

Investment Committee Agenda

SPECIAL MEETING

THURSDAY, NOVEMBER 3, 2022

TIME: 9:00 A.M.

MEETING LOCATION:

In accordance with Government Code Section 54953, subsections (e)(1) and (e)(3), and in light of the State of Emergency proclaimed by the Governor on March 4, 2020 relating to COVID-19 and ongoing concerns that meeting in person would present imminent risks to the health or safety of attendees and/or that the State of Emergency continues to directly impact the ability of members to meet safely in person, the LACERS Investment Committee's November 3, 2022 meeting will be conducted via telephone and/or videoconferencing.

Important Message to the Public
Information to call-in to listen and/or participate:
Dial: (669) 254-5252 or (669) 216-1590
Meeting ID# 160 252 7093

- Instructions for call-in participants:**
- 1- Dial in and enter Meeting ID
 - 2- Automatically enter virtual "Waiting Room"
 - 3- Automatically enter Meeting
 - 4- During Public Comment, **press *9** to raise hand
 - 5- Staff will call out the last 3-digits of your phone number to make your comment

Chair: Elizabeth Lee

Committee Members: Nilza R. Serrano
Janna Sidley

Manager-Secretary: Neil M. Guglielmo

Executive Assistant: Ani Ghokassian

Legal Counselor: City Attorney's Office
Public Pensions General
Counsel Division

Notice to Paid Representatives

If you are compensated to monitor, attend, or speak at this meeting, City law may require you to register as a lobbyist and report your activity. See Los Angeles Municipal Code §§ 48.01 *et seq.* More information is available at ethics.lacity.org/lobbying. For assistance, please contact the Ethics Commission at (213) 978-1960 or ethics.commission@lacity.org.

Request for Services

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

Sign Language Interpreters, Communication Access Real-Time Transcription, Assistive Listening Devices, Telecommunication Relay Services (TRS), or other auxiliary aids and/or services may be provided upon request. To ensure availability, you are advised to make your request at least 72 hours prior to the meeting you wish to attend. Due to difficulties in securing Sign Language Interpreters, five or more business days' notice is strongly recommended. For additional information, please contact: Board of Administration Office at **(213) 855-9348** and/or email at ani.ghokassian@lacers.org.

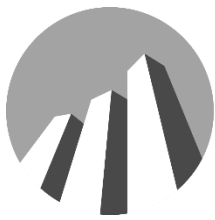
Disclaimer to Participants

Please be advised that all LACERS Board and Committee Meeting proceedings are audio recorded.

Information to listen only: Live Committee Meetings can be heard at: (213) 621-CITY (Metro), (818) 904-9450 (Valley), (310) 471-CITY (Westside), and (310) 547-CITY (San Pedro Area).

[**CLICK HERE TO ACCESS BOARD REPORTS**](#)

- I. PUBLIC COMMENTS AND GENERAL PUBLIC COMMENTS ON MATTERS WITHIN THE COMMITTEE'S JURISDICTION AND COMMENTS ON ANY SPECIFIC MATTERS ON THE AGENDA – *THIS WILL BE THE ONLY OPPORTUNITY FOR PUBLIC COMMENT - PRESS *9 TO RAISE HAND DURING PUBLIC COMMENT PERIOD*
- II. [TRANSITION MANAGER SEMI-FINALIST INTERVIEWS WITH ABEL NOSER, LLC; BLACKROCK INSTITUTIONAL TRUST COMPANY, N.A.; CITIGROUP GLOBAL MARKETS INC.; THE NORTHERN TRUST COMPANY; AND RUSSELL INVESTMENTS IMPLEMENTATION SERVICES, LLC AND POSSIBLE COMMITTEE ACTION](#)
- III. OTHER BUSINESS
- IV. NEXT MEETING: The next Regular meeting of the Investment Committee is scheduled for Tuesday, November 8, 2022, at 10:30 a.m., or immediately following the Board Meeting, at LACERS, 202 West 1st Street, Suite 500, Los Angeles, CA 90012 and/or via telephone and/or videoconferencing. Please continue to view the LACERS website for updated information on public access to Board/Committee meetings while response to public health concerns relating to the novel coronavirus continue.
- V. ADJOURNMENT



Board of Administration Agenda

SPECIAL MEETING

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President: Nilza R. Serrano

Vice President: Elizabeth Lee

Commissioners: Annie Chao
Thuy Huynh
Janna Sidley
Sung Won Sohn
Michael R. Wilkinson

Manager-Secretary: Neil M. Guglielmo

Executive Assistant: Ani Ghoukassian

Legal Counsel: City Attorney's Office
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REPORT TO INVESTMENT COMMITTEE
From: Neil M. Guglielmo, General Manager

MEETING: NOVEMBER 3, 2022
ITEM: II

Neil M. Guglielmo

SUBJECT: TRANSITION MANAGER SEMI-FINALIST INTERVIEWS WITH ABEL NOSER, LLC; BLACKROCK INSTITUTIONAL TRUST COMPANY, N.A.; CITIGROUP GLOBAL MARKETS INC.; THE NORTHERN TRUST COMPANY; AND RUSSELL INVESTMENTS IMPLEMENTATION SERVICES, LLC AND POSSIBLE COMMITTEE ACTION

ACTION: CLOSED: CONSENT: RECEIVE & FILE:

Recommendation

That the Committee:

1. Interview the following five firms as the qualified semi-finalists in the Investment Transition Management Services search: Abel Noser, LLC; BlackRock Institutional Trust Company, N.A.; Citigroup Global Markets Inc.; The Northern Trust Company; and Russell Investments Implementation Services, LLC; and
2. Advance all five firms as finalists for contract awards by the Board.

Executive Summary

On July 12, 2022, the Committee approved five firms to proceed as semi-finalists for the Investment Transition Management Services search: Abel Noser, LLC; BlackRock Institutional Trust Company, N.A.; Citigroup Global Markets Inc.; The Northern Trust Company; and Russell Investments Implementation Services, LLC. Based on due diligence conducted on each firm, staff recommends that the Committee interview each firm and advance all five firms to the Board for contract awards to comprise LACERS' new bench of transition management service providers.

Background

The Board approved a request for proposal (RFP) process to evaluate the current marketplace for Transition Management Services on January 25, 2022. LACERS is seeking to refresh the existing bench of transition management service providers with up to five firms to manage LACERS' portfolio restructuring needs.

The search opened on February 14, 2022, and closed on April 11, 2022. A total of eight proposals were received; no proposals were received from emerging investment manager firms. On July 12, 2022, the

Committee considered staff's evaluation of the proposals and advanced five firms to proceed as semi-finalists for staff to conduct further due diligence on:

- Abel Noser, LLC (incumbent firm)
- BlackRock Institutional Trust Company, N.A. (incumbent firm)
- Citigroup Global Markets Inc. (incumbent firm)
- The Northern Trust Company
- Russell Investments Implementation Services, LLC

Due Diligence

Staff's due diligence consisted of on-site meetings at the semi-finalists' offices, teleconferences, and reference checks. Specific areas of examination included the firm's personnel, trading, technology, compliance, business continuity, and historical performance on transition management projects. Staff's due diligence confirmed the capabilities of each firm as described in the proposals and yielded no material adverse findings. Accordingly, staff deems all five semi-finalists to be qualified to provide transition management services to LACERS. Staff recommends all five firms to proceed as finalists to comprise LACERS' new bench of transition management service providers. This diversified group of managers will provide LACERS with a broad range of transition management capabilities across multiple asset classes.

Upon Investment Committee interview and concurrence with the staff recommendation, the proposed finalists will be moved forward to the Board for consideration and contract awards. The Board will be provided the opportunity to meet and interview the finalists, if desired, consistent with the process approved by the Board on January 25, 2022.

Strategic Plan Impact Statement

The RFP for investment transition management services to create a bench of transition managers assists the fund with optimizing long-term risk adjusted investment returns (Goal IV). Implementing a competitive bidding process by issuing an RFP is in line with Goal V (uphold good governance practices which affirm transparency, accountability, and fiduciary duty).

Prepared By: James Wang, Investment Officer I, Investment Division

NMG/RJ/BF/JW/JP:rm

- Attachments:
1. Transition Manager Semi-Finalist Matrix
 2. Semi-Finalist Presentation – Abel Noser, LLC
 3. Semi-Finalist Presentation – BlackRock Institutional Trust Company, N.A.
 4. Semi-Finalist Presentation – CitiGroup Global Markets Inc.
 5. Semi-Finalist Presentation – The Northern Trust Company
 6. Semi-Finalist Presentation – Russell Investments Implementation Services, LLC

2022 Investment Transition Management Services Search Semi-Finalist Matrix					
Firm legal name	Abel Noser, LLC	BlackRock Institutional Trust Company, N.A.	Citigroup Global Markets Inc.	The Northern Trust Company	Russell Investments Implementation Services, LLC
Location of primary office servicing the LACERS account	New York, NY	San Francisco, CA	New York, NY	Chicago, IL	Seattle, WA
Firm ownership structure	Wholly owned by Abel Noser Holdings, which in turn is majority owned by Estancia Capital and minority owned by Abel Noser employees.	Publicly traded investment company (NYSE: BLK).	Wholly owned, through a chain of subsidiaries, by Citigroup Inc., a publicly traded financial services company (NYSE: C).	Wholly owned subsidiary of Northern Trust Corporation, a publicly traded financial services company (NASDAQ: NTRS).	Majority owned by private equity funds managed by TA Associates.
Year firm began providing transition management	1986	1993	1996	1988	1980
Number of years of firm experience in transition management	36	29	26	34	40
Number of transition management and support staff	47	60	220	91	21
Primary contact for transition projects	Michael Iannucci, Managing Director/Head of Transition Management	John Planek, Vice President	Jerome Hogan, Vice President	Chris Honold, Vice President – Transition Management	Travis Bagley, Director – Transition Management



Transition Management

Presented to:

LACERS Investment Committee

November 3rd, 2022

PETER WEILER / Co-CEO / pweiler@abelnoser.com

DORIS PRADIEU / SVP, Transition Management / dpradieu@abelnoser.com

KEVIN YU / SVP, Transition Management / kyu@abelnoser.com

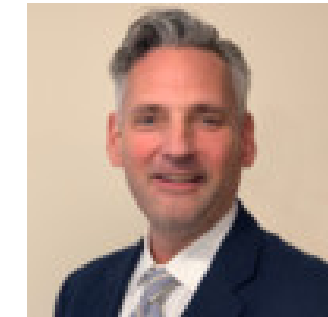
MARY DAVIDSON / SVP, Client Services / mdavidson@abelnoser.com

MICHAEL IANNUCCI / Head of Transition Management / miannucci@abelnoser.com

Presenters

Peter Weiler

- As **Co-CEO of Abel Noser Holdings**, Peter leads the firm's TCA and brokerage efforts. Over the years, he has provided consultative services to many of the world's leading institutional investors. Peter has also served as an adjunct professor at GW University. Peter holds a B.A. from Villanova University.



Doris Pradiou

- A **Senior VP** with our **TM Team**, Doris joined in 2009, having spent the previous five years with BNY's TM group. Doris is responsible for the development of Abel Noser's fixed income transition platform. She has an MBA in International Finance from Hofstra University



Kevin Yu

- Kevin is a **Senior VP** with the **TM Team**, and serves as a project coordinator and analyst for equity mandates. Kevin has been with the team since 2013, and has prior experience in the custody space. Kevin has a M.S. in Finance from Villanova University.



Mary Davidson

- Mary is a **Senior VP** with our **Client Services Team**, with responsibility for asset owners and consultants through much of the US. Mary has been with Abel Noser since 1995, and has a B.A. from Tulane University.



Michael Iannucci

- Michael is **Managing Director** and Head of the **TM Team** at Abel, and has been with the firm since 2004. He is a graduate of the College of William and Mary with concentrations in Economics and English, and is a frequent speaker at industry conferences.





Abel Noser

Over 30 Years of Industry Leading Analytics and Agency Trading

Founded in 1975 by Stanley S. Abel and Eugene A. Noser, Jr., Abel Noser is a registered agency-only broker-dealer and RIA. **Abel Noser** has long been respected as a leader in the campaign to lower the costs of trading for institutional investors. Each of our main business activities - global transition management services, transaction cost analysis, and agency-only institutional trading services – seeks to deliver efficiency and transparency to the investment process. **Abel Noser** is a global company with offices in New York, London, Metro DC, Atlanta and Los Angeles.

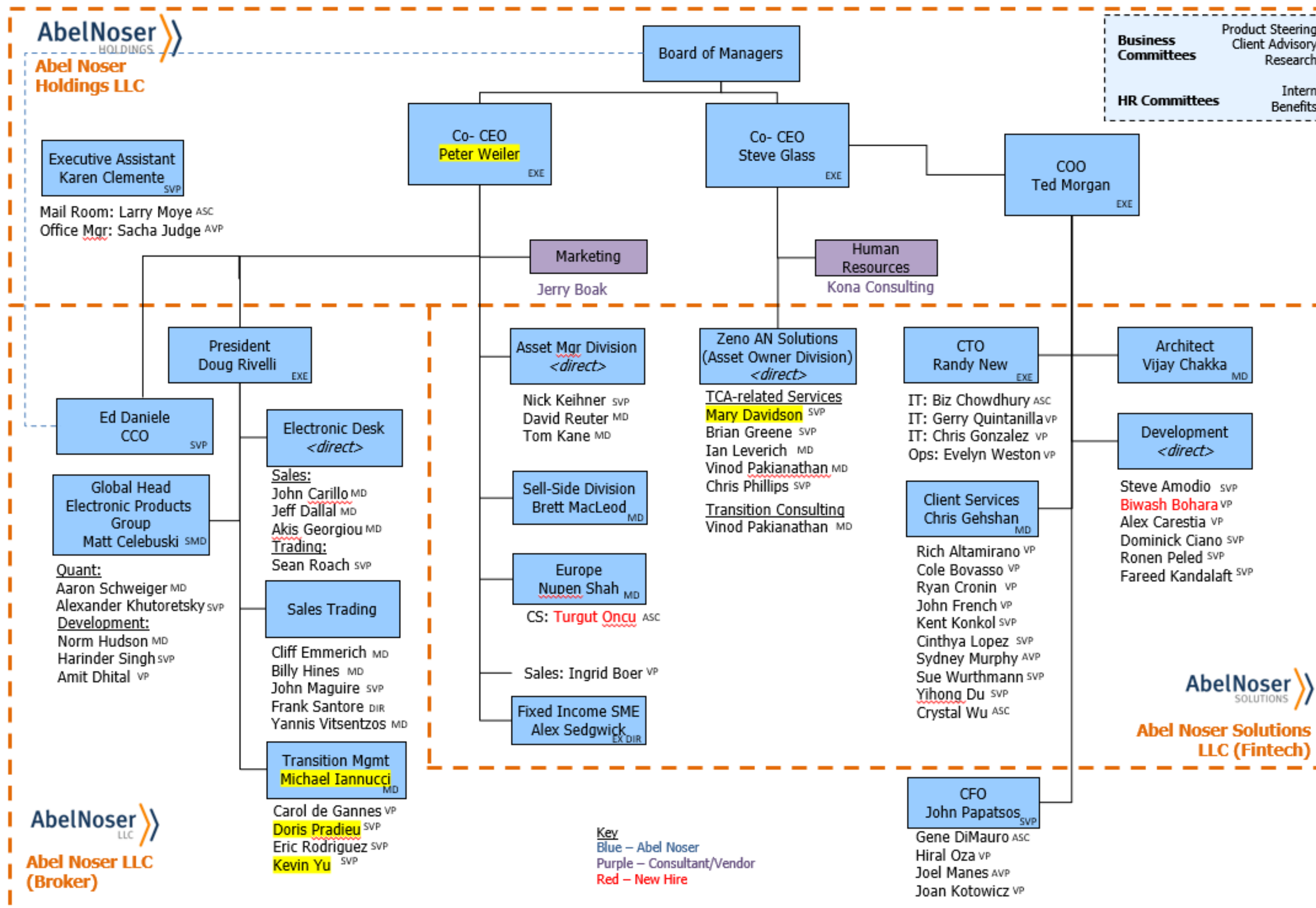
Transition Management Services

Experience and Analytics Make the Difference

As an industry leading provider of Transaction Cost Analysis, **Abel Noser** has a long history of working with asset owners to lower the costs associated with implementing their investment decisions. Transition management is a natural extension of this mission. We have built our trading environment from the ground up with one goal in mind: to consistently deliver measurably better executions. The coordination of experience and technology is fundamental to our ability to achieve optimal transition results. We emphasize communication during all phases of the process, understanding its importance in achieving your goals.

