



DTCC



A ROADMAP FOR PROMOTING INTRADAY SETTLEMENT FINALITY IN U.S. MARKETS

A White Paper to the Industry • December 2012



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INTRODUCTION

The Depository Trust Company (DTC), a subsidiary of The Depository Trust & Clearing Corporation (DTCC), is planning on implementing a number of major structural modifications to the U.S. settlement process that will fundamentally alter the way securities transactions in equities, corporate debt and municipal debt securities are settled in the U.S. These proposed changes represent significant enhancements to the settlement process.

DTCC, through its subsidiaries, has helped automate, centralize, standardize and streamline processes critical to the safety and soundness of the capital markets. DTC, the depository, provides clearing and settlement capabilities for the financial services industry, and in 2011 settled transactions worth more than \$287 trillion.

This paper provides a high-level overview of key DTC settlement initiatives planned for the next five years. Together, these initiatives will:

- enhance intraday settlement finality
- substantially reduce systemic credit and liquidity risk for DTC and participants
- align DTC with internationally-established best practices
- promote straight-through processing (STP)
- encourage institutional trade affirmation
- improve processing efficiency
- better position DTC for a shorter settlement cycle, if and when recommended.

DTC continuously monitors and reviews its settlement processes and makes adjustments as needed. However, in light of DTC's recent efforts to further reduce systemic risk (as outlined in DTCC's Systemic Risk Paper published in September of 2011) and in light of recently published recommendations for Securities Settlement Systems (SSS) by the Committee on Payment and Settlement Systems (CPSS) of the International Organization of Securities Commissions (IOSCO), DTC has identified a number of significant enhancements to the U.S settlement process that will further improve the safety and soundness of the system for years to come while at the same time aligning its settlement system closer to global standards.

These enhancements are multi-year projects and represent DTC's vision for the future of settlement finality and risk reduction; they will likely require significant planning and development by participants. As such, DTC has created this settlement roadmap that will provide a high-level overview of upcoming system enhancements and provide a proposed implementation timeline for each enhancement. It should be noted that these dates and deliverables are subject to change based on continued input from participants and regulators.

As noted earlier, this paper will discuss enhancements targeted for implementation over the next five years. Some of the enhancements are still being refined. As such, the enhancements will be presented at a high level for context with more detailed descriptions to follow. The objective of the paper is to provide participants with information regarding the strategic future of the U.S. settlement process in DTC and to allow participants to begin projecting development resource requirements accordingly.



EXECUTIVE SUMMARY

In an effort to improve intraday finality in DTC and thereby reduce risk, DTC is proposing a number of enhancements to its existing settlement process. These enhancements include:

PRE-SETTLEMENT MATCHING (SETTLEMENT MATCHING)

Settlement Matching will require receiving participants to match (authorize or approve) Deliver Order (DO) and Payment Order (PO) transactions prior to DTC attempting to process transactions, eliminating the need for reclamation transactions (reclaims). Eliminating reclaims enhances intraday settlement finality, reduces settlement uncertainty and eliminates the credit and liquidity risk associated with DTC's rules allowing certain reclaims to bypass DTC's collateral and net debit cap controls. Settlement Matching, which is the global standard used in almost every other major Central Security Depository (CSD) and International Central Security Depository (ICSD) throughout the world, will be introduced in a manner that promotes institutional trade affirmation and encourages STP for institutional transactions. This will be done by leveraging the existing infrastructure in place to match/affirm institutional transactions and to submit transactions, via an automated STP process, to DTC for settlement.

CNS FOR VALUE

CNS for Value will seek to modify the way transactions resulting from National Securities Clearing Corporation's (NSCC) Continuous Net Settlement (CNS) service are processed in DTC. NSCC is a DTCC subsidiary. With CNS for Value, CNS transactions will be processed as valued transactions in DTC instead of the current free of payment transactions. The proposed CNS for Value enhancement reduces risk in DTC by eliminating the contagion risk that losses in DTC or NSCC could spill over into each other. CNS for Value also provides participants with greater efficiency of intraday liquidity, provides DTC and NSCC with better risk monitoring tools and positions DTC to introduce alternative settlement models (e.g., multiple intraday settlement slices and settlement prefunding) at a later date should such models be warranted.

