reported centrally and delivered to relevant parties
- Near real-time view saves significant effort and reduces risk

Custodian

- Pre-settlement and settlement exception reported centrally and delivered to relevant parties
- Near real-time view saves significant effort and reduces risk
- May replace current exception reporting



Designing an alternate settlement model to improve equity clearing and settlement processing efficiency, promote settlement finality, reduce equity clearing requirements, and provide members with liquidity enhancements.

WHAT WE'RE DOING

- Actively discussing with clients:
 - Introduction of new settlement optimization algorithms
 - Creation of enhanced asset lending programs
 - Introduction of intraday settlement slices
 - Creation of an equity margin pledge facility

HOW THIS BENEFITS CLIENTS

- Integrates solutions with existing equity settlement enhancements (e.g., Match to Instruct, optional accelerated settlement)
- Increases capital efficiency for the industry
- Reduces systemic risk by increasing intraday settlement finality and reduces reliance on end-of-day funding
- Provides incremental improvements over time by leveraging Agile methodology
- Leverages advanced technology, as appropriate
- Leverages existing input and output where possible to minimize impact on clients



Leveraging the Office of Fintech Strategy to spearhead all of DTCC's activities for research, technical acumen, collaboration, and thought leadership.

WHAT WE'RE DOING

- Distributed Ledger Technology (DLT)
 - Selected IBM, AXONI, and R3 to develop DTCC's distributed ledger solution for derivatives processing
 - Board seat on Digital Asset Holdings (DAH) and exploring FICC opportunities
 - Strong advocate of open source software; platinum member of Hyperledger and member of Enterprise Ethereum Alliance (EEA)
- Robotics for Process Automation (RPA)
 - Established automation Center of Excellence and governance framework; standards and tools selected
 - Implementing RPA pilots on three use cases out of a pipeline of 40; anticipate executing 25 use cases in 2018
- Artificial Intelligence (AI) and Machine Learning (ML)
 - Early Stage implementations in finance, Global Trade Repository (GTR), standing settlement instructions (SSI), underwriting, and wealth management
 - Exploring advanced AI/ML capabilities for settlement optimization, model risk management, and derivatives reporting

HOW THIS WILL BENEFIT CLIENTS

- Focus on innovations that deliver the biggest benefit to the largest number of users
- Implement new technologies at scale and do it flawlessly with close coordination with the industry
- Avoid duplicate approaches to similar industry challenges that would create a disconnected maze of technology siloes
- Develop the foundations and governance framework for supporting the implementation of emerging technologies
- Place a greater emphasis on developing future talent, by emphasizing STEM education