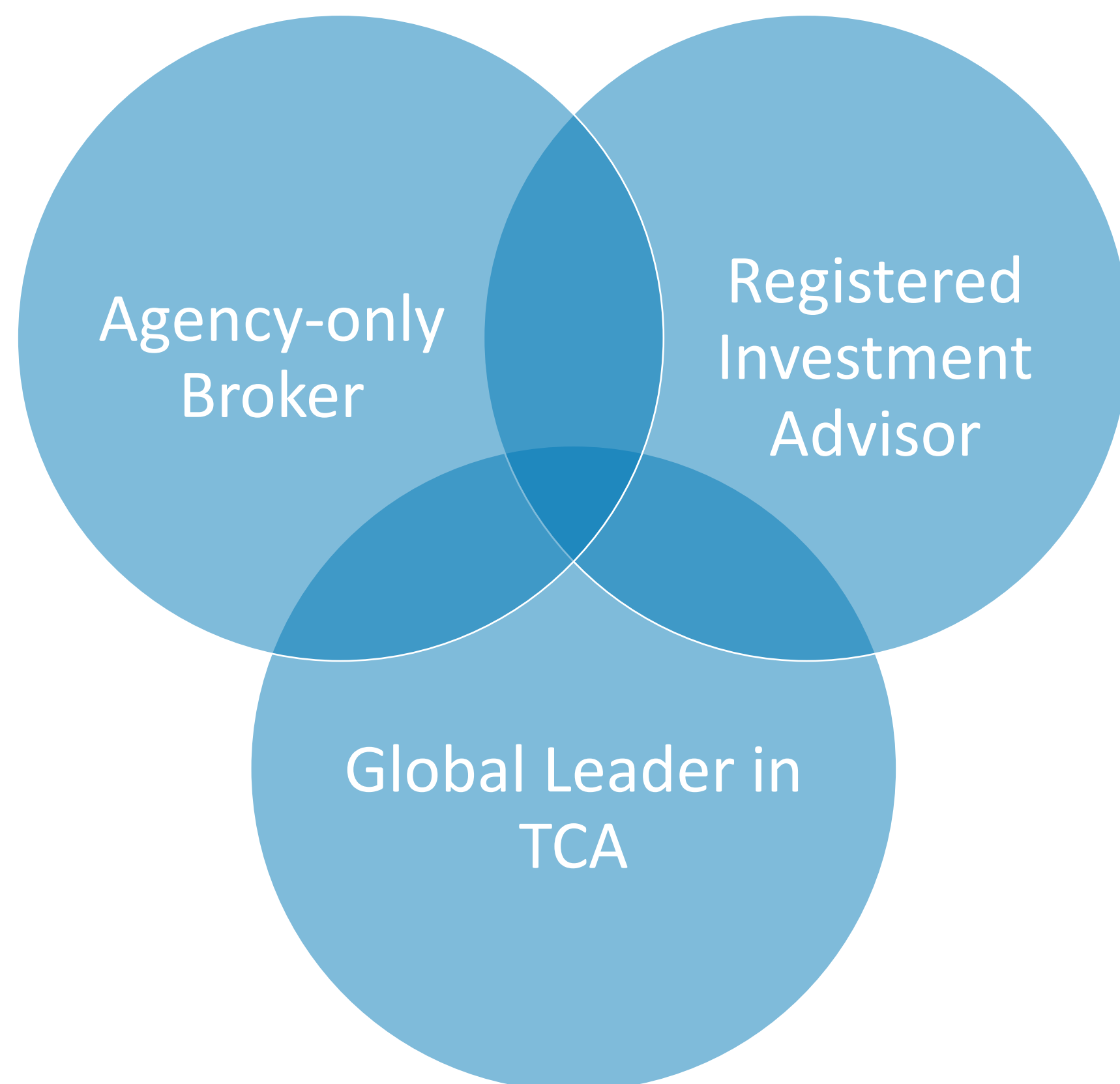


Organizational Chart



Transition Management Overview

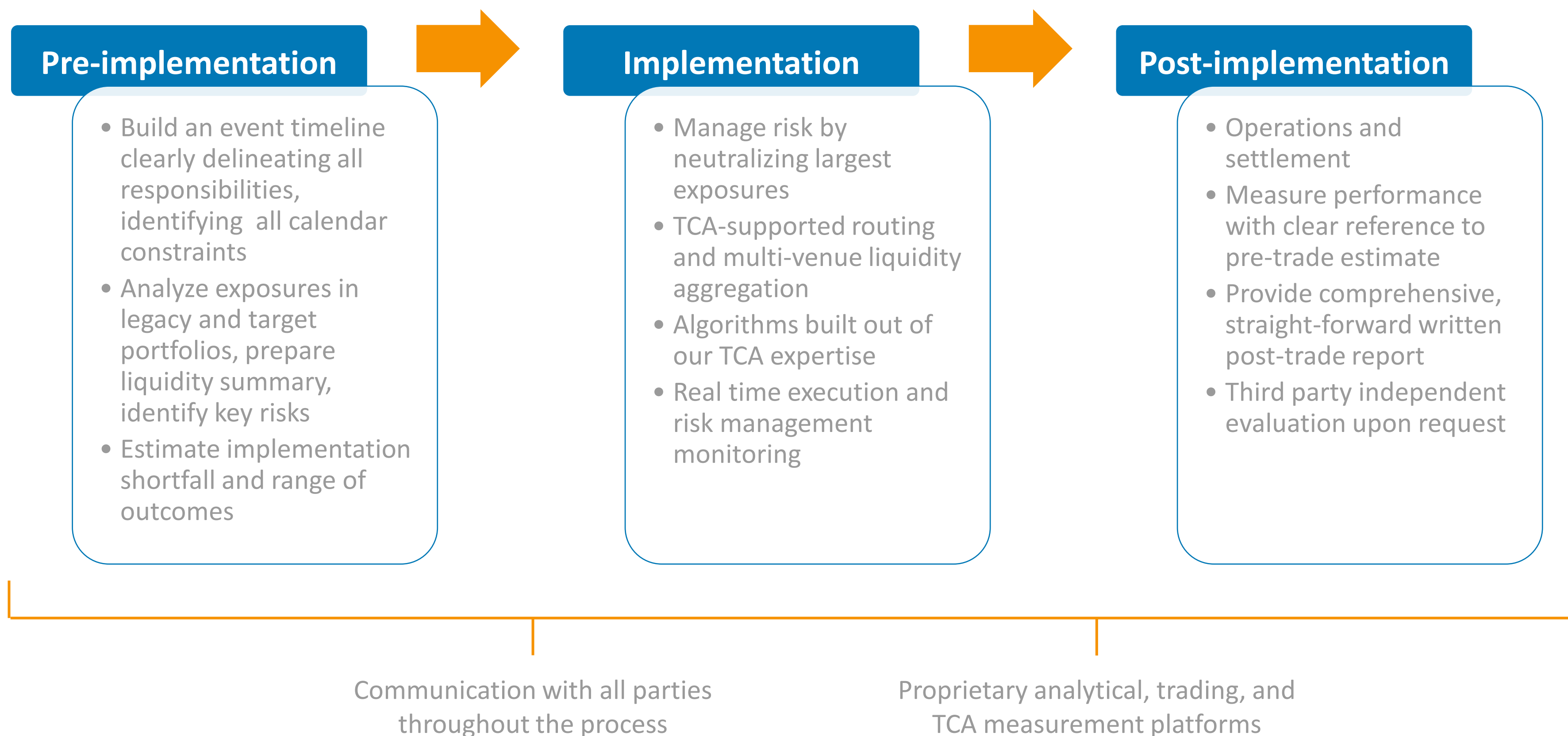
Abel Noser has been a provider of comprehensive Transition Management services since 1986. Our dedicated team operates out of Abel Noser, L.L.C., a duly registered broker dealer and registered investment advisor.



- As an **agency-only broker**, our sole objective is to act on our client's behalf in the market. We do not maintain any proprietary accounts, nor do we have an affiliated asset management arm against which TM orders may compete. And importantly, we do not maintain a commercial interest in any pools of liquidity.
- As a **Registered Investment Advisor**, we serve in a fiduciary capacity for nearly all of our TM mandates. The RIA designation also affords us access to best of breed technologies, as well as liquidity sources which restrict access to the buy-side.
- **Transaction Cost Analysis** informs every phase of Abel Noser's transition process. Our array of proprietary pre, intra, and post-trade tools are leveraged to the client's benefit in the TM setting, and our \$11 trillion universe of measured trades provides empirical support for everything we do, from how we route, to how we interact with each liquidity destination, to which algorithms we use.

Transition Management – Step by Step

Transaction Cost Analysis (TCA) informs every phase of Abel Noser’s transition process

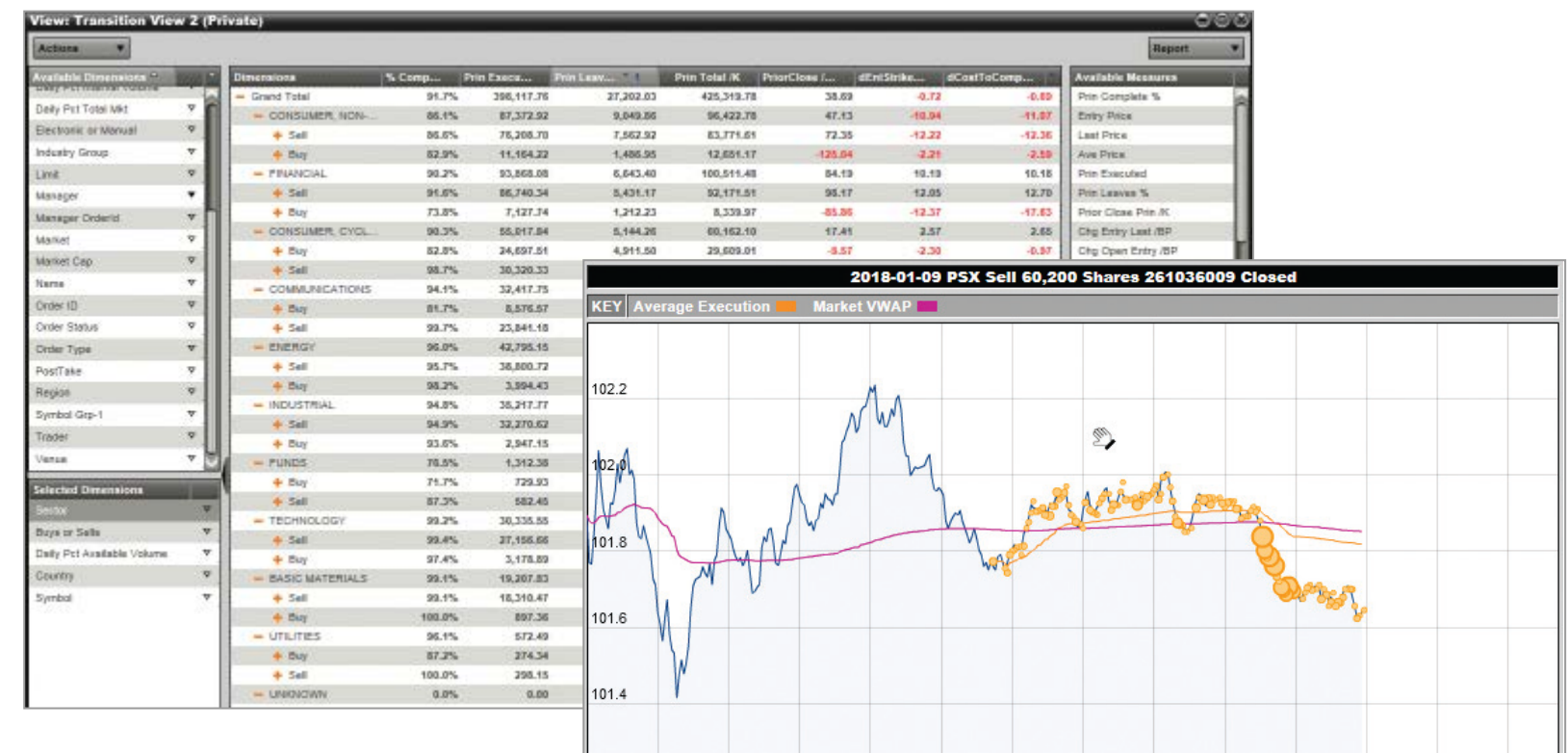


TCA-Driven Agency-Only Trading

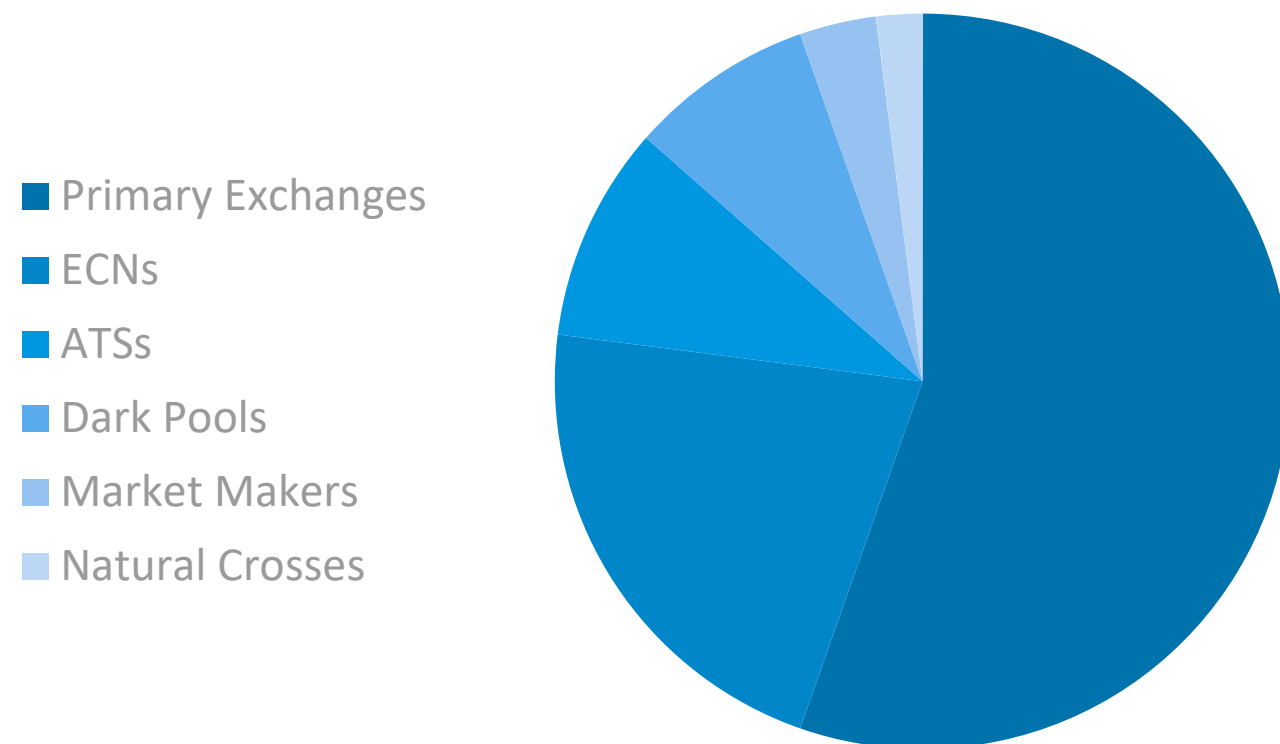
Abel Noser approaches each transition with one goal in mind: to consistently deliver measurably better executions.

Our industry-leading TCA platform and risk management tools are leveraged to the client's benefit, helping us to:

- Project execution costs with our proprietary model
- Manage risk by neutralizing largest exposures
- Vet venues empirically
- Identify highest quality algorithms
- Source liquidity for thinly traded securities
- Monitor executions and manage risk in real-time



Access to Global Equity Liquidity



- Market fragmentation has made it increasingly important that asset owners scrutinize where TM providers' liquidity is coming from.
- We have access to all global exchanges as well as non-displayed pools of liquidity (ECNs, ATSSs, dark pools, and market makers).

Venue Analysis and Routing Decisions

Our liquidity sources are vetted using our Universe of measured trades. This pool of data allows us to identify venue toxicity and discern which pools of liquidity routinely add value.

- Our TCA work informs our decision making process as it relates to liquidity sources, allowing us to route as efficiently as possible.
- We collect over 160 million fill-level data points per quarter and evaluate venues based on average fill size, latency, reversion, and spread capture. Importantly, we track retention by quartile so as to quantify the degree to which value add is persistent.
- This is a considerable advantage in navigating fragmented markets, both in aggregate and on a region, sector, and security-specific basis.
- As we do not have commercial interests in any liquidity venue, we can access all pools with the sole goal of best execution.

Venue	Fill Size	Latency	Reversion	Spread Capture
Venue A	\$8,850	-0.26378	-0.50507	49.6%
Venue B	\$32,990	-11.04529	-10.97027	33.1%
Venue C	\$8,916	0.27757	-0.40100	52.2%
Venue D	\$7,109	0.57106	-0.47220	58.2%
Venue E	\$92,512	0.08545	0.41140	50.9%

RankByPrincipal	Venue	FillCount	PrincipalUSD	AvgFillSizeUSD	MidPost01SecBP	MidPost60SecBP	MidPre01SecBP	MidPre60SecBP	SpreadCapturePerc	Venue Name
1	XNYS	25,295,532	223,875,194,728.34	8,850.38	-0.56	-0.51	-0.26	-0.93	49.6%	NEW YORK STOCK EXCHANGE, INC.
2	XOTC	4,818,350	158,959,748,839.29	32,990.49	-11.07	-10.97	-11.05	-11.34	33.1%	OTC BULLETIN BOARD
3	XNAS	14,549,079	129,725,420,147.05	8,916.40	-0.59	-0.40	0.28	-0.47	52.2%	NASDAQ - ALL MARKETS
4	ARCX	9,199,714	65,402,412,477.59	7,109.18	-0.46	-0.47	0.57	-0.46	58.2%	NYSE ARCA
5	IEGX	6,857,808	63,546,003,390.18	9,266.23	-0.76	-0.32	-0.71	-1.53	40.2%	INVESTORS EXCHANGE
6	XBOS	7,947,206	45,007,633,171.00	5,663.33	-0.25	-0.18	0.84	-0.11	66.1%	NASDAQ OMX BX
7	BATS	6,616,756	42,955,542,577.76	6,491.93	-0.20	-0.27	-0.12	-1.46	51.6%	CBOE BZX U.S. EQUITIES EXCHANGE
8	UBSA	4,004,244	41,976,636,623.75	10,483.04	-0.73	-0.10	-0.43	-0.89	44.0%	UBS ATS
9	EDGX	6,126,118	40,608,933,165.00	6,628.82	-0.39	-0.42	0.73	-0.47	62.6%	CBOE EDGX U.S. EQUITIES EXCHANGE
10	XADF	4,381,854	35,574,931,065.17	8,118.69	-1.36	-1.03	-1.40	-2.24	38.8%	FINRA ALTERNATIVE DISPLAY FACILITY (ADF)
11	LEVL	2,534,741	27,509,096,451.49	10,852.82	-0.72	0.17	-0.31	-1.19	38.4%	LEVEL ATS
12	EDGA	4,506,759	27,145,757,202.88	6,023.34	-0.24	-0.21	1.01	-0.08	69.6%	CBOE EDGA U.S. EQUITIES EXCHANGE
13	CDED	2,170,181	24,903,606,303.32	11,475.36	-2.12	-1.96	-2.07	-2.98	23.3%	CITADEL SECURITIES
14	XNGS	2,570,440	24,846,967,462.84	9,666.43	-0.15	0.31	-1.75	-3.62	38.8%	NASDAQ/NGS (GLOBAL SELECT MARKET)
15	BIDS	238,543	22,068,169,191.36	92,512.33	-0.03	0.41	0.09	-0.22	50.9%	BIDS TRADING L.P.
16	XNMS	2,823,283	20,412,564,279.81	7,230.08	-1.49	-1.71	-0.55	-1.86	66.7%	NASDAQ/NMS (GLOBAL MARKET)
17	BATY	4,476,960	19,976,436,633.60	4,462.05	-1.02	-0.69	-1.21	-2.23	41.9%	CBOE BYX U.S. EQUITIES EXCHANGE

Stock View

Stock Information
 Stock: LOCKHEED MARTIN CORP | Ccy: USD | Date: 2019-05-06
 Side: Buy/Sell | Shares: 100000 | Price: 334.07
 Report Ccy: USD | Direction: Combined

Estimated Costs

	Amount	CPS	BP
Prior Close	\$-109,594	-109.59	-32.81
Open	\$-63,131	-63.13	-18.90
Entry Strike	\$-48,196	-48.20	-14.43
Placement	\$-47,878	-47.88	-14.33
VWAP	\$-14,530	-14.53	-4.35
Interval VWAP	\$-8,407	-8.41	-2.52
Available VWAP	\$-13,173	-13.17	-3.94
20% Test	\$-21,326	-21.33	-6.38

% of ADV: 12.34 | Trade Size: 10 to 19.99%

Market Cap: \$94,387,740,672 | Sector: INDUSTRIAL
 Shares Outstanding: 282,538,809 | Group: AEROSPACE DEFENSE
 Annualized Turnover: 72.26% | Cap Style: LARGE CAP
 Average Spread: \$0.16 | Stock Style: GROWTH

Market	Venue	Sym...	ADV	Vo...	principal/day	shrs/tr...	trades...	trades...	ope...	clos...	CUSIP	ISIN
ALL	ALL	DR3E	828,263	100.00	\$258,490,049	173	4,775	12	18433	54	---	---
US	FINRA ADF	LMT	304,429	36.76	\$95,312,344	220	1,382	4	226	0	539830109	US5398301094
US	NEW YORK	LMT	234,221	28.28	\$72,650,016	324	723	3	17047	0	539830109	US5398301094
US	NASDAQ IM	LMT	101,433	12.25	\$31,714,926	109	932	3	33	0	539830109	US5398301094
US	EDGX EXCHA...	LMT	39,202	4.73	\$12,213,421	138	284	2	112	0	539830109	US5398301094
US	NYSE ARCA	LMT	30,166	3.64	\$9,511,368	120	251	2	39	0	539830109	US5398301094
US	INVESTORS EX	LMT	29,649	3.58	\$9,289,339	81	367	2	113	0	539830109	US5398301094
US	EDGA EXCHA...	LMT	24,335	2.94	\$7,585,983	104	233	2	125	0	539830109	US5398301094
US	CBOE BZX	LMT	23,622	2.85	\$7,413,231	111	211	1	101	0	539830109	US5398301094
US	CBOE BYX	LMT	17,788	2.15	\$5,508,245	103	173	1	100	0	539830109	US5398301094
US	NSDQ BX	LMT	14,361	1.73	\$4,482,581	107	134	1	101	0	539830109	US5398301094
US	NATIONAL	LMT	4,141	0.50	\$1,279,339	102	40	1	100	0	539830109	US5398301094
US	NSDQ OMX P...	LMT	2,426	0.29	\$764,671	118	20	1	106	0	539830109	US5398301094
US	NYSEAMERIC...	LMT	1,977	0.24	\$606,598	100	19	1	100	0	539830109	US5398301094
US	NYSE CHICA...	LMT	438	0.04	\$134,954	102	4	1	104	0	539830109	US5398301094
LN	LONDON	DR3E	75	0.01	\$23,034	36	2	1	26	54	539830109	US5398301094

Competitive Advantages

Abel Noser's award-winning analytics platform and long history of working on behalf of asset owners makes us the clear choice in the transition management space

TCA-Driven Process

- Our TCA research informs all aspects of our approach, allowing us to route orders to the most cost-efficient venues and deliver superior executions on behalf of our clients.