SHORTENED SETTLEMENT CYCLE

Shortened Settlement Cycle is an ongoing industry initiative to analyze the business case for shortening the settlement cycle for U.S. equity and corporate and municipal debt transactions from its current three days (T+3) to two days (T+2) or one day (T+1). Shortening the settlement cycle would reduce the market risk associated with trades between trade date and settlement date and would reduce participant's liquidity and capital requirements. In addition, many of the "enablers" associated with shortening the Settlement Cycle, such as settlement matching described above, would further reduce risk and costs by improving STP.

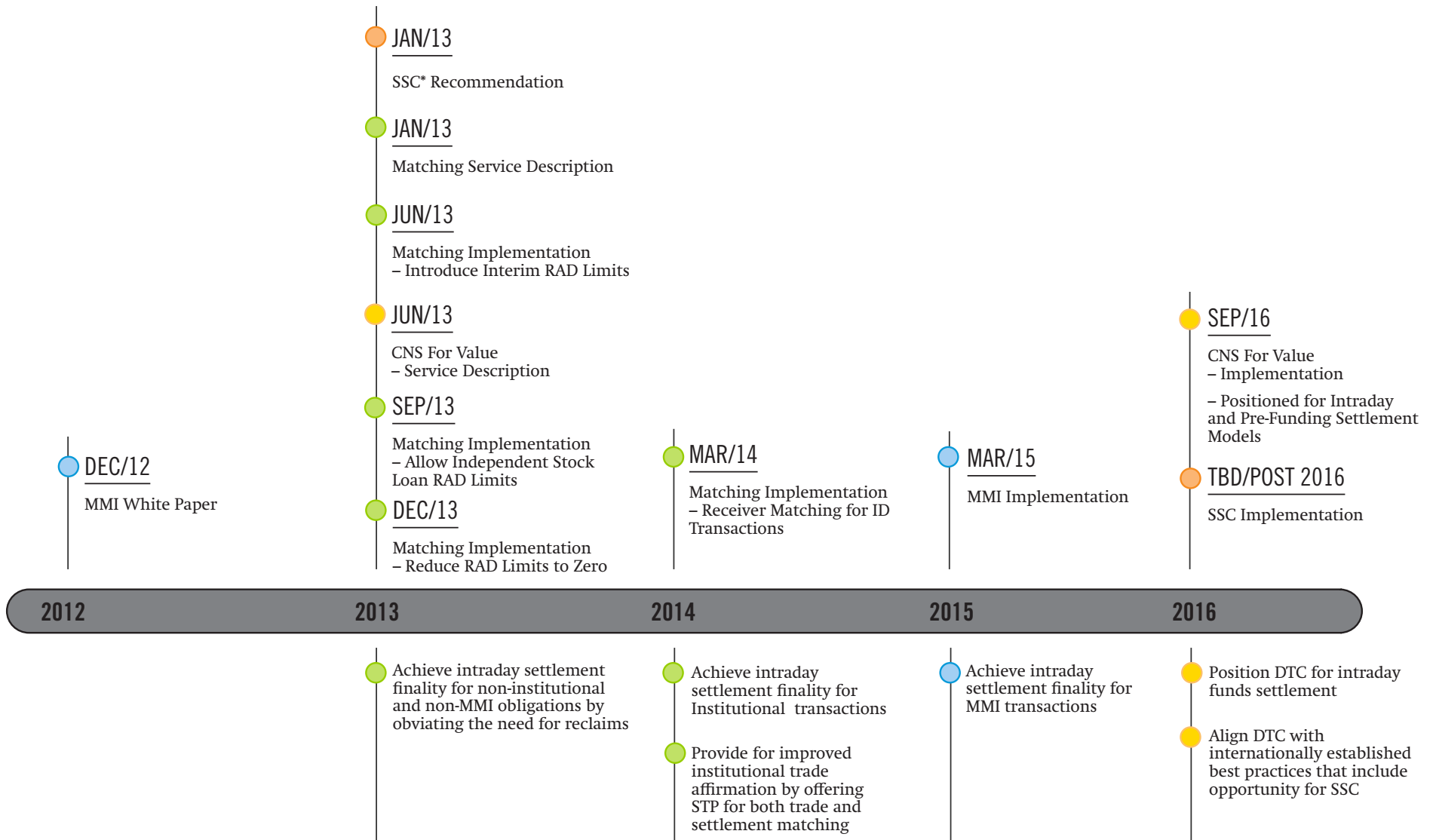
IMPROVING INTRADAY FINALITY FOR MMI TRANSACTIONS

Modifications to DTC's Money Market Instruments (MMI) program will introduce structural changes to the program by aligning issuance and maturity activity within specific issuers, eliminating the need for intraday reversals of processed MMI activity in the event of the failure of an MMI issuer. The MMI program redesign outlined in this paper, which represents the final set of changes intended to address concerns identified by

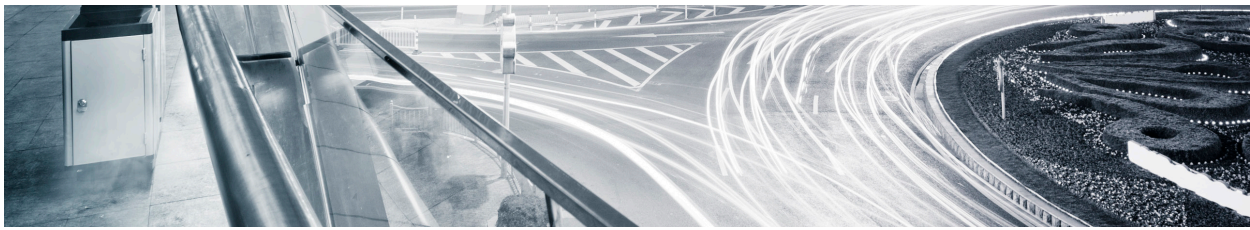
an industry-established Blue Sky MMI Task Force, will eliminate the risks associated with MMI reversals and promote further intraday settlement finality.

This paper will provide a high-level overview of the enhancements as well as a proposed timeline to allow participants to project resource needs over the next five years.

PROPOSED TIMELINE



* Shortened Settlement Cycle



SETTLEMENT MATCHING

CURRENT PROCESS

Currently, DTC does not employ a transaction settlement matching requirement. Because of this limitation, DTC allows receiving participants to reclaim processed transactions undermining intraday finality and introducing significant systemic credit and liquidity risk to DTC and its participants.

DTC receives the vast majority of its settlement-related transactions in three ways. For exchange deliveries processed through NSCC's CNS service, NSCC submits transactions to DTC on behalf of its participants. CNS transactions are generally matched at the trading venue and will not require secondary settlement matching. Institutional transactions that are "affirmed" in Omgeo are submitted directly to DTC where they await the deliverer's authorization for processing. The bulk of the remaining settlement related transactions are Deliver Orders (DOs) and Payment Orders (POs) that are submitted to DTC directly from participants or their service providers (participant submitted transactions).