Over 30 Years of TM Experience

- Client service-oriented project management is at the heart of AN's TM offering. We strive to be a full-service transition manager, and not just an instrument of best execution. Our team helps asset owners avoid the pitfalls that can crop up in the early phases of the transition process. Our services add value in the planning stage as well as in the implementation stage.

Pure Agency Approach

- Our agency-only model is a vital safeguard against the conflicts of interest are inherent in other transition management models. Our sole objective is to act on our client's behalf and get the best possible price in the market.



Turning Trading Insight into Action

www.abelnoser.com

Thank you!



Telephone

1-646-432-4000
1-800-322-2610
(+)44 207 058 2109



Locations

New York, NY
Bethesda, MD
Los Angeles, CA

London, UK
Atlanta, GA

BlackRock®

Transition Management

BlackRock Transition Management -- LACERS Coverage



Jonathan Platt, CFA, Director, is Head of Americas Client Strategy in BlackRock's Transition Management team. He is responsible for managing a team of client strategists who advise institutional investors in the Americas on risk-managed portfolio transition solutions across multiple asset classes.

Prior to assuming his current role, Mr. Platt co-lead the Portfolio Management team within US TRIM and focused on the design and implementation of transitions for clients in the Americas.

Mr. Platt previously spent 13 years at BNY Mellon within the Beta & Transition Management team in both the San Francisco and London offices where he served as the Director of Portfolio Management. Additionally, Mr. Platt held past positions with Mellon Capital Management (business analyst) and Montgomery Securities (portfolio analyst).

Mr. Platt graduated from Florida State University with a B.S. in Finance and a B.A. in English.



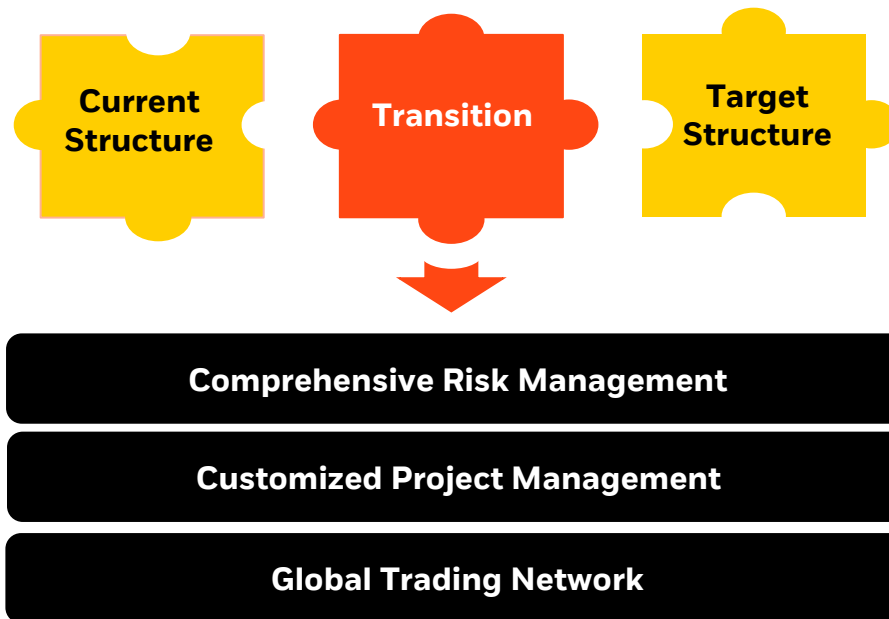
John Planek, Vice President, is a client strategist on the Transition Management (TRIM) team within BlackRock's ETF & Index Investments (EII) division. In this role he advises institutional investors in North America on multi-asset trading and risk management strategies during periods of portfolio or manager change.

John joined BlackRock in 2015 as a member of the Graduate Analyst program, after graduating from the University of Notre Dame with a BBA in Finance & Economics. He also graduated with an MBA from the University of Chicago in 2022.

Operating Model

BlackRock Transition Management Model

- Full fiduciary oversight with full transparency and no sell side conflicts
- Dedicated team of specialists focused exclusively on transitions
- Leverage BlackRock's risk analytics, portfolio management, and trading capabilities
- Based within the fiduciary environment of the world's largest asset manager



Key Capabilities

- Industry leading Aladdin risk management platform
- Transparent implementation reporting
- Agency-only multi-counterparty execution
- Scientific approach to trading

Experienced partner

- 60+ specialists globally*
- Integrated transition management systems
- Local presence in San Francisco, New York, London, and Hong Kong
- \$462 billion of transition flow in 2021**
- 213 transition events in 2021

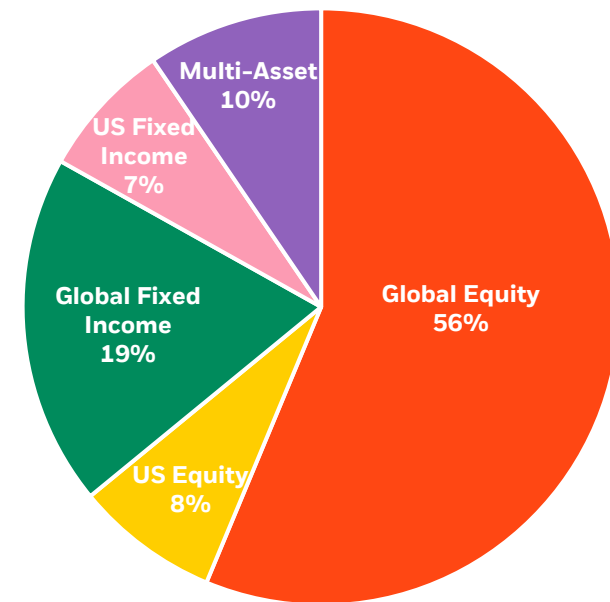
*as of June 30, 2022

**Full year 2021 round trip value

An Experienced Partner with Long Term Commitment to Core Business

- Core value added service since 1993
- Significant economies of scale transferred to our clients
- Global implementation services across all asset classes
- Fiduciary alignment of interests from the onset to execution

2021 Volume by Asset Class



Global 2021 Transition Volumes		
Asset Class	Transition RTV (in \$bil)*	Number of Events
Global Equity	\$259	106
US Equity	\$36	30
Global Fixed Income	\$89	39
US Fixed Income	\$33	16
Multi-Asset Class	\$45	22
Total Volume	\$462	213

Source: BlackRock *Refers to round trip value of assets transitioned

Organizational Structure

Index Equity & Portfolio Engineering Platform

Paul Whitehead
Managing Director
Co-Head of Index Equity & Global Head of
Portfolio Engineering & Platform

Global Transition Management

Jessica Irschick
Managing Director
Global Head of TRIM

Americas

Paul Francis
Managing Director
Head of AMRS TRIM

Will Jackson
Director
Head of AMRS
Portfolio Mgmt.

Chirag Lal
Vice
President
Head of AMRS
TM

Jon Platt
Director
Head of AMRS
Client Strategy

Laura Peres
Director
Head of AMRS
Product

Lorenzo Santinelli
Director
Vice President

James Curtin
Vice President

Christine Johanson
Director
Jose Tolosa

Jennifer Kung
Vice President

Adam Esposito
Director
John Planek
Vice President

Melinda Altamore
Associate
Ellen Zhang
Associate

Aleesha Mundra
Associate

Tolosa
Director
Karen Lindell
Vice President

Kenneth Wong
Vice President

Dianne Chung
Vice President

Erick Alvarez
Analyst

Quinn O'Connor
Associate

Jonathan Pizano
Associate
Keon Modeste
Analyst

EMEA

Nick Hogwood
Managing Director
Head of International TRIM

Ian Maguire
Director
Head of EMEA
Portfolio Mgmt.

Jon Tait
Vice
President
Head of EMEA
TM

Adam Lubczanski
Director

Jonathan Deans
Vice President

Steve Wagstaff
Director

Balazs Bogdan
Vice President

Parul Sood
Vice President

Stephen McGroarty
Director

Mikko Lindgren
Vice President

Nicholas Fischer
Vice President

Dickie Cheung
Vice President

Matyas Ujvary
Associate

Adam Champion
Vice President

Isobel Murray
Associate

Calder Manser
Vice President

Vivek Vishwanath
Vice President

Aman Hammond
Associate

Tom Lewis
Vice President

Ksenia Parviainen
Associate

Dominic Henry
Associate

Jamie Farley
Associate

Andrea Gidofalvy
Associate

Lauren Smith
Associate

Hunain Nadeem
Analyst

APAC

Tahmimm Hassan+
Director
Head of Asia TRIM

Raymond Zhao
Vice
President
Head of Asia
Implementation

Sachiko Takahashi
Vice President

Michael Xu
Vice President

Matthew Walton
Vice President

Junya Umeno++
Managing Director
Japan Client
Strategist

Yuki Tanaka
Vice
President
Esther Tay
Vice
President

+ Direct line to N. Hogwood (Regional Head)

++J. Umeno direct line to H. Arita (President of BlackRock Japan)

• Source: BlackRock as of September 2022

ETFs and Index Investments (EII) Investments Pillar

Salim Ramji
 Global Head of ETFs and Index Investments

Investments Pillar

Samara Cohen
 Chief Investment Officer of ETF and Index Investments

Index Equity

Jennifer Hsui, CFA, Global CIO and Co-Head of Index Equity

Paul Whitehead, Global Co-Head of Index Equity

Global Research

Nogie Udevbulu
 Global Head of
 EII Research

**Index & Quantitative
 Research**
 + 15 Researchers

Analytics Research
 + 39 Research Officers

Strategy

Scott Dohemann, CFA
 Head of
 U.S. Product Strategy
 + 6 Strategists

Office of the CIO

Tim Parsons, CFA
 Deputy CIO
 + 4 Portfolio Engineers

Jonathan Van Ginneken
 Head of Investment
 Innovation &
 Global Index Plus
 + 5 Portfolio Engineers

Steven White
 Head of Performance,
 Risk & Index Advocacy

Portfolio Engineering

Americas

Amy Whitelaw
 Head of Americas
 Portfolio Engineering

Suzanne Henige, CFA*
 Head of US-listed ETF
 PE
 (US, Developed,
 Emerging)
 + 17 Portfolio Engineers

Matthew Waldron, CFA
 Head of Developed &
 Emerging Markets
 Institutional PE
 + 10 Portfolio Engineers

Peter Sietsema, CFA
 Head of Sub-Advised, US
 Institutional, and
 Canada/LatAm ETF PE
 + 17 Portfolio Engineers

Index Asset Allocation, Commodities, Synthetics

Greg Savage, CFA
 Head of Global IAA,
 Commodities & Synthetics

Peter Tsang
 Head of Americas IAA
 + 5 Portfolio Engineers

Steve Walker
 Head of EMEA IAA
 + 6 Portfolio Engineers

Kyle Peppo
 Head of Commodities &
 Synthetic Indexing
 + 2 Portfolio Engineers

Orlando Montalvo
 Head of FX & Synthetics
 + 3 Portfolio Engineers

Platform

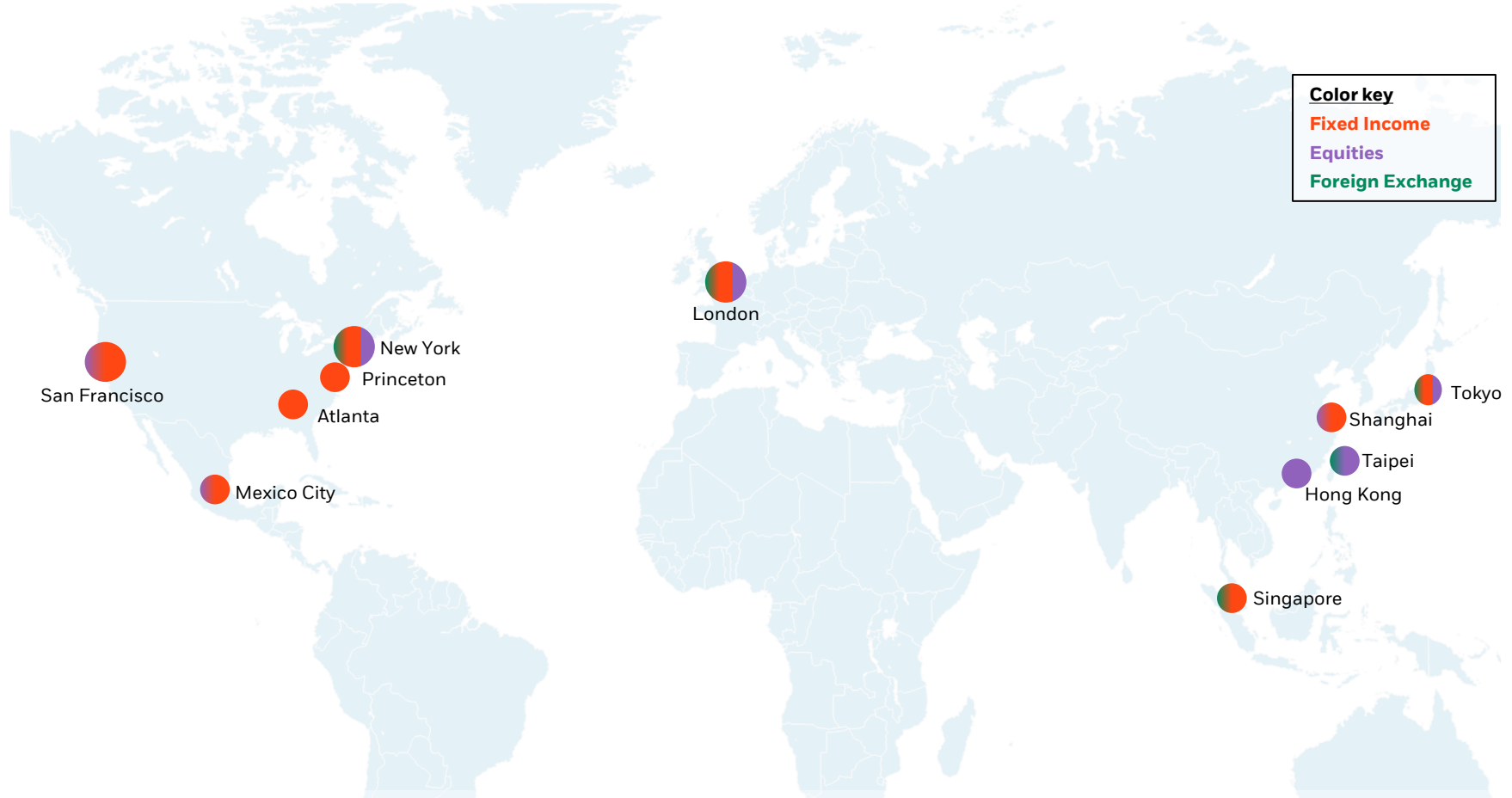
Rajesh Nagella
 Global Head of EII
 Investment Process & Platform
 + 5 Platform Engineers

Transition Management

Jessica Irschick
 Global Head of
 Transition Management
 + 58 Transition Specialists

As of 30 June 2022. *Asterix indicates location in Atlanta (total EII team of sixteen investment professionals stationed in Atlanta).

Global Trading Coverage with Local Expertise



One Order Management System platform: Aladdin Dashboard

Regional hubs for each asset class with local market knowledge and sector expertise

Common technology enables us to pass the book with embedded business continuity plan

24 hour a day, 5.5 days per week coverage

As of December 31, 2021. Source: BlackRock.

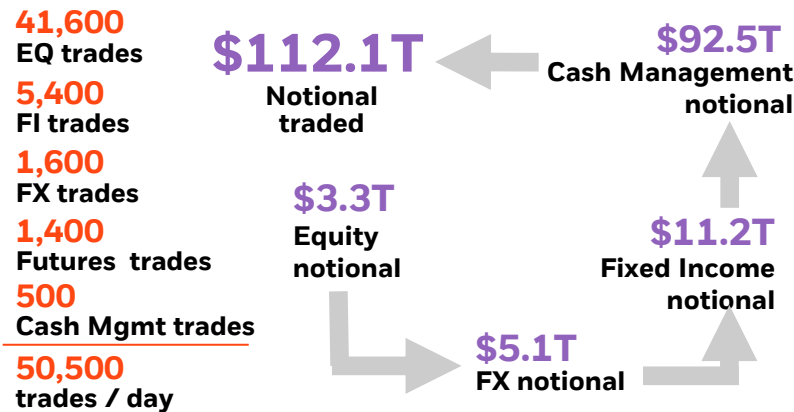
Execution: Seek to reduce costs by leveraging pricing power on a single, global platform

The advantage of scale

- **Tier 1 client to all major counterparties** which we believe uniquely positions us to access liquidity
- **24-hour global agency trading platform** to enable trading at times of maximum liquidity and to leverage local market knowledge and sector expertise
- Trader expertise across all major asset classes and **~\$112.1T of annual volume¹**
- Large volumes and breadth of clients provides **potential opportunities for crossing securities**, reducing transaction costs

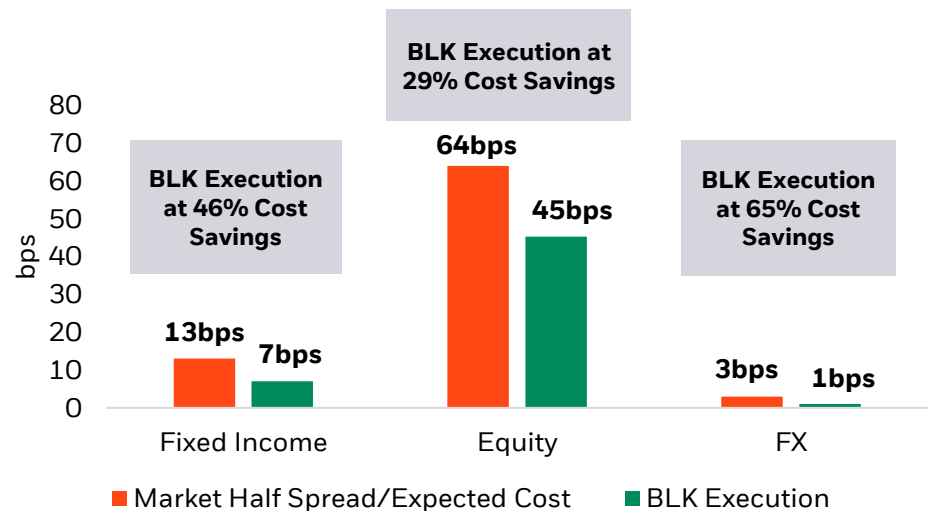
Result: Potential execution benefits can be passed directly on to clients as cost savings

BlackRock's Execution Activity¹



Excludes iShares Create/Redeems activity. Notional traded excludes futures and trade count represents number of block trades.