DTC will attempt to process all participant submitted DO and PO transactions upon input. Providing all DTC risk management controls are satisfied (position, collateral monitor and net debit cap), the transaction is processed by DTC with securities credited to the receiver, in the case of DO transactions, and funds debited from the receiver. Since the receiver has limited ability to control what transactions get processed against its account, DTC allows receiving participants to "reclaim" or return processed transactions prior to end of day. To allow certain reclaim transactions to be processed, DO transactions with settlement values less than \$15 million and PO transactions with settlement values less than \$1 million will be processed without regard to DTC's risk management controls. As a result, a reclaim transaction exposes DTC and its participants to the risk that a participant may have a settlement net debit that exceeds its net debit cap or a settlement debit for which it does not have sufficient collateral to support. (DTC currently processes approximately 8,000 reclaim transactions per day with an approximate settlement value of \$5 billion.)

The ability to reclaim a processed transaction undermines intraday finality. Allowing receiving participants to unilaterally reverse transactions late in the afternoon of settlement date means processed transactions are not reliable until the end of DTC's reclaim cutoff which generally occurs at approximately 3:30 PM. This lack of intraday certainty can preclude the timely updating of customer's accounts by participants and extends the window of risk associated with processed transactions until very late in the settlement day when there is generally little opportunity to react to unknown transactions. Because of issues like those identified above, the CPSS-IOSCO recommends securities settlement systems, like DTC, provide for intraday settlement finality where possible.

PROPOSED NEW PROCESS

With the implementation of DTC's settlement matching requirement, participants will be required to match all settlement-related transactions prior to them being processed by DTC. To match transactions, DTC will leverage existing functionality to minimize the cost and risk associated with development. Transactions that are matched for settlement will be final and will not be reclaimable by receiving participants.

BENEFITS

Implementing a settlement matching requirement allows DTC to eliminate its current reclaim capability, improving intraday finality at DTC and eliminating the risk inherent in the reclaim process.

NEXT STEPS

Implementation of DTC's settlement matching enhancement will be phased in beginning the second quarter of 2013 with full implementation targeted for first quarter 2014. In December of 2012, DTC will issue an important notice with a detailed settlement matching implementation timeline. In early 2013, DTC will produce a detailed settlement matching white paper which will provide a more detailed description of DTC's settlement matching requirement.



CNS FOR VALUE

CURRENT PROCESS

Currently, DTC runs an end-of-day net settlement model. Securities are delivered intraday, free or versus payment intraday with related funds credits and debits which generate a net debit or credit balance for end-of-day settlement. DVP securities are owned intraday by DTC pending net funds settlement at end-of-day. DTC has net debit cap and collateral monitor controls so that, if a participant with a net debit balance at settlement fails to satisfy its settlement obligation, DTC has sufficient liquidity resources to fund system wide settlement among non-defaulting participants.

DTC is exploring alternative settlement models designed to provide improved settlement finality by implementing intraday, prefunding or, if possible, real-time settlement. The implementation of any alternative settlement model within DTC is contingent on modifications to the way CNS obligations are processed in DTC – an initiative known as CNS for Value.

DTCC has two subsidiaries responsible for the clearance and settlement of transactions in U.S. equity, corporate and municipal debt securities: DTC and NSCC. DTC is the depository for securities positions and operates an end-of-day net settlement system supported by intraday collateral and net debit cap controls. NSCC clears and settles virtually all broker-to-broker transactions. As a central counterparty (CCP), NSCC guarantees and nets trades resulting in net settlement obligations over a 3-day trading pipeline.

Currently, the settlement of netted CNS obligations takes place at DTC. The settlements of CNS obligations are processed as free of payment transactions in DTC with the settlement debits and credits associated with the CNS transactions recorded in NSCC. Since the debits and credits associated with CNS obligations are maintained in NSCC, credits in the NSCC system cannot be used intraday to offset debits in the DTC system increasing the level of intraday funding required from participants. Likewise, maintaining settlement balances in two separate systems reduces DTC and NSCC's overall ability to monitor and manage the risk associated with individual participants.

Because securities movements and settlement posting take place in different systems, DTC and NSCC have a cross-guaranty arrangement in place that requires both entities to provide collateral and/or cash to the other in the event of a participant's inability to satisfy its settlement obligation. As a CCP, NSCC is unable to apply debit caps and collateral controls on its participants, thereby increasing the likelihood that NSCC may be unable to meet its requirements under the existing DTC/NSCC cross-guaranty. This contagion risk, although remote, could be significant and as such is addressed in the CPSS-IOSCO recommendations which encourage securities settlement systems to insulate themselves against other Financial Market Intermediaries (FMIs).

PROPOSED NEW PROCESS

In the proposed new CNS for Value model, which is still being discussed with participants and regulators, CNS transactions, like all other transactions in DTC, will "pend" if their processing would cause a violation of the risk controls. Like other pending DTC transactions, pending CNS transactions would be resolved by prefunding of settlement obligations intraday by participants.

BENEFITS

By subjecting CNS obligations to DTC's debit cap and collateral controls, participants will automatically be able to offset credits in NSCC with debits in DTC, reducing intraday funding requirements through a process known as intraday cross-endorsement. CNS for Value will also provide DTC and NSCC the added benefit of monitoring and controlling a participant's settlement activity across both entities and identifying and limiting exposures much earlier in the process. Furthermore, subjecting CNS obligations to DTC's risk controls eliminates the need of the DTC/NSCC cross guarantee arrangements, thereby eliminating the obligations each entity has to each other in the event of a participant failure and eliminating the contagion risk outlined in the CPSS-IOSCO principles.

As noted earlier, DTC is exploring alternative settlement models as a way to further promote intraday settlement finality. These models include the creation of intraday settlement "slices" which would entail DTC performing multiple settlement processes throughout each business day, and a settlement prefunding requirement which would require participants prefund some, or all, of their DTC activity. Although neither of these models is being proposed at this time, CNS for Value is a prerequisite to the implementation of an alternative settlement model at DTC.

NEXT STEPS

In September 2011, DTC published a CNS for Value white paper which provided a high-level description of the CNS for Value model. DTC is in the process of drafting a CNS for Value service description which will provide a detailed description of the CNS for Value proposal. The CNS for Value Service Description and Time line will be available second quarter 2013.



INTRADAY SETTLEMENT FINALITY FOR MMI TRANSACTIONS

CURRENT PROCESS

In DTC's current Money Market Instrument (MMI) process, MMI issuers employ Issuing and Paying Agent (IPA) banks to act on their behalf to process MMI transactions in DTC. When IPAs generate issuance instructions, DTC creates new security positions and delivers the positions, generally versus value, to a DTC dealer or custodian. When the MMI issuances mature, DTC automatically "sweeps" the MMI positions, again generally versus value, from the account of the dealers and/or custodians to the account of the IPA. MMI issuance transactions represent settlement credits to IPAs and the maturity transactions represent settlement debits to IPAs.

DTC's Rules provided the IPA with the option to instruct DTC to "refuse-to-pay" (RTP) for an MMI issuer any time before 3:00 P.M. when the settlement value of the MMI issuer's maturities exceeds the settlement value of its new issuances or the IPA has not received funding on a given day. In the event of an MMI RTP, DTC will reverse all valued transactions processed for the designated issuer on the current day.

MMI reversals undermine intraday finality by allowing IPAs to unilaterally instruct DTC to reverse processed transactions. As mentioned earlier, this interferes with the timely updating of customer accounts by participants and extends the window of risk associated with processed transactions until very late in the settlement day when there is generally little opportunity to react to unknown transactions.

MMI reversals also create risk to DTC and its participants since the reversals are processed without regard to DTC's risk management controls, i.e., MMI reversals could cause a participant's net debit to exceed its net debit cap or result in insufficient collateral to support its net debit. Recognizing that MMI reversals create risk to DTC and its participants, DTC has implemented additional risk controls specific to MMI transactions. To protect DTC and its participants against the impact of MMI reversals, DTC withholds, from the calculation of participants' net debit caps and collateral monitors, the value of the largest net credit associated with a single MMI issuer via a risk control known as the Largest Provisional Net Credit (LPNC). The LPNC risk control ensures that an individual participant's debit cap and collateral controls are not breached if DTC processes reversals for any single MMI issuer (DTC recently expanded its LPNC control to provide the flexibility to withhold net credits associated with multiple MMI issuers).