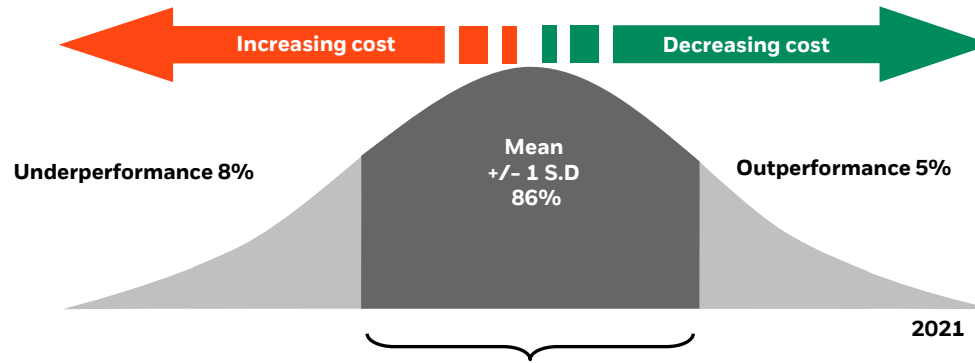
Execution Costs: BlackRock versus the Market²



¹ Average activity for 2021, as of 12/31/2021; Figures show in USD; Source: BlackRock. Inclusive of internal crossing opportunities. Numbers may not add up to total due to rounding. ² BlackRock analysis of all Fixed Income High Yield and Investment Grade Credit, FX, and Equity trades excluding derivatives for 2021 as of 12/31/2021. BlackRock Execution Cost is the average difference between: the actual price achieved on the trade and the benchmark price. For Equity and FX, benchmark price is the market price, based on exchange data at the time when the PM submitted the order. For Fixed Income, benchmark price is the previous day's closing price. The Market Half Spread (or Expected Cost) is an estimate of the average execution cost of a market participant. For Fixed Income, Market Half Spread is estimated quarterly for each sector and maturity bucket based on a consensus opinion of BlackRock traders as well as a set of over 10 broker dealers. For FX, brokers provide Market Half Spread quarterly on a consensus basis for each currency pair and size range. For Equity, BlackRock calculates Market Expected Cost using an average of multiple independent broker models. There is no guarantee that a positive investment outcome will be achieved. Subject to Change.

Our Track Record

- Asset classes: Developed and Emerging Equities, Government Bonds, IG & HY Credit, EMD, Futures, FX
- Clients: Asset Managers, Pension Funds, Insurance Companies, Sovereign Wealth Funds
- Mandates: Manager and benchmark changes, Portfolio constructions and liquidations, Interim management
- Approx. 213 assignments in 2021



86% of results fell within one standard deviation

Implementation Shortfall actual versus estimated	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Shortfall results within one standard deviation	77%	83%	82%	81%	81%	84%	75%	79%	85%	86%
Shortfall results less than -1 standard deviation (outperformance)	18%	11%	11%	11%	8%	10%	9%	12%	5%	5%
Shortfall results more than +1 standard deviation (underperformance)	5%	6%	7%	8%	11%	6%	16%	9%	10%	9%
Shortfall results equal to or better than central estimate	60%	58%	58%	57%	51%	59%	56%	55%	60%	47%

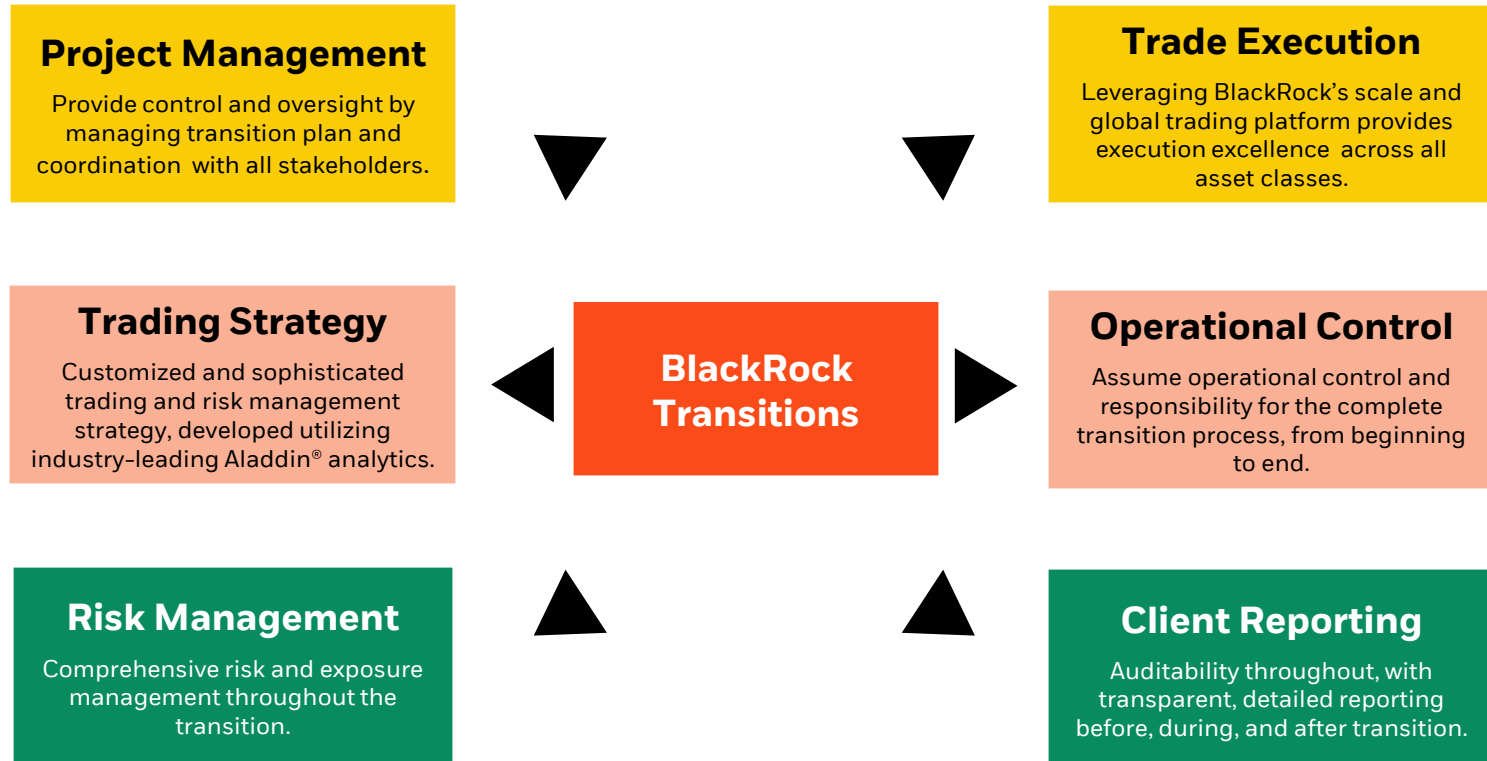
Source: BlackRock. Based on actual results from all transitions completed during 2012– 2021

For illustrative purposes only. This example is not intended to represent that such results will occur in all cases.

Global Track Record

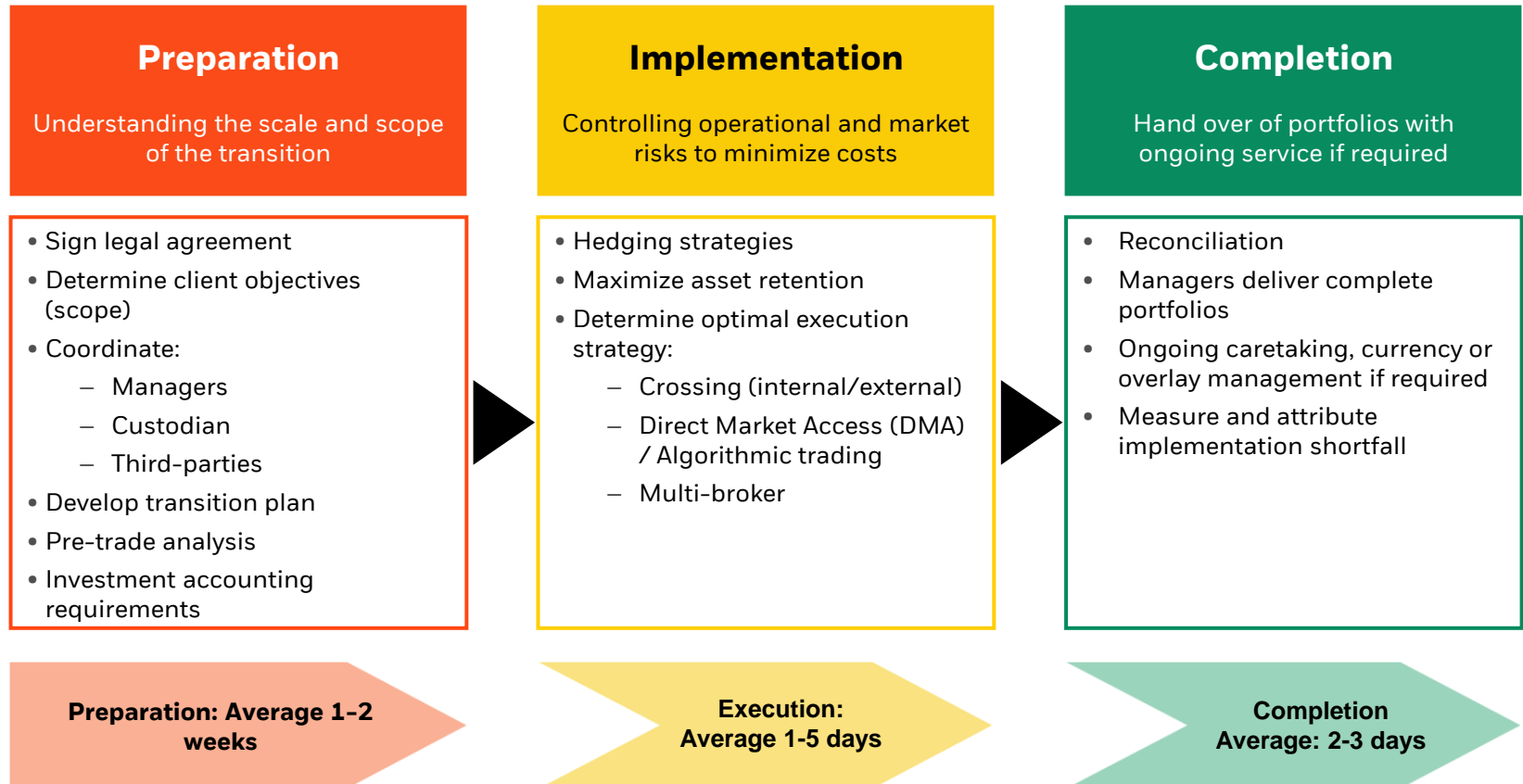
Full-Service Offering

Full-service transition management offering



Transition Management Process

Comprehensive project management throughout the entire process



Risk managed process controlled by dedicated project team

Preparation

Transition timeline and calendar

- BlackRock analyzes client requirements and provides:
 - A detailed project timeline to relevant parties
 - BlackRock will research the anticipated trading window for market holidays, economic news, and other important events

Client Name				
Global Multi-Asset Rebalance				
Monday	Tuesday	Wednesday	Thursday	Friday
9/2/2019	9/3/2019	9/4/2019	9/5/2019	9/6/2019
BlackRock hosts call between Target Manager and Custodian Mellon to discuss the transition and finalizes the target contribution date.				The Client provides required LOD to Legacy Stakeholders (Legacy Manager)
BlackRock provides updated timeline to all stakeholders				
9/9/2019	9/10/2019	9/11/2019	9/12/2019	9/13/2019
The Client provides required LOD to Legacy Stakeholders (Manager and Custodian)			BlackRock redeems from the Legacy Manager Fund with TD Sept. 19 and SD Sept. 24 BlackRock equities for cash markets to maintain appropriate market exposure	Legacy Manager wires approx. \$4M or C\$5.3 to BlackRock to cover futures collateral Legacy Manager provides finalized inkind to Custodian and BlackRock for the asset transfer
9/16/2019	9/17/2019	9/18/2019	9/19/2019	9/20/2019
Legacy Manager finalizes the redemption and provides unit details to all stakeholders BlackRock coordinates with target managers to receive finalized wish lists	Custodian delivers inkind assets and remaining cash to Target Manager Custodian provides reconciled asset list to BlackRock BlackRock takes assets onto Aladdin Investment Platform	BlackRock reconciles assets with Custodian and prepares trading solution Custodian continues providing additional reconciled lists for any pending items	BlackRock executes the required hedges at Benchmark Custodian continues providing additional reconciled lists for any pending items	BlackRock begins the broader transition
9/23/2019	9/24/2019	9/25/2019	9/26/2019	9/27/2019
Transition trading continues	BlackRock completes all required trading		Last day of market settlement for all transition equity trades	
BlackRock provides the final asset list to target managers and Custody Bank for the contribution				
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: left;"> <p>BlackRock</p> <p>BlackRock Contacts Transition Manager 1 Transition Manager 2 Strategist</p> </div> <div style="text-align: left;"> <p>tm.manager.1@blackrock.com tm.manager.2@blackrock.com strategist@blackrock.com</p> </div> <div style="text-align: left;"> <p>1 646 123 4567 1 212 123 4567 1 415 123 4567</p> </div> <div style="text-align: right;"> <p>Legend Cash Activity Terminations / Redemptions Trading Begins</p> </div> </div> <p style="text-align: center; font-size: small;">Confidential</p>				

Project accountability and risk control

For illustrative purposes only

Preparation

Pre-transition report

- BlackRock provides the client with a detailed pre-transition report consisting of:
 - An assessment of expected costs and risk
 - A review of recommended trading strategy
 - Key considerations for the transition
- In developing an implementation strategy, we consider the following:
 - Liquidity
 - Expected tracking error
 - Impact of hedging
 - Cash flow and operational considerations

BlackRock
Transition Management

Thursday, October 3, 2019

Client
Global Multi-Asset Rebalance
Pre Trade Report

Initial Fund Value: USD 122.5m

Transition Overview

Overview
The Client is looking to rebalance an active US equity portfolio into a Russell 1000 Growth committed fund. We have analyzed the costs and risks of the proposed restructuring and present the results of the analysis in the report that follows. Our analysis is based on the legacy and target assets provided by Client, and a representative slice of the target Russell 1000 Growth index.

BlackRock Objectives

- 1) Implement a customized trading strategy to minimize cost and risk during the transition
- 2) Source liquidity from a wide variety of counterparties via a competitive bidding process to minimize costs
- 3) Provide full service project management throughout the transition period

A strategy discussion as well as further details of the costs and risk associated with the transition are outlined in the following pages.

Transition Structure

Legacy

Manager 1
Global Equity 201M

Asset Class Summary

Asset Class	Value
Equity	85,075,706
Fixed Income	23,420,507
Cash	6,939,980
Total Value	115,299,293

Transition by the Numbers

8.30%

32%

12%

\$203m

Thursday, October 3, 2019

Client
Global Multi-Asset Rebalance
Pre Trade Report

Initial Fund Value: USD 122.5m

Estimated Transition Cost

Equity Trading Costs	Sell	Buy	Total Cost	% of Legacy Portfolio Value	% of Equity Traded Value
Commission	-51,133	-15,707	-66,840	(0.05)	(0.04)
Tax	-1,161	-7,009	-8,164	(0.01)	(0.00)
Spread	-10,842	-10,816	-21,658	(0.02)	(0.01)
Market Impact	-187,764	-202,585	-390,349	(0.33)	(0.10)
Dev FX Costs	-46	-448	-494	(0.00)	(0.00)
Total Costs	-230,926	-34,073	-264,999	(0.23)	(0.16)

Fixed Income Trading Costs	Sell	Buy	Total Cost	% of Legacy Portfolio Value	% of FI Traded Value
Commission	-1,128	-6,807	-7,935	(0.01)	(0.04)
Spread & Impact	-9,565	-89,221	-98,786	(0.08)	(0.50)
Total Costs	-10,693	-96,028	-106,721	(0.09)	(0.54)

Implementation Shortfall Estimate

	Total Cost	% of Legacy Portfolio Value	% of Traded Value
Opportunity Risk (-/-)	582,142	0.46	0.31
Implementation Shortfall - lower cost estimate (1 a)	110,422	0.14	0.09
Implementation Shortfall - higher cost estimate (1 a)	-95,361	(0.78)	(0.53)
Implementation Shortfall - lower cost estimate (2 a)	732,563	0.60	0.41
Implementation Shortfall - higher cost estimate (2 a)	-1,516,003	(1.24)	(0.84)

Implementation Shortfall (bps)

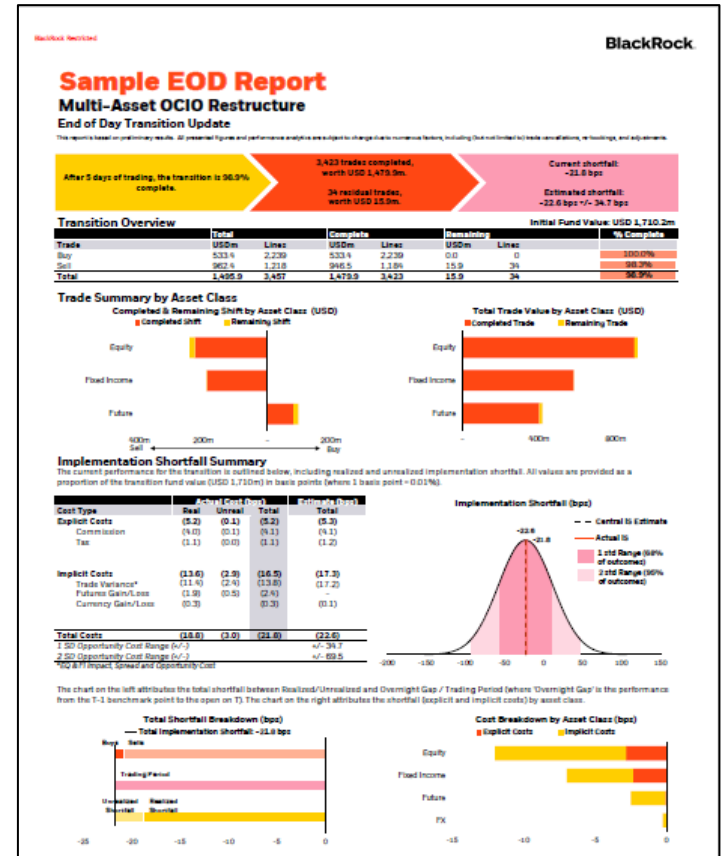
The above pre-trade cost estimate assumes that market returns are normally distributed. However, returns within equity markets are frequently observed to exhibit characteristics which do not fit a normal distribution and therefore outliers in IS may occur more often than expected by the theoretical normal distribution.

For illustrative purposes only

Implementation

Daily reporting

- Throughout the transition, BlackRock provides the client with a daily brief, covering:
 - Key project updates
 - Operational updates on settlement and relevant account setup
 - Updates on project coordination with the custodian and managers
 - A clear summary of the outstanding action points
- The daily brief provides consistent clarity and a project audit trail




Transparency at all stages of the transition


For illustrative purposes only

Post-Trade Process

Post-trade report

- BlackRock provides a detailed post-transition report with:
 - An executive summary that is both quantitative and qualitative
 - Consistency with pre-transition report to ensure accountability and transparency
 - Post-trade review meetings are conducted at the convenience of the client





Sample Post-Trade Report

Multi-Asset OCIO Restructure

Post Trade Report

Required Sell: USD 960.7m
Required Buy: USD 530.0m
Overlap: USD 395.4m

13 Trading Days
3,455 Trades Executed
With 96 Counterparties

Implementation Shortfall: -19.1 bps
Pre Trade Estimate: -22.6 bps +/- 34.7 bps

Transition Overview
 Initial Fund Value: USD 1,726.0m

Overview
 BlackRock Transition seeking strategies...


Rebalance Period
 Before trading begins target managers provide...
 BlackRock began by securities were set up and opens market time...

Performance
 The potential overall standard deviation (central case cost est.)

Transition Timeline

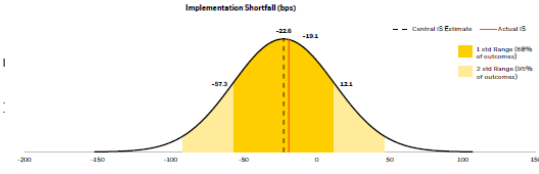
Day X
Day X
Day X
Day X
Day X
Day X
Day X

Transition Performance
 The chart on the left from the T-1 benchmark



Implementation Shortfall Overview
 Costs are broken down into their component parts in the tables and graphs below. Commissions and taxes are a known cost, whereas spread and market impact are estimates and opportunity cost acts as the balancing item. Opportunity cost is broken down further into (as relevant) gain or loss on security trades caused by market movements between the closing prices on the benchmark date and the time of execution.

Implementation Shortfall (bps)

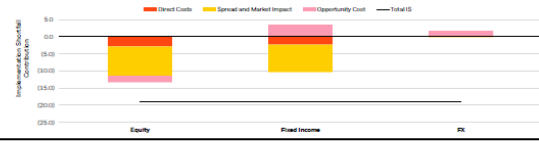


--- Central (S) Estimate — Actual (S)

■ 1 std Range (68% of outcomes)
 ■ 2 std Range (95% of outcomes)

	Pre Trade Estimate		Transition Result		Difference	
	Total (USD)	(bps)	Sell (USD)	Buy (USD)	Total (USD)	Total (USD) bps
Direct Costs						
Commissions	(69,880)	(4.1)	(513,759)	(190,591)	(704,350)	(4.1)
Tax	(206,700)	(1.2)	(104,124)	(90,698)	(194,723)	(1.1)
Spread and Market Impact						
Equity	(1,555,709)	(9.1)	(1,352,428)	(137,077)	(1,489,504)	(8.6)
Fixed Income	(1,289,786)	(8.1)	(230,675)	(1,165,727)	(1,296,612)	(8.1)
CX	(17,972)	(0.1)	(10,676)	(7,039)	(17,696)	(0.1)
Total Trading Costs	(4,883,548)	(27.6)	(2,211,882)	(1,591,022)	(4,802,904)	(27.6)
Opportunity Cost	+/- 5,941,050	34.7	(1,773,652)	2,285,221	511,569	3.0
Implementation Shortfall	From 2207.50Z To (5164.559)	17.1	(3,985,515)	694,190	(3,291,325)	(19.1)

Implementation Shortfall Contribution by Asset Class



Reconciliation of expectations and actual results

For illustrative purposes only

Trading Research Overview

Trading Analysis & Research (TAR)

- BlackRock's Trading Research team is a global team of over 15 people*
- The team maintains the TAR database, which provides the basis for our:
 - Modelling and Research (t-cost forecasts)
 - Pre-Trade applications (MPO, Principal bid)
 - Post-Trade analysis
- Additionally, TAR makes it possible to dynamically extract the performance of each counterparty by:
 - Asset class
 - Region
 - Market sector
 - Name
- TAR brings together the pre-trade perspective, execution and investment performance, and post-trade analysis

Research-driven approach to trading

* As of June 30, 2022

BlackRock Transition Management Systems

Aladdin Transition Manager (ATM)

- Designed by Transition Managers for Transition Managers
- Takes care of the heavy lifting
- Fully integrated Aladdin application:
 - Truly global system – all transitions can be viewed across the world
 - Completely seamless with portfolio management and order management systems
- Multiple account management functionality including aggregation and crossing across client accounts

Aladdin Transition Manager

File Action Help Status: Transition Loaded

Transition Target Name: pre-trade Warnings/Failures: 3 Workspace

Transition Settings Transition Target Security View Proposed Orders Asset Compare +

Transition Name: pre-trade Benchmark Port Group: TRM_EM_BMK Last Saved By: Jonathan Deans Valid from Date: 04-JUL-2016 Valid to Date:

Legacy Portfolios			
Portfolio Ticker	Portfolio Name	Risk Benchmarks	Allocation Order
B	ATRNTTL	B ATRNTB1, NULLBNCHEU	1

Target Managers			
Target Name	Portfolio Ticker	Allocation Order	Target Name ID
New Target Manager 1	B	ATRNTTL	1 Target Manag...

Minimize spreadsheet work and process risk

Screenshot for illustrative purposes only

BlackRock Transition Management Systems

Portfolio Construction (PfC)

- The portfolio management tool used by all of BlackRock
- Multi-asset modelling – equities, fixed income, futures and FX
- Fully integrated Aladdin application:
 - Truly global system – all transitions can be viewed across the world
 - Fully integrated with order management systems
 - Fully integrated with cash management systems

PORTFOLIO CONSTRUCTION Aladdin

File Options View Action History Format Help Workspace: TRIM Default View July 2015

08-OCT-2020 - 12:46:09PM As Ordered and Traded w/Proposed - 1 pf 251 pos, 16 trd, 6 ord, no cf - 1 distinct bench 72 pos, no trd, no ord, no cf

Port Group: <Port Filter> Bench: Primary Date: T+10 Ccy: USD Filter: Issuer (family) LT

Main Window **Sector View** Currency by KR D Orders Detailed Holdings View

Sector View (All)

	Pf	Qty	Bench	Qty	Active	Qty	Active	New Qty	Pf	New Qty	Pf	Base MV	Bench	MV	Active	MV	Active	New MV	Pf	New MV	Pf	Exp
✓ Cash & FX		11,488,137	5,845,210	5,642,927	5,642,927	11,488,137	USD	11,341,589	USD	5,845,210	USD	5,496,380	USD	5,496,380	USD	11,341,589	USD	11,341,589	USD			
> Cash & Cash Equivalents		-34,141,494	5,845,210	-39,986,704	-39,986,704	-34,141,494	USD	11,246,111	USD	5,845,210	USD	5,400,902	USD	5,400,902	USD	11,246,111	USD	11,246,111	USD			
> FX Forwards		45,629,631		45,629,631	45,629,631	45,629,631	USD	95,478	USD		USD	95,478	USD	95,478	USD	95,478	USD	95,478	USD			
> Equity		27,880,430	27,880,430	0	0	27,880,430	USD	196,578,929	USD	196,578,929	USD	0	USD	0	USD	196,578,929	USD	196,578,929	USD			
🏠 Totals		39,368,567	33,725,640	5,642,927	5,642,927	39,368,567	USD	207,920,519	USD	202,424,139	USD	5,496,380	USD	5,496,380	USD	207,920,519	USD	207,920,519	USD			
Grand Totals		39,368,567	33,725,640	5,642,927	5,642,927	39,368,567	USD	207,920,519	USD	202,424,139	USD	5,496,380	USD	5,496,380	USD	207,920,519	USD	207,920,519	USD			

Market leading portfolio management systems

Screenshot for illustrative purposes only

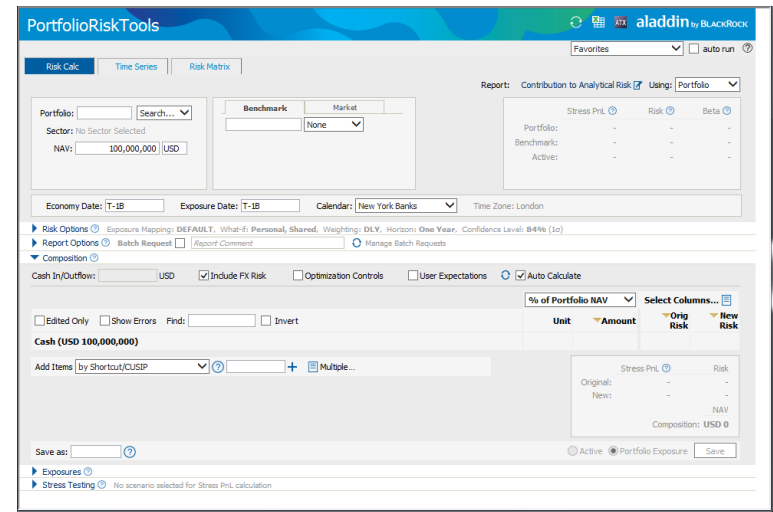
Risk Management & Analytics

Access to Aladdin® risk and investment platform

- Highly scalable investment management platform combining:
 - Portfolio analysis
 - Risk management tools
- BlackRock provides Aladdin technology on over 1000 assignments around the world*

BlackRock Transition Management utilizes Portfolio Risk Tools (PRT) and Green Package

- Tracking error calculation
- Dynamic hedging and risk optimization
- Risk decomposition
- Multi-asset class capability
- Futures basket optimization



Green Package							
Contribution to Active Risk & Pnl Attribution What-if Portfolio .BPL							
Portfolio	Exposure Date	Exposure Hierarchy	Purpose	NAV	CCY	DxS Block	
.BPL vs. .BPT	8/15/2016	cmrsmr.BP_VIP_*/WRLDA_DEFAULT	BP_VIP*	1,580,991,210	GBP	ALL_DXS	
Risk Group	Factor Level	Factor Val	Credit Beta	Exposure	Stand-alone Risk	Risk Contribution	
GBP Int Rates		matrix...		523	794	-95	
GBP 3M	0.18	34	0.02	1	1	0	
GBP 1Y	0.13	46	-0.37	17	-6		
GBP 2Y	0.11	56	0.61	34	17		
GBP 3Y	0.11	75	-0.08	6	-3		
GBP 5Y	0.24	87	1.14	99	66		
GBP 7Y	0.42	89	0.86	76	53		
GBP 10Y	0.77	93	1.38	129	93		
GBP 15Y	1.12	99	1.47	145	112		
GBP 20Y	1.39	104	1.16	121	97		
GBP 25Y	1.50	107	0.95	102	82		
GBP 30Y	1.40	101	0.43	44	34		
GBP 40Y	1.26	97	0.32	31	24		
GBP 50Y	1.18	99	0.12	12	9		
USD Int Rates		matrix...		-5.35	349	-61	
Tsy 3M	0.32	23	-0.01	0	0		
Tsy 1Y	0.63	32	-0.07	2	0		
Tsy 2Y	0.75	50	-0.13	7	0		
Tsy 3Y	0.90	59	-0.35	21	-1		
Tsy 5Y	1.20	68	-0.73	50	-4		
Tsy 7Y	1.43	70	-0.92	64	-8		
Tsy 10Y	1.64	70	-0.86	60	-9		
Tsy 15Y	1.88	71	-0.41	29	-6		
Tsy 20Y	2.10	70	-0.56	39	-9		
Tsy 25Y	2.31	68	-0.72	49	-12		
Tsy 30Y	2.49	67	-0.61	41	-11		
DEM Int Rates		matrix...		-1.42	64	-23	

Market-leading risk management analytics drive implementation strategy

*As of December 31, 2021. Screenshot for illustrative purposes only

BlackRock Transition Management Systems

Aladdin Dashboard

- Order management tool used by all of BlackRock
- Complete visibility of all orders through trade lifetime from initial order to settlement
- FIX connectivity provides real time data
- Fully integrated Aladdin application:
 - Integrated with Portfolio Construction
 - Multi-asset class orders – equity, fixed income, cash, foreign exchange, and futures
 - Integrated with cash management systems and cash fund systems
 - Seamless connectivity to execution management systems through Flextrader (Equity & FX), Tradeweb (FI), MarketAxess (FI) and FX Connect (FX).
- Includes future corporate actions

The screenshot displays the Aladdin Dashboard interface with several key sections:

- Orders Awaiting Trade Pickup (Team (0/0))**: A table with columns for PM/Team / Basket, Portfolio, PM, Trader, Transx Type, Sec Ccy, Assigned To, Asset ID, ISIN, SEDOL, Description, Ticker, and Quant.
- Orders Being Traded (4/53)**: A table with columns for Filters, % Filled, PM, Trader, Transx Type, Asset ID, ISIN, SEDOL, Sec Ccy, and Description. It shows data for various portfolios and assets.
- Orders Being Traded by Currency (0/0)**: A table with columns for Portfolio / Basket, Basket, Sec Ccy, % Filled (Value), Remaining DVO1 (ENT), and Remaining Mark-Value (ENT) PM.
- Trades (13/28)**: A table with columns for Portfolio, Status, Trader, Transx, Asset ID, ISIN, SEDOL, Sec Ccy, and Security Description. It lists confirmed trades for various assets.

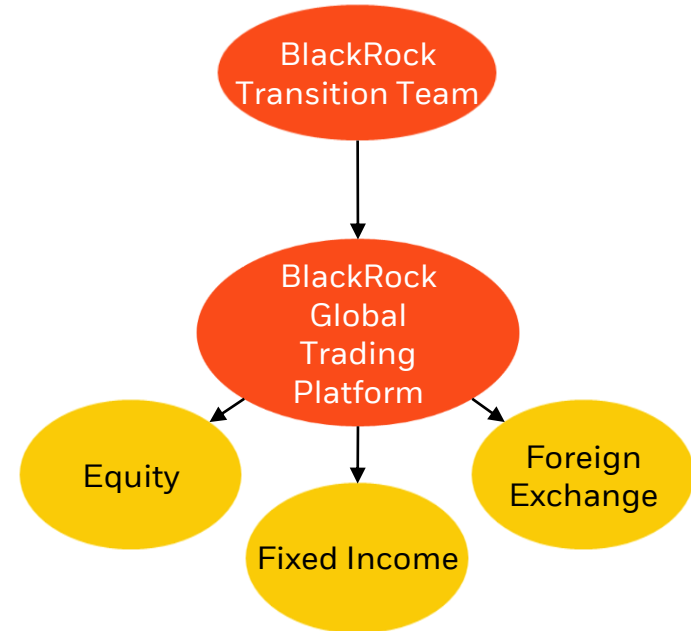
Real time visibility of global executions

Screenshot for illustrative purposes only

Transition Execution Quality

Global Trading Platform

- BlackRock operates an agency open-architecture trading platform in order to source best execution in:
 - Equity
 - Fixed Income
 - FX
 - Futures
- Our transition management team leverages BlackRock's global trading platform and the expertise of our traders across different markets
- Our clients benefit from the pricing that BlackRock's size and scale brings
- BlackRock executes transition trading on an agency basis

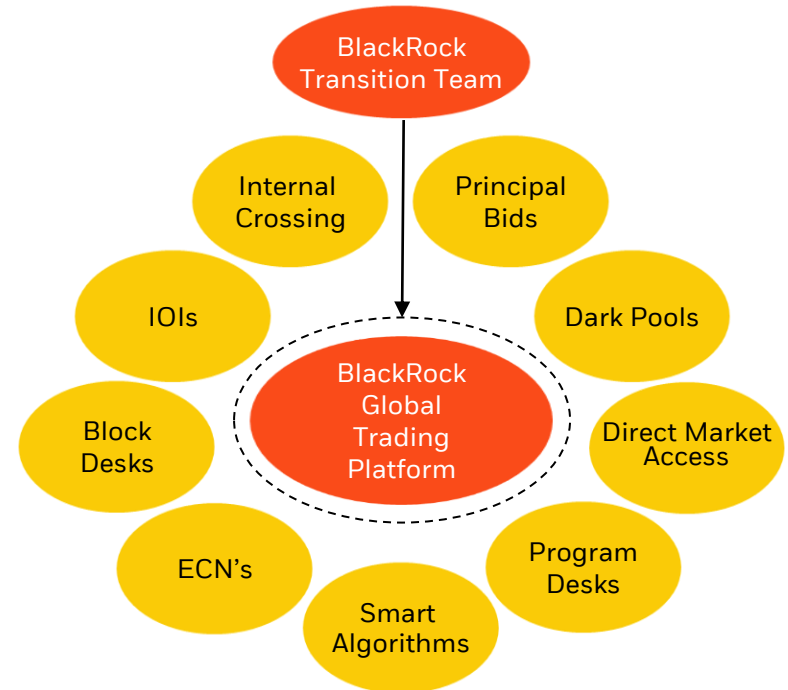


Market access via multiple venues to achieve best execution

Transition Execution Quality

Equity Trading

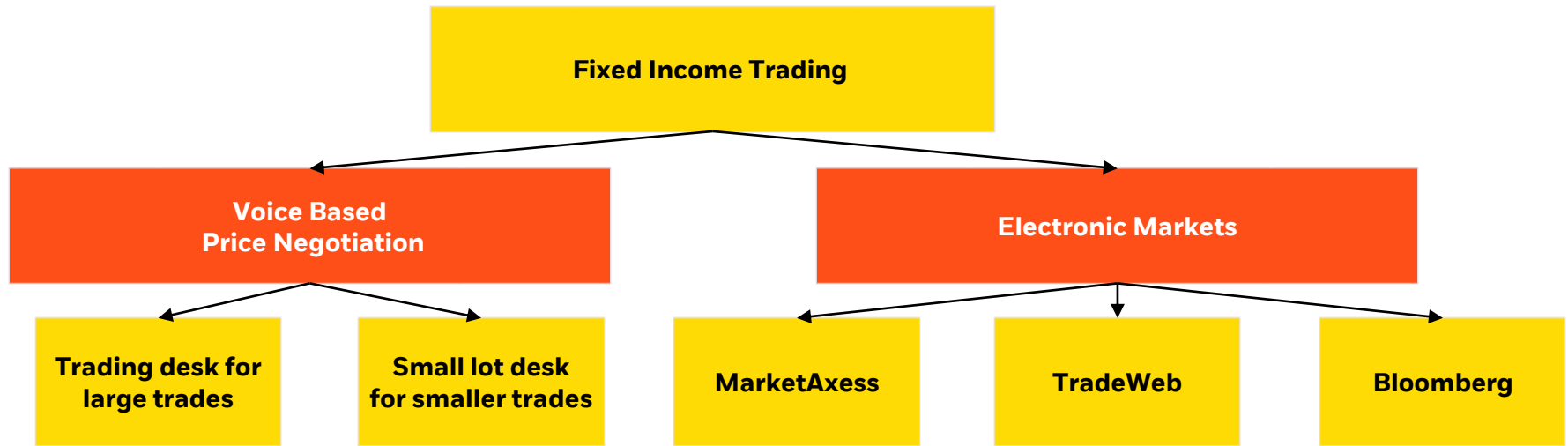
- BlackRock uses a pure agency open-architecture platform with direct market access to all key markets
- The range of available brokers and algorithms allows efficient routing of trades to the best counterparty for each region, market, equity type (large cap / small cap), etc.
- Our Trading Research Group provides a scientific structure to determine the best approach for each scenario
- Over 200,000 Indications of Interest (IOIs) are received globally on a daily basis, helping to trade less liquid positions cost effectively while maintaining client confidentiality. BlackRock does not provide outgoing Indications of Interest



BlackRock's open-architecture platform provides vast access to liquidity

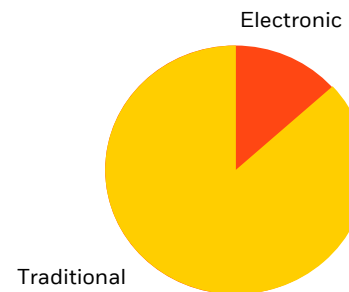
Source: BlackRock as of December 31, 2021