In late 2009, DTC and SIFMA established a Blue Sky MMI Task Force to address risk related to structural flaws in DTC's MMI process including concerns related to MMI reversals within DTC. The results of the Task Force work was a number of potential changes to the MMI process, which were documented in the MMI Blue Sky Task Force report published in March 2011. Many of the short and medium-term recommendations outlined in the Blue Sky paper have been implemented, or are in the process of being implemented including modifications to the MMI settlement processing cutoffs and changes to the reversal procedure associated with an IPA's RTP. The next and final phase of completing the long term structural recommendations of the Blue Sky Task Force is establishing changes to eliminate the reversals of processed transactions related to an IPA's RTP.

PROPOSED NEW PROCESS

The MMI long-term proposed solution encompasses a process of linking individual MMI issuer's issuance and maturity transactions and staging the transactions for settlement only after the settlement value of the issuances exceeds the settlement value of the related maturing obligations (meaning the IPA is in a net settlement credit for the given issuer) or the IPA explicitly authorizes processing. These transactions would not be reversible since they would no longer be subject to an IPA RTP.

BENEFITS

Upon implementation of the MMI long-term changes, no MMI activity will be processed in DTC until DTC can determine that the transactions may be processed without reversal and are no longer subject to the IPA's RTP. By eliminating the MMI reversal capability, DTC will eliminate the risk inherent in MMI reversals and further promote intraday settlement finality.

NEXT STEPS

DTC is currently working with SIFMA and other industry groups to finalize the long-term MMI proposal and will produce a whitepaper detailing the structural changes to the DTC MMI service in December 2012.



SHORTENED SETTLEMENT CYCLE

In December 2011, DTCC released a whitepaper seeking feedback from the industry on shortening the current settlement cycle from T+3 to T+2 or T+1. Included in the whitepaper was a high-level outline of the benefits of shortening the settlement cycle as well as a status of the building blocks that were defined in 2000 when the industry was planning to move to a T+1 settlement cycle. The paper requested industry feedback on performing a new cost/benefit analysis on shortening the settlement cycle. During the first quarter of 2012, DTCC socialized the white paper with a number of industry associations. Industry response suggested the time was right to perform another cost/benefit analysis but the study should be done independently, by a third party, and should consider T+2, T+1 and the obstacles to reaching T+0. Through a Request for Proposal (RFP) process, DTCC employed Boston Consulting Group to define the business case of moving to T+2 or T+1.

In addition to the STP and risk-related benefits associated with shortening the settlement cycle, many of the building blocks identified as part of the analysis make sense on a stand-alone basis. In fact, many of the modifications outlined in this paper have been identified as critical building blocks of shortening the settlement cycle.

Following the completion of the Boston Consulting Groups industry analysis, a paper was issued by DTCC, in October 2012, outlining the findings of the analysis and proposing suggested next steps. The shortened settlement cycle paper also identified the building blocks that would enable the move to a shortened settlement cycle. During November and December 2012, DTCC is broadly reaching out to industry associations, industry segments and individual firms for one-on-one meetings. DTCC plans to continue vetting the results of the BCG analysis and present an industry recommendation in January 2013.

SUMMARY

As noted throughout the paper, each project has multiple steps and dependencies spread over multiple years. The paper should be used as a roadmap to discuss and plan resources over that time period. More detailed system specifications will be distributed over the next few months that will allow participants to schedule and/or begin development work.

Questions regarding any of the modifications discussed in this paper can be directed to John Abel at 212 855 8434 or Jabel@dtcc.com.