Fixed Income Trading

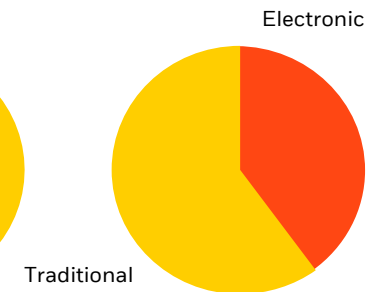


- A large part of the fixed income market is traded over the counter and is comprised of fairly complex instruments, so the market is dominated by over-the-phone transactions
- We also utilize the appropriate electronic markets and platforms for trading in specific asset classes

Credit Notional



Credit Trade Count/Line



BlackRock Recent Credit Volumes by Venue

For illustrative purposes only

Transition Execution Quality

Fixed Income Trading

- Access to more than 100 brokers (wholesale & specialists) and electronic order platforms (MarketAxess, Tradeweb, etc.)
- Trillions of USD fixed income traded annually
- Efficient process for receiving and analyzing Indications of Interest (IOI)

Indication (41880/35580)									
[Asset ID]	Status	Side	Actual Qu... (Abs)	Ticker	Price Type	Spread	Price	Modified Time	Cpty
064255AS1			4,187,000		Spread	35.4066666...	38.61		(2/3)
064255AS1	Traded	Sell	580,000		Spread	42.3	42.3	02-10 12:56:56	MKTX
064255AS1	Active	Offer	107,000		Spread				
064255AS1	Traded	Buy	3,500,000		Spread				
62718QAA3			26,613,000		Spread	66.			
62718QAA3	Active	Offer	5,000,000		Spread				
62718QAA3	Traded	Buy	200,000		Spread				
62718QAA3	Active	Offer	175,000		Spread				
62718QAA3	Traded	Sell	2,000		Spread				
62718QAA3	Active	Offer	20,711,000		Spread				
62718QAA3	Traded	Buy	275,000		Spread				
62718QAA3	Traded	Sell	250,000		Spread				
63254AAB4			3,252,000		Spread	17.			
63254AAB4	Active	Offer	1,000		Spread				
63254AAB4	Active	Bid	1,000		Spread				
63254AAB4	Traded	Buy	3,250,000		Spread				
BRSE5PVX3	Active	Offer	15,090,000		Spread				
BRSE5PVX3	Active	Offer	5,090,000		Price				
BRSE5PVX3	Active	Offer	10,000,000		Price				

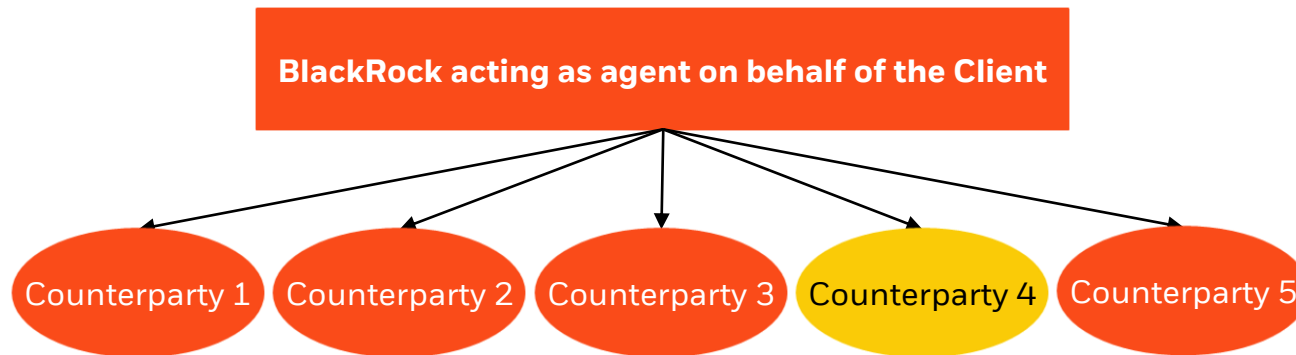
Transx	Unbooked Amt	Ticker	Mkt Opty	Opportunity	Asset ID
BUY	800,000		GS		1110
BUY	500,000		SMRD	Merge	1729
BUY	50,000				4592
SELL	-2,000,000				1430
SELL	-525,000		SMRD		2524
BUY	1,187,000				7432
BUY	500,000		SMRD	Cross	2681
BUY	1,885,000				2688
BUY	2,000,000				3696
SELL	-300,000		SMRD		4410
BUY	2,500,000				4498
SELL	-130,000			Cross	4567
BUY	3,400,000				4711

Clients leverage BlackRock's purchasing power

Source: BlackRock as of February 28, 2022
 Screenshot for illustrative purposes only

Foreign Exchange (FX) Process

- All FX transactions are executed as agent
- Range of execution techniques available; selection is driven by tailored trading strategy
- Access to electronic trading platforms and execution algorithms
- Competitive bidding process
- No selection bias



Transparent agency process ensures low costs and no hidden revenues on FX

BlackRock's Revenue Transparency

Transition Transparency Tool

	Your Transition Manager	BlackRock Transition Manager
Do you earn revenue by internal crossing?	?	No
Do you earn revenue from sales trading activity?	?	No
Do you earn revenue by acting in a principal capacity?	?	No
Do you capture a spread on fixed income within your affiliated broker dealer?	?	No
Do you capture a spread on fixed income commission based on basis points of yield rather than market value?	?	No
Do you earn revenue from mark up/down of fixed income trades?	?	No
Do you earn revenue by trading futures?	?	No
Do you earn revenue from an affiliate who acts in a principal capacity?	?	No
Do you earn revenue from order-flow payment or participate in soft-dollar arrangements?	?	No
TOTAL HIDDEN REVENUE:	?	\$0

Transparency and Revenue Disclosure

- BlackRock believes that revenue transparency is crucial to a successful transition management business model and is an important factor in selecting a Transition Manager. The only compensation, direct or indirect, we receive is captured either within the commissions paid in connection with transition assignments or through a flat fee agreed upon in advance of the transition. BlackRock will act as a fiduciary on behalf of its transition clients and has a transparent, agency-based commission compensation model. BlackRock earns transition commissions associated with trades processed through its agency affiliate, BlackRock Execution Services and we are willing to fully disclose these commissions in writing.
- Neither BlackRock nor its affiliates receive any revenue other than what is explicitly quoted in our pre and post trade reporting as a fee or commission received in connection with executing transition trades requested by our clients.
- BlackRock has developed a transition transparency report card to help plan sponsors uncover hidden revenue within the transition process. As shown below, we are committed to full transparency and earn no hidden revenue on the transitions we execute.

Our Competitive Advantages

Investment manager operating model

- Full fiduciary oversight – ability to act as sub-advisor
- All transactions executed as agent with full transparency on price discovery and fees
- No sell side conflicts – all orders treated fairly
- Competitive fees while offering access to multiple counterparties and liquidity venues

Significant experience managing complex multi-asset class transitions

- Managed approximately \$469B* in transitions annually over the past 5 years
- Diverse client base: Pension (DB and DC), Endowment, Sovereigns and 40 Act funds
- BlackRock Transition Management has expertise with all global publicly traded asset classes
- Active risk management using futures, ETFs, and Treasuries

Extensive access to liquidity

- Large global trading platform supporting \$10T AUM**
- Direct access to over 150 person trading team
- Significant internal liquidity via crossing and indications of interest (IOI)
- Unique advantages of being a large client of the street vs. a competitor

*Refers to round trip value of assets transitioned 2017 - 2021 **As of December 31, 2021

Our Competitive Advantages (continued)

Robust investment technology and risk analytics

- Manage all assignments on Aladdin®, our market leading enterprise investment platform
- Sophisticated multi-asset class risk models and analytics (*Portfolio Risk Tools*)
- Ability to run a wide variety of scenario analyses to support decision making process
- Dedicated Trade Analytics Research (TAR) team to measure trade costs and select counterparties and venues
- DOL regulated internal crossing system

Comprehensive project management support

- Highly experienced transition management team
- 60+ person dedicated global team with 22 staff in U.S.*
- Disciplined and formal process for managing all aspects of a transition
- Open and frequent communication during the transition process
- Full support of middle and back office to minimize operational risk

*As of September 2022

Important Notes

BlackRock Institutional Trust Company, N.A. (“BTC”) offers transition services to both its investment management clients and third party clients. Such transition services usually include brokerage services through its wholly owned subsidiary, BlackRock Execution Services (“BES”), member FINRA. BES receives commissions from the Client for trades that BES executes in the course of transitions services. BES itself purchases clearing or other brokerage services from third parties and/or affiliates with some or all of the commission that BES receives.

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November 3, 2022

Citi Global Transition Management

Presentation prepared for:

Los Angeles City Employees' Retirement System

William Cobbett, CFA, FRM

Managing Director

Head of Transition Management

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TEAM: CITITM@CITI.COM

Key professionals working on the LACERS account



Will Cobbett, Managing Director, Head of Americas Transition Management

Will joined Citigroup Global Transition Management in July 2006. Prior to joining Citigroup, Will was a Partner at Montreal based investment boutique Pavilion Global Markets Ltd. (formerly Brockhouse Cooper) in their Transition Management department. Prior to working in transition management Will worked on the North American and the European equity program trading teams at Brockhouse Cooper. Will holds a post-graduate Diploma in Business Studies from the London School of Economics and a B.A. from Huron College at the University of Western Ontario. He is a CFA Institute member and earned the Chartered Financial Analyst designation in 2004. He is also a member of General Association of Risk Professionals (GARP) and earned Financial Risk Manager designation in November 2005. FINRA qualification exams Series 63, SIE, Series 3, Series 7, Series 37, and Series 24.



Jerome Hogan, Vice President, Project Manager

Jerome joined Citi in May 2019 and is a Project Manager on the US transition team, responsible for trade analysis, strategy, and business development. Prior to joining Citi Jerome worked for Macquarie Capital in New York and Russell Investments for 14 years in Sydney in their respective Transition Management departments. He graduated from University College Dublin with a Masters in Economics and from Macquarie University Sydney with a Masters in Applied Finance. Jerome has passed the Series 7, Series 63 and SIE exams.



Patrick Roth, Assistant Vice President, Project Manager

Patrick came to the TM team through the Citi Analyst Program and was previously on the Equity Sales Trading desk focusing on Asia Pacific long only clients. Patrick began his career at Citi in 2012 in middle office where he oversaw daily functions supporting clients and sales traders on the Cash, Convertible Bond, ETF, Electronic, Portfolio, Delta One, and TM desks. Patrick is a graduate of Niagara University with a BS and MBA in Finance. Since working at Citi, Patrick has passed the Series 3, 7, 57, 63 and SIE.



Perry – King Tita, Analyst

Perry came to the TM team through the Citi Markets Analyst rotational program. Prior to joining the team, Perry worked on the Global Transactional FX team, and interned across FX and Rates. Perry graduated from the University of Pennsylvania with the BA in Economics. Perry has passed the series 7, Series 63 and SIE exams.

TM overview as at Sep 30th

Total Transitions

Year	Number of Transitions	Total Market Value (round-trip) (\$ millions)
YTD - Sept 30th 2022	953	529,095

Total U.S. Equities Transitions

Year	Number of Transitions	Total Market Value (round-trip) (\$ millions)
YTD - Sept 30th 2022	313	240,512

Total Global Developed Markets Equities Transitions

Year	Number of Transitions	Total Market Value (round-trip) (\$ millions)
YTD - Sept 30th 2022	305	196,903

Total Emerging/Frontier Markets Equities Transitions

Year	Number of Transitions	Total Market Value (round-trip) (\$ millions)
YTD - Sept 30th 2022	203	8,920

Total Fixed Income (including U.S. and Global) Transitions

Year	Number of Transitions	Total Market Value (round-trip) (\$ millions)
YTD - Sept 30th 2022	134	82,760

Organizational Vision and Business Approach

- Citigroup's Vision and Value Proposition is to serve as a trusted partner to our clients by responsibly providing financial services that enable growth and economic progress. Our core activities are safeguarding assets, lending money, making payments, and accessing the capital markets on behalf of our clients. We have 200 years of experience helping our clients meet the world's toughest challenges and embrace its greatest opportunities. We are Citi, the global bank – an institution connecting millions of people across hundreds of countries and cities.
- We protect people's savings and help them make the purchases – from everyday transactions to buying a home – that improve the quality of their lives. We advise people on how to invest for future needs, such as their children's education and their own retirement, and help them buy securities such as stocks and bonds.
- We work with companies to optimize their daily operations, whether they need working capital, to make payroll, or export their goods overseas. By lending to companies large and small, we help them grow, creating jobs and real economic value at home and in communities around the world.
- We provide financing and support to governments at all levels, so they can build sustainable infrastructure, such as housing, transportation, schools, and other vital public works.
- These capabilities create an obligation to act responsibly, do everything possible to create the best outcomes, and prudently manage risk. If we fall short, we will take decisive action and learn from our experience.
- We strive to earn and maintain the public's trust by constantly adhering to the highest ethical standards. We ask our colleagues to ensure that their decisions pass three tests: they are in our clients' interests, create economic value, and are always systemically responsible. When we do these things well, we make a positive financial and social impact in the communities we serve and show what a global bank can do.

Organizational Structure

Five Interconnected Core Businesses



Services

Treasury & Trade Solutions (#1)
 Securities Services (#4)

- Drives network value
- \$300+ billion wallet; sticky relationships
- Invest for continued leadership; grow with new client segments

Markets

Markets (#4)
 Fixed Income (#2)
 Equities (#5)

- Maintain leadership in FICC; continue to grow Equities
- Emphasize profitability
- Maximize linkages across ICG

Banking

Investment Banking (#5)
 Corporate Banking
 Commercial Banking

- High-returning, capital-light Investment Banking business; elite Corporate Bank
- Extend growth momentum with focus on new economy companies
- Grow the Commercial Bank

Global Wealth Management

Citi Private Bank (#5)
 Wealth Management (#3 in Asia)

- Strong foundation; differentiated international business
- Leverage existing leadership position in the Private Bank and Asia Wealth
- Scale to focus on full wealth spectrum

U.S. Personal Banking

Branded Cards (#2 in U.S.)
 Retail Services
 Retail Banking

- Refocused strategy
- Serves 72 million customers
- Affluent retail clients that feed Wealth business

For a reconciliation of rankings see slides 22-23 of Jane Fraser's 2022 Investor Day presentation:
<https://www.citigroup.com/citi/investor/investor-day/2022/data/ID22-CEO-Presentation.pdf>

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 2081365 03/22

Citi's Transition Management business sits with **Markets**

How We Do Business – Our Transition Management Philosophy

Our overall goal in any transition is to truly partner with our clients – to understand *their* goals and make those goals a reality

No two transitions are alike, just as no two clients are alike

- Citi believes close communication, and a two-way dialogue is the key to a successful event.
- We never take on too many projects at once, so that we can ensure availability and focus.
- Rather than becoming an assembly line, we prefer to work with larger, more sophisticated clients on more difficult events, offering tailored plans and solutions.
- We hear time and again that Citi's service and level of communication are second-to-none.



How We Do Business – Our Process

Transitions are complex events – all pieces of the puzzle must fit together in order to achieve a successful result

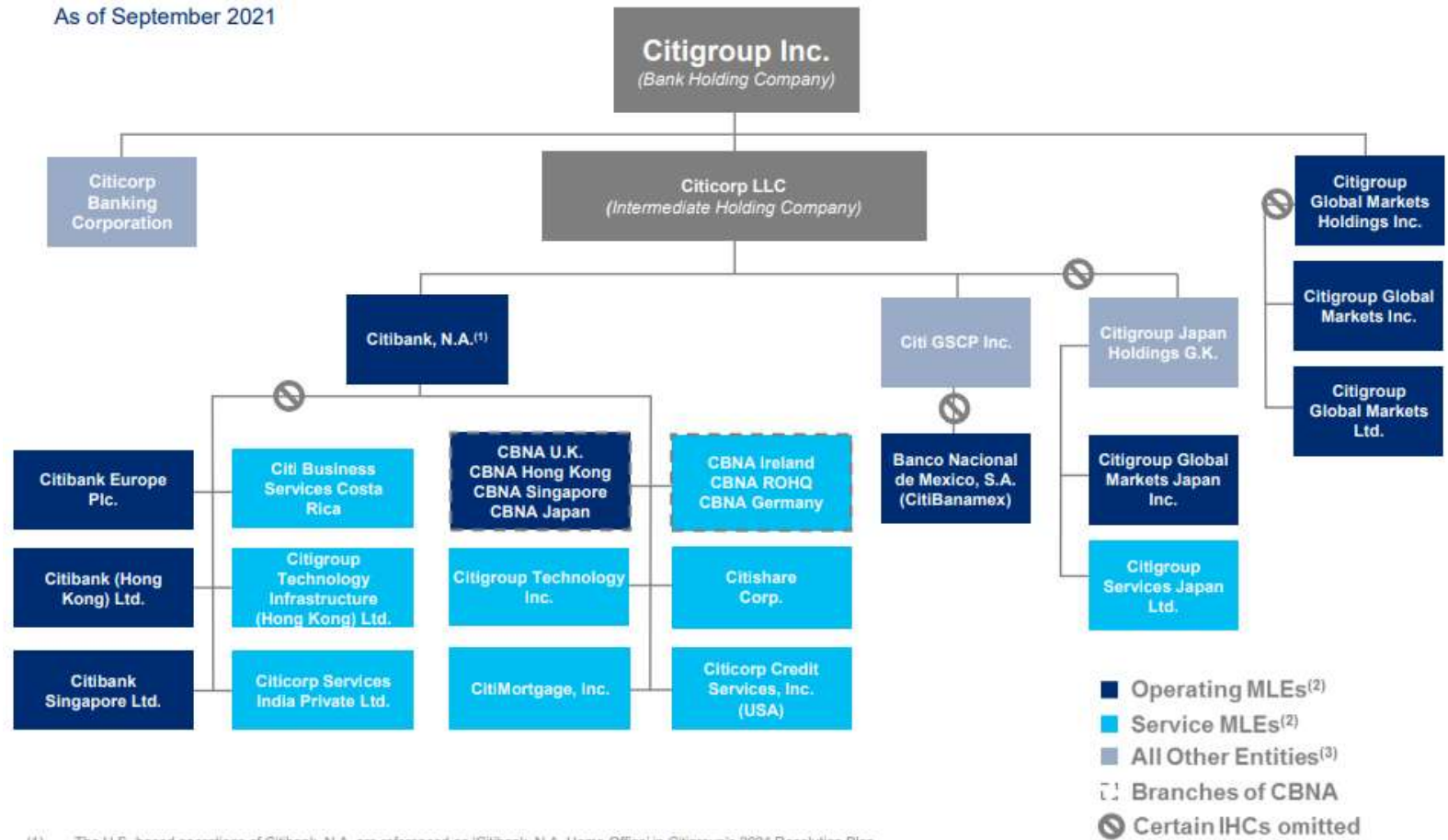
Our process goes hand-in-hand with our philosophy

- Gather information in order to understand your goals
- Develop a project plan which covers all aspects of operations and clearly identifies each party's responsibilities
- Create a strategy for execution which at all times reduces risk and minimizes cost
- Implement that strategy using all the firm's cutting-edge tools
- Communicate throughout the process with the client to guarantee understanding and avoid surprises
- Report with complete transparency on a pre, intra and post transition basis



Ownership Structure

Citigroup Global Markets Inc. is a wholly owned subsidiary of Citigroup Financial Products Inc. The ultimate parent company is Citigroup Inc. (Ticker C)

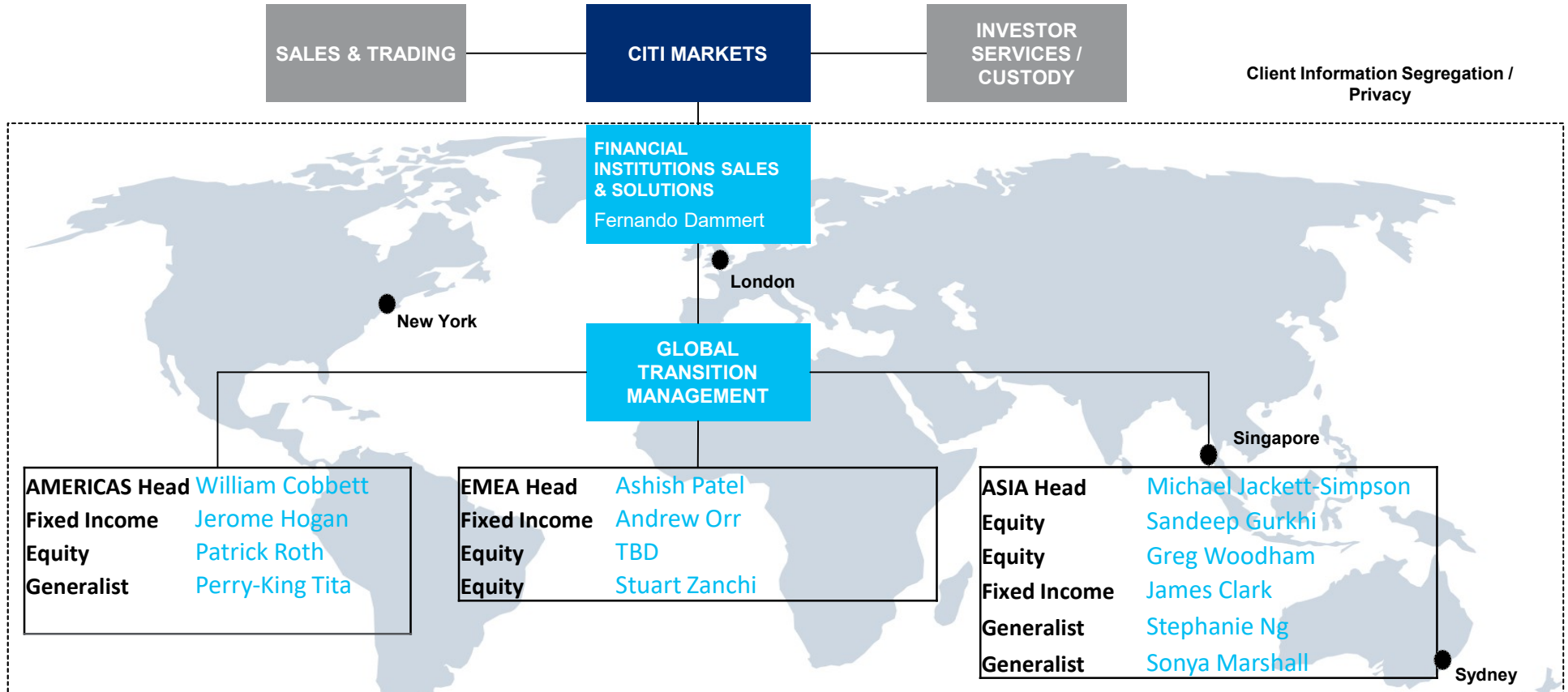


(1) The U.S.-based operations of Citibank, N.A. are referenced as 'Citibank, N.A. Home Office' in Citigroup's 2021 Resolution Plan
 (2) Represents material legal entities (MLEs) as defined by the 165(d) Rule under the Dodd-Frank Act, which specifies that an MLE is an entity, including a subsidiary or foreign office, that is significant to the activities of a core business line (CBL) or critical operation (CO). Material legal entities reported under the Dodd-Frank Act may differ from the significant legal entity subsidiaries as reported in Citi's SEC filings.
 (3) Represents intermediate holding companies not identified as MLEs in Citigroup's 2021 Resolution Plan, included to illustrate Citi's organizational structure



Global TM Project Coverage

CitiTM has been delivering integrated portfolio solutions for over 25 years while servicing global clients from 3 locations.

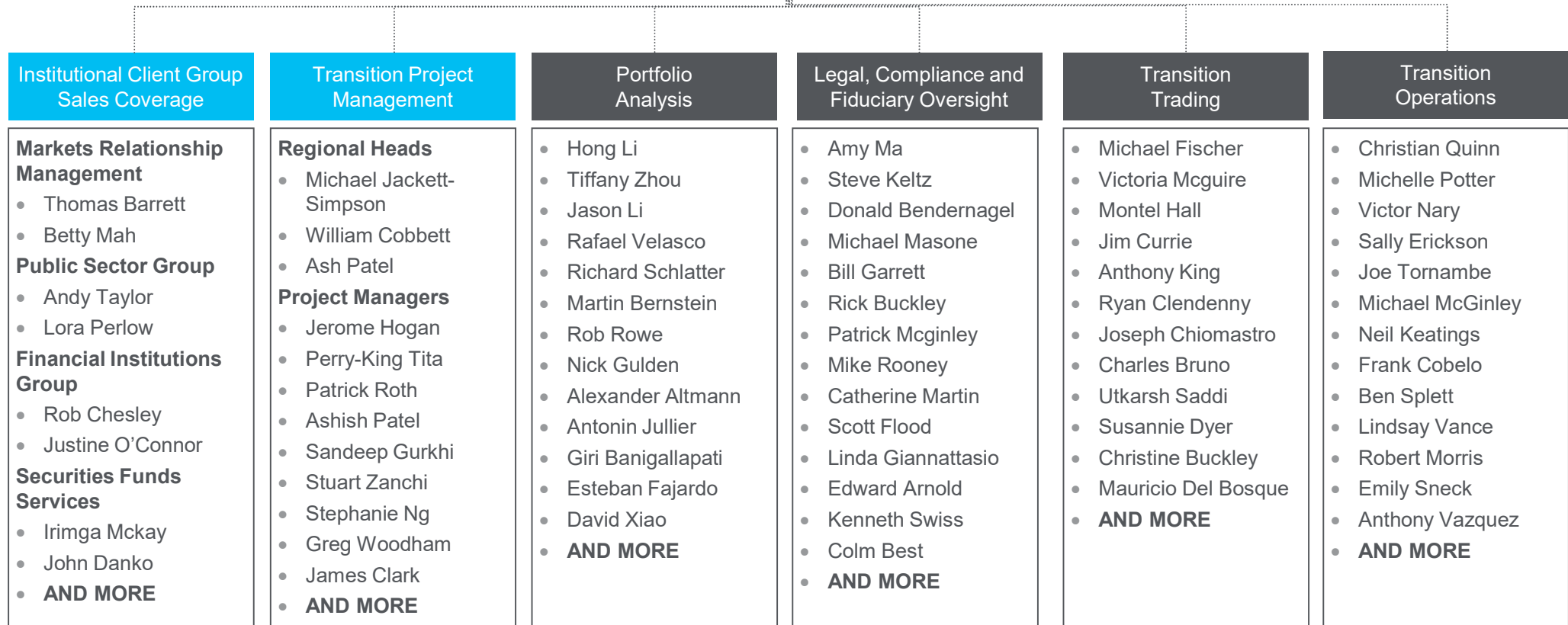


CitiTM consists of 15 project managers. The Global TM team delivers:

- Seamless service by integrating Citi infrastructure across the global team.
- Immediate access to all pre and post transition data globally.
- Continuity of service through transferable knowledge and experience between teams, and regular communication.
- 24-hour global coverage of client projects.
- Support of the wider Citi franchise including legal, compliance, trading, settlements and risk solutions teams (240 people).

Members of the operations and administrative support staff

The dedicated team leverages a network of thousands of experts around the globe – through this structure, we can deliver small-team customer service along with unparalleled resources and expertise.



Our People – Staffing and Mentoring

Citi runs a thriving talent development program for both summer interns and a 2-year analyst rotation initiative

Citi Transition Management is an active participant in the Markets and Securities Services Analyst Rotation Program, and is dedicated to mentoring and development activities

- Citi is dedicated to building its future with recent graduates from top tier 1 universities and colleges. Every summer Citi hires approximately 100 analysts to a rigorous two-year analyst rotation program. Analysts complete two one-year rotations on various desks within the Markets and Securities division.
- Analysts are assigned senior and junior mentors during their rotation. Will Cobbett on the Transition Management team is an active mentor helping coach new analysts through the program.
- Analysts are measured based on performance, it is only after the Desk Head, is comfortable with the analyst's progression that they are given more responsibility involving various aspects of a transition. Analysts will then help assist the team perform transitions with close diligent oversight from senior members.
- Following the two-year rotation, analysts interview with senior members of the bank for a full-time associate placement within the firm.
- Transition Management has participated in the program since 2011 and thus far has a 100% success rate of analysts on our team getting full-time associate offers.

The Importance of Transition Management to Citi

Citi Transition Management stands out in clear and important ways

Citi's strengths come from the expertise of our people and the unmatched capabilities of the firm

- **A conduit into Pension Fund Clients** – The Institutional Clients Group sees Pension Funds as important prospects. Transition Management is part of the suite of services the firm needs to be valuable partners to this section of the client base.
- **Clean and sizeable flow** – Transitions tend to be large events and bring liquidity to the firm which enhances our overall profitability and leads to additional flow.
- **Commissions earned** – Transition Management brings in commission dollars without taking risk or balance sheet. As we leverage many existing systems, the overhead for the group is low.

Given the importance of the product within the context of Citi's Institutional Clients Group, the TM team receives senior support and resources

- **Head count available** – Even in the current environment of cost cutting, the TM team has been allocated resources to add staff when and where necessary.
- **Senior presence and awareness** – Citi management at the highest levels have expressed support and gone on record to indicate the firm's commitment to the business. Seniors are available for calls and meetings with TM clients.
- **Compensation Structure** – Citi TM team members are compensated via a base salary and discretionary bonus. Team members are evaluated on individual, team, business unit and overall firm performance.

Market Share and Growth Potential

Citi has seen significant growth over the last 5 years by focusing on doing larger events for more sophisticated clients

Citi is optimistic about growth potential, but insists such growth be organic and in-line with our philosophy:

- **Volume and revenue growth** – Citi will continue to work with the largest clients on a limited number of larger events rather than greatly increasing the number of events.
- **Team growth** – In keeping with our focus on larger events and more sophisticated clients, Citi sees moderate growth in team size over the next 1-3 years. As more resources are needed, we have the ability to add, but we prefer to maintain our smaller teams working closely with clients.
- **Technology enhancements** – We will continue to make investments in our Transition Management System, Smart Order Routing, BECS analytics and reporting systems.
- **Pension Funds** - Finally, Citi has made the decision to focus in a more coordinated way on servicing our pension fund clients. In many cases, the firm's best relationship with the larger corporate and public pension funds resides within the transition management group. Those relationships can provide an entry for other products into the pension fund and help build the firm's overall relationship with these key clients. We believe this model will be mutually beneficial to Citi and our pension fund clients – clients will benefit from the streamlined sales approach, and the one-stop shopping aspect, and Citi will benefit from the opportunity to generate revenue from the additional products used.

Best Execution

Citi's Best Execution Policy

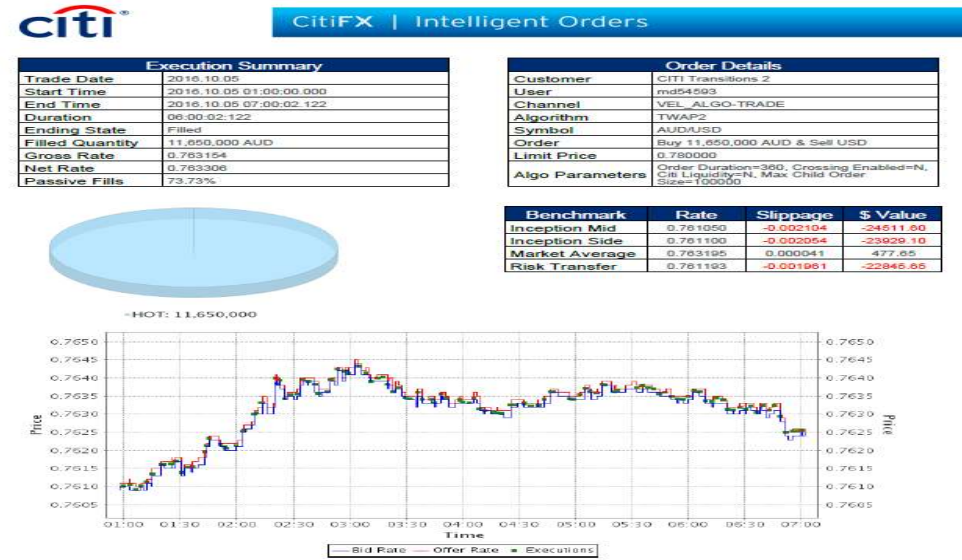
Best execution means the requirement to take all sufficient steps to obtain the best possible result for clients, taking into account price, costs, speed, likelihood of execution and settlement, size, nature or any other consideration relevant to the execution of an order. These execution factors provide the basis for us to explain how we provide best execution. We must use reasonable diligence to ascertain the best market for the subject security and buy or sell in such market so that the resultant price to the transition client is as favorable as possible under prevailing market conditions and the terms and conditions of the customer's inquiry or order.

- The definition of "reasonable diligence" for a particular transaction is based on facts and circumstances, including:
 - the character of the market for the security (e.g., price, volatility, relative liquidity).
 - the size and type of transaction.
 - the number of markets checked.
 - the information reviewed to determine the current market for the subject security or similar securities; and accessibility of quotations.
- The definition of "market" is any venue in which the type of securities are traded, including securities exchanges, alternative trading systems or platforms, brokers' brokers, and other counterparties (which may include Citi itself when acting as principal).
- We will provide best execution when we are executing an order on the plan's behalf or receiving and transmitting an order. Best execution applies when we act as agent for our clients, or where we trade with clients on a riskless or matched principal basis, it is generally clear that clients will be relying on us to protect their interests and therefore we will provide best execution.

Best Execution Verification

Citi provides clients with full transparency through child prints which allow a third party to review and evaluate trading

- Citi can demonstrate best execution by showing securities were traded at the best available price at the time of execution given the all-encompassing transition goal. To show this child prints are available upon request for Equity and FX executions.
 - All Equity and FX child prints have a time stamp and indicate the venue or exchange it was traded on.
 - Fixed Income executions include the cover(s).
- Fixed income trades done on a principal basis are executed on an agreed upon spread vs benchmark prices ensuring transparent price discovery.
- Sophisticated proprietary Smart-routers access alternative execution venues in the US and overseas. Our ability to efficiently access these rapidly growing sources of liquidity far surpasses that of our competition. Our Smart Routing technology is “cost no object” with decisions about venue made solely on the quality of execution.



Citi Equity | Child Prints

LIST	RIC	SEDOL	SIDE	EXEC_QUANTITY	EXEC_PRICE	EXCHANGE	TRADE_DATE	EXEC_TIME_GMT
TRA0217_05	2330.TW	6889106	S	7000	190.5	TAIP	2/22/2017	01:00:03:350
TRA0217_05	2330.TW	6889106	S	1000	190.5	TAIP	2/22/2017	01:03:16:366
TRA0217_05	2330.TW	6889106	S	6000	190.5	TAIP	2/22/2017	01:16:30:300
TRA0217_05	2330.TW	6889106	S	7000	190	TAIP	2/22/2017	01:31:37:443

Competitive Advantages

Citi versus our competitors

Operating from within Citi's Markets and Security Services business allows us to provide unrivalled access to global capital markets on behalf of transition clients. Citi's ability to draw on the best attributes of a leading global investment bank and one of the world's largest global custody banks is what most clearly distinguishes us from the competition. This model allows us to provide lower commission rates yet be more profitable than competitors that rely on other firms to trade and/or settle transactions.

The following are what we see to be our greatest competitive advantages:

- **Experience and Trust** – The transition management team at Citi is comprised of seasoned professionals with a lot of industry experience. Our team has managed thousands of transactions and brings a wealth of transition acumen to each engagement.
- **Un-conflicted independent transition management model** – Citi partners with our clients, offering transparency at every stage which far exceeds that of the competition.
- **Seamless project management** – Citi has developed an in-house proprietary transition management system. All details of a transition are maintained electronically in a robust, comprehensive platform. Data are communicated electronically with all counterparties, thus reducing the potential for error across the business.
- **Operational control and efficiency** – The seamless project management coupled with the Citi custodial architecture provides unmatched operational processing and reconciliation.
- **Proven risk management** – Clients worldwide come to Citi for sophisticated risk control tools and trading. We understand risk and have developed systems and procedures to mitigate it for our customers. As implicit costs far outweigh explicit costs in a transition, risk control is key.

Competitive Advantages.. continued

Citi versus our competitors

The following are what we see to be our greatest competitive advantages:

- **Meaningful transaction cost estimates** – How well cost estimates match actual results varies widely among transition managers. Citi believes cost forecast accuracy is a crucial part of the transition management product. Citi utilizes sophisticated forecasting tools like BECS to provide realistic transaction cost estimates which are never spun down to win a deal.
- **Global, direct multi-asset execution expertise** – Trading is at the core of every transition. Citi is a world leader in global execution of nearly every instrument in more markets than any other firm. The importance of low cost, risk-controlled execution should not be undervalued. Many transition managers have little trading capability and out-source execution which leads to additional layers of cost, information slippage and inferior results.
- **Product expertise to add value in every transaction** – Unlike many transition managers, Citi is an important execution counterparty for the most sophisticated investment managers in the world across all asset classes and products. The largest asset managers use trading counterparties who add the most value to their execution. Asset owners can gain the same benefits when selecting Citi as their transition manager.
- **Natural liquidity and distribution** - Our ability to efficiently access rapidly growing sources of liquidity far surpasses that of our competition. Our Smart Routing technology is “cost no object” with decisions about venue made solely on the quality of execution.
- **Ability to deliver flexible transition solutions** – Citi offers flexible transition solutions ranging from straight agency market transactions to structured vehicles customized to the exact specifications of a client. Citi has the product knowledge and experience to deliver creative alternatives that can save asset owners money during restructurings. Unlike many competitors, we are not limited by our model, and can focus on the needs of our clients.
- **Accountability and transparency** – Citi calls it like we see it. We compare total costs to estimates and explain any variance, positive or negative. We analyze what went right and what went wrong, what was controllable and what was seemingly random. Every trade and every dollar will be accounted for, giving the client a detailed accounting of the entire restructuring process. Citi is also the only transition manager to show name-by-name crossing details on both a pre and post trade basis.

CitiVELOCITY™ - Transaction Cost Modelling

Citi transaction costs analysis tool, BECS, is available online to our clients. This allows our clients to evaluate costs on their own and importantly, assures clients that our estimates are meaningful and never scaled down to win mandates.

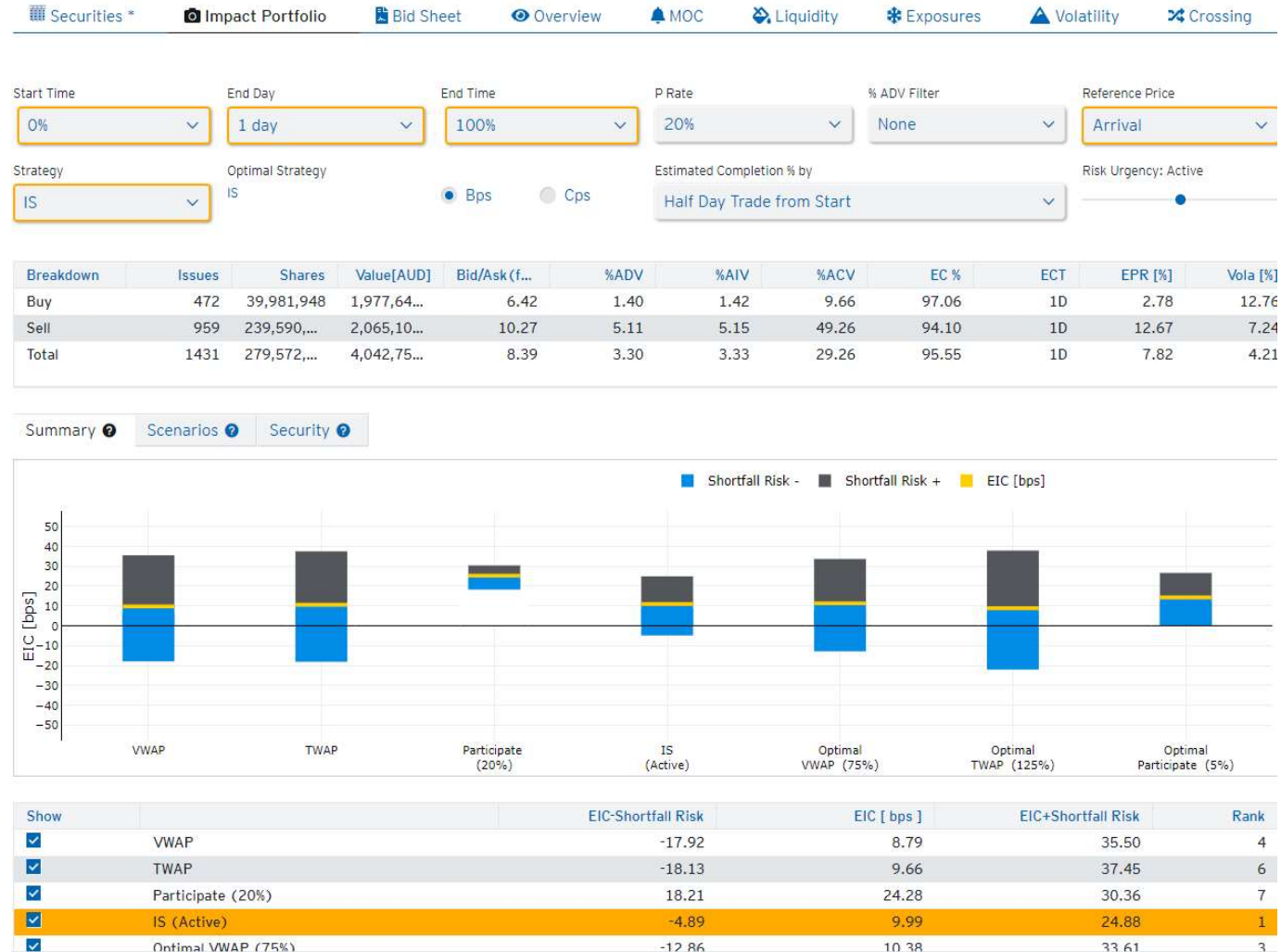
BECS (Best Execution Consulting Services)

Transition clients frequently utilize BECS, the equity transaction cost modelling function within Citi Velocity, to model the optimal strategy to execute and the expected cost for a any given transition. BECS shows total cost estimates as the function of participation rate (market impact cost) and speed of execution (opportunity cost).

This is the same transaction cost model that Citi TM uses for its equity pre-trades. In addition to being used by clients, it is also often used as an additional resource to estimate implicit cost by other transition providers.

BECS utilizes real trade information taken directly from our extensive databases to provide realistic transaction costs estimates and optimal strategies.

- Spreads: BECS relies on the data from the last 60 days, less highest and lowest 10-day average of intraday spreads.
- Volatility: BECS uses 10-day intraday realized volatility



CitiVELOCITY™ - Market Commentary and Insights

Citi Velocity is the award-winning digital platform for Markets, Securities Services & Banking, Capital Markets and Advisory Clients

Commentary and Insights

Combining Citi's global footprint with world-class innovation, Citi Velocity provides unparalleled access to cross-asset Research, trading desk commentary, proprietary data, analytics, exclusive videos, webcasts and more to empower our clients to make the most informed investment decisions.

The screenshot displays the CitiVELOCITY website interface. At the top, there is a navigation bar with the CitiVELOCITY logo, a 'Browse' button, and links for Home, My Citi Velocity, Recent, Favorites, Analytics, and Suggested. A search bar is located on the right. Below the navigation bar, the page is titled 'Home / Market Buzz'. A horizontal scroll bar shows various news items, including 'Iranian diplomats arrive in Saudi to take up Organisation of Islamic Cooperation posts' and 'Five things to know about Credit Suisse's new chairman Lehmann'. The main content area is titled 'VIDEO CENTER' and features five video thumbnails. Each thumbnail includes a speaker's name and photo, a video title, and a timestamp. The videos are: 1. Daniel Buntardjo: 'IDR FX/Rates: Watching Not So Favourable Seasonali...' (17 Jan 2022 02:04); 2. Ayso Van Eysinga: 'Citi CEEMEA Frontier Credit: Tough Start to Q1' (14 Jan 2022 11:30); 3. Mohammed Apabhai: 'Change in Regime for 2022: Dr. Mo's Take' (13 Jan 2022 19:06); 4. Tim Evans: 'US Natural Gas: Bullish for Now' (13 Jan 2022 18:40); 5. Tim Evans: 'US Gasoline: Market's Achi...' (13 Jan 2022 18:40). Below the video center, there are sections for 'POPULAR' and 'TRENDING' content. The 'POPULAR' section lists articles such as 'Trade Idea: US Rates at the Bell January 14th 2022 [CFTC Swap Trade Idea]' and 'Trade Idea: US Rates Reveille January 13, 2022 [CFTC swap trade idea]'. The 'TRENDING' section lists articles such as 'Wesfarmers Ltd (WES.AX): Overall inline though compositionally different' and 'Asia Economics & Strategy Daily: PBoC Cuts Rate'.

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Citi believes that sustainability is good business practice. We work closely with our clients, peer financial institutions, NGOs and other partners to finance solutions to climate change, develop industry standards, reduce our own environmental footprint, and engage with stakeholders to advance shared learning and solutions. Citi's Sustainable Progress strategy focuses on sustainability performance across three pillars: Environmental Finance; Environmental and Social Risk Management; and Operations and Supply Chain. Our cornerstone initiative is our \$100 Billion Environmental Finance Goal – to lend, invest and facilitate \$100 billion over 10 years to activities focused on environmental and climate solutions.





LACERS Semi-Finalist Presentation Transition Management

November 3, 2022

PRESENTED BY:

Brendan McMahon
Relationship Management

Amanda Williams
NA Head – Transition Management



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Amanda has over 20 years of experience working within financial services. Prior to joining Northern Trust in 2020, Amanda held various positions with Merrill Lynch, Charles Schwab, ING, Cetera Financial Group and Raymond James. Her career has been varied and has included holding various roles within operations, serving as a relationship manager, designing and launching a new transition services group for onboarding financial advisors and leading a broker-dealer mergers and acquisitions project team. Amanda's focus with Northern Trust Transition Management is providing regional compliance expertise, improving efficiency for the team and investing in technology and infrastructure improvements. While not focused on work, Amanda enjoys skiing, hot yoga, knitting and spending time with her husband and three children. Amanda earned her BS in Economics from Fayetteville State University (a constituent institution of the University of North Carolina) and later earned an MBA (concentration in Change Management) and an MS in Organizational Management from the University of Colorado. Amanda holds the FINRA Series 7, 63, 9, 10, 24, 65 and 3 registrations and is an Associated Person of the National Futures Association.

Brendan has over 20 years of experience in financial services. Prior to joining Northern Trust, Brendan was an attorney specializing in supporting financial service provider clients in broker-related enforcement and ERISA fiduciary matters. In 2007, Brendan joined Northern Trust as legal counsel supporting Northern Trust Institutional Sales team in securities, fiduciary and global custody banking legal matters. In 2015, he made the leap to serving as a Senior Institutional Sales representative and provided broad-based asset servicing solutions to clients ranging from public fund and corporate retirement plans, foundations and endowments, healthcare systems and Taft-Hartley plans. In 2020, Brendan accepted the role within Transition Management and focuses on consultant relationships. Brendan brings to Transition Management his previous legal expertise and is helpful in navigating challenges and identifying solutions in our complex regulatory environment. Brendan is an avid sports fan, enjoys live music and good food, and loves spending time with his wife, three children and dog. Brendan earned his BA from Miami University (OH) and his JD from Chicago-Kent College of Law. Brendan holds the FINRA Series 7, 63, 65 and 3 registrations and is an Associated Person with the National Futures Association.

Laura began her financial services career over 25 years ago, beginning with True North Communications as a member of the Corporate Treasury department. Laura joined Northern Trust in 1996 and has worked within Operations as an Information Delivery Analyst, within Northern Trust Asset Management (NTAM) as a portfolio manager for passive investment and socially responsible investing, as well as the tax advantage investment management and futures cash overlay team. Laura joined Transition Management in 2007 and has developed expertise in portfolio management, trading, foreign currency (FX) trading, futures trading, risk management and reconciliation. In her free time, Laura enjoys reading, traveling, volunteering and spending time with her husband and two children. Laura obtained her AB from University of Michigan, as well as an MBA (concentration in Finance) from DePaul University. Laura currently holds the FINRA Series 7, 63 and 3 registrations and is an Associated Person of the National Futures Association.

Chris has spent his entire career at Northern Trust, assuming his first role with the company in 2000. Initially, Chris was a Portfolio Accounting Analyst and was quickly promoted to Team Lead and further promoted to Section Manager. In 2006, Chris expanded his knowledge set and pursued additional roles including serving as the Head of Defined Contribution Implementation in Northern Trust Global Investments and as Team Lead of the Restructure Solutions Team within Northern Trust Global Investments. Chris joined the Transition Management department as a Strategist in 2012. With more than 10 years of experience in his current role, Chris brings significant expertise to the transitions he supports. His areas of expertise include knowledge of capital markets, quantitative analysis skills, operations and risk management. Those that know Chris know he is passionate about golfing and spending time with his wife and two children. Chris earned his BS in Finance from Eastern Illinois University. Chris currently holds the FINRA Series 7, 63 and 3 and is an Associated Person of the National Futures Association.

Platform Overview

A dedicated business providing customised event solutions for a global client base



LIQUIDITY ACCESS

Unique liquidity pool and world-class execution capabilities

- 460 equity and fixed income brokers¹
- 82 global markets¹
- 24/6 market coverage¹
- Unique pool of liquidity and scale enables reduced costs for clients



STRATEGY DEVELOPMENT

Removing ambiguity and minimising risk

- Planning phase with robust checklists for all stakeholders
- In-depth project plan.
- Innovative exposure solutions service helps clients bridge the gap between legacy manager and target managers



TRANSPARENCY & REPORTING

Integrity, trust and sophisticated technology

- Full transparency around costs
- Tailored strategies are provided by a suite of pre-trade, intra-trade and post-trade reporting
- All trading activity is independently validated through peer universe data and third-party Transaction Cost Analysis (TCA) providers

UNDERPINNED BY AN EXPERIENCED TEAM

1,000+
TRANSITIONS²

\$400B+
ASSETS
TRANSITIONED²

20
DEDICATED
SPECIALISTS

18
PUBLIC FUND CLIENTS
>15BN ²

30+
YEARS OF TRANSITION
MANAGEMENT

¹As of May 2021; ²For the period 2016-2020; ³Across full Transition Management team

Benefits of Our Unique Model



Faster trading

With our robust network of brokers and crossing counterparties, illiquid and concentrated positions can be traded in substantially less time



Better pricing

Crosses are executed at the midpoint in most cases, providing a better price to both sides of the trade and removing spread and impact costs



Long only counterparties

Our network of crossing counterparties are long-only, well vetted, asset managers and institutional investors



Aligned with you

Our agent only trading model ensures transparency to commissions and costs



Global sales trading

Industry veterans that advocate on your behalf to seek block trading opportunities



Global TM and trading desks

Co-located transition and trading desks provide local expertise, real-time coordination and expert operational knowledge

Looking Ahead

Internal focus on service



Global collaboration and expertise



Expanding Exposure Solutions globally



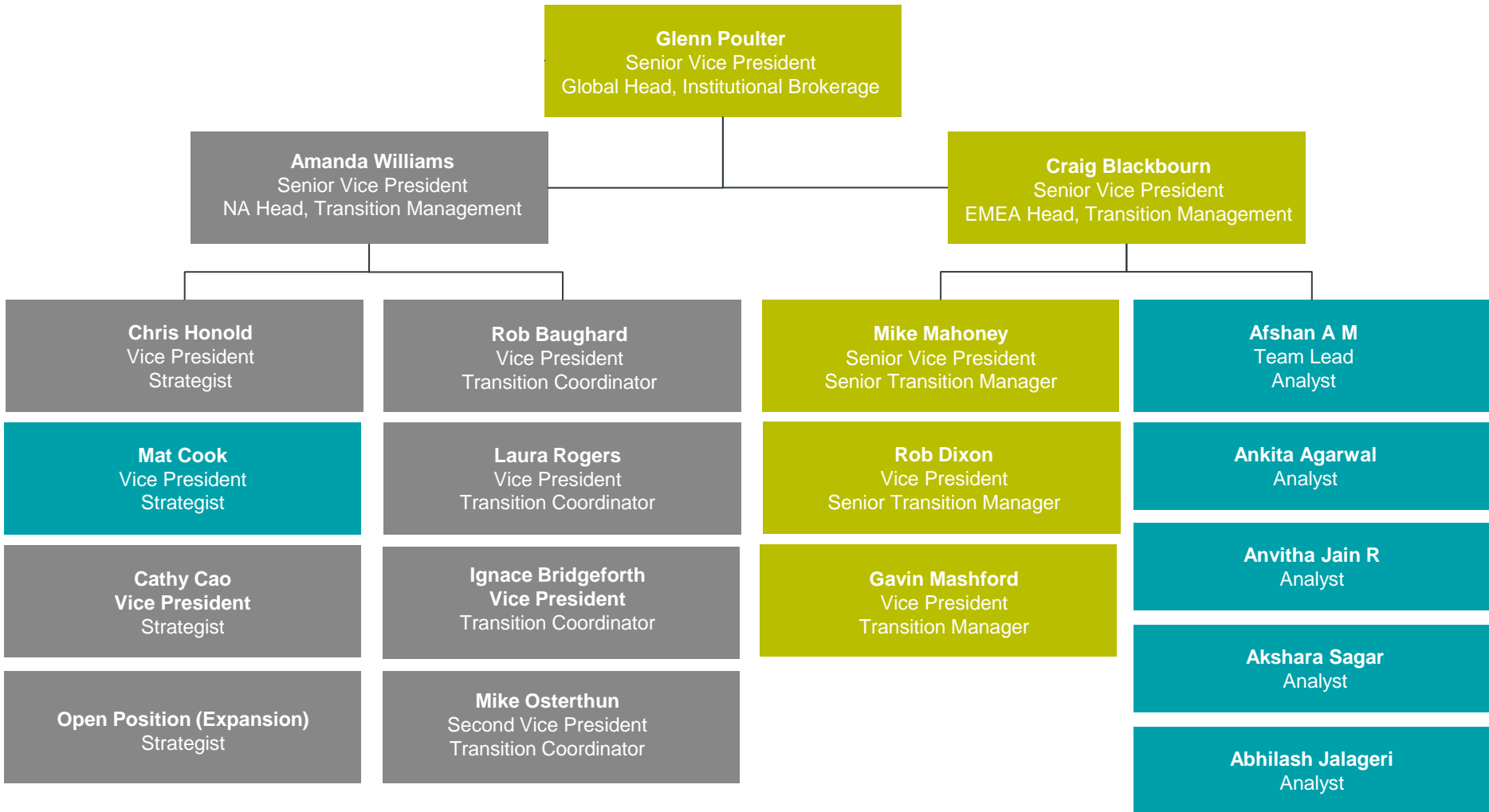
Growing business in APAC



Continued investment in technology



Transition Management Team



Transition Management Team

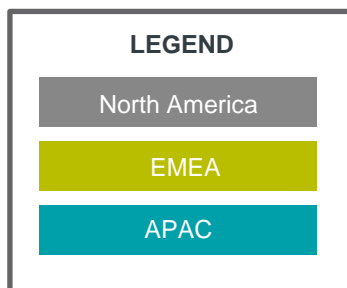
Grant Johnsey
Senior Vice President
Head of Institutional Brokerage

Brendan McMahon
Senior Vice President
Consultant Relations
Transition Management

Bill Kincaid
Senior Vice President
Sales Representative, Americas
Transition Management

Mike Terzich
Senior Vice President
Sales Representative, Americas
Transition Management

David McPhillips
Senior Vice President
Sales Representative, EMEA/APAC
Transition Management



Diversity, Equity & Inclusion Strategy

Our goal is to support Northern Trust's global strategy while ensuring locally relevant DE&I challenges and opportunities are addressed.

ACCOUNTABILITY



Track progress of and hold managers accountable for measurable outcomes

DEVELOPMENT



Create targeted and scalable programs and provide tools focused on early, mid-career and senior level advancement

CULTURE



Enhance Northern Trust culture to create a more diverse, equitable and inclusive environment

MARKETPLACE



Positioning the organisation an employer of choice for diverse talent and working collaboratively to create positive change across-industry

Opportunities for collaboration:



Best practice sharing forums, cross-company discussions and impactful trainings to learn and educate ourselves.



Educational and insightful events to raise awareness, stimulate dialogue and create positive change.



Employability workshops to support diverse communities seeking employment and cross-organisation volunteering opportunities to further inclusion.

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**NORTHERN
TRUST**



LACERS

TRANSITION MANAGEMENT SEMI-FINALS

November 3, 2022

EMBRACE
THE POSS/BLE®

TEAM OVERVIEW & FIRM DETAILS

TRAVIS BAGLEY, CFA
Director, Transition Management

DOUG MILLER
Senior Director - Relationship Management

Biography



B.S., Finance and Economics,
Central Washington University

Licensed Registered
Representative, FINRA Series
7, 6 & 66 (Russell Investments
Implementation Services, LLC.,
member FINRA)

CFA Charterholder, CFA
Institute

Travis Bagley, CFA

**Director, Transition Management
Russell Investments Implementation Services, LLC**

Travis Bagley leads the communication and strategic positioning of Russell Investments' transition management offering in the Americas. Travis focuses on helping asset managers and plan sponsors develop customized solutions for the transition management market. Prior to his current role, Travis served as the director for Russell Investments' fixed income transition management service and lead the team to become one of the innovators and market leaders in the fixed income transition management market. Travis's current duties included transition strategy development, planning and implementation, operational process oversight, process development, and implementation transaction cost analysis.

Prior to joining Russell Investments in 2000, Travis worked as an investment technology consultant with Cambridge Technology Partners, performing technology consulting for clients such as Franklin Templeton, Robertson Stephens, Fleet Securities and Deutsche Bank Securities, among others. While at Cambridge, Travis worked as a functional lead in developing a broad array of portfolio management and trading applications.

Prior to Cambridge, he worked as assistant vice president of investments for Bennington Capital Management from 1994 to 1998, where he held an array of roles ranging from investment management, to operations, systems and compliance, to marketing and client service. Chief among his responsibilities were performing management, trading and analysis for multiple fixed-income portfolios within a mutual fund complex; managing the day-to-day operations of Bennington's Accessor Funds; developing evaluation systems for operations, investments and compliance; developing marketing materials for Bennington's family of mutual funds; and providing technical support for the firm's proprietary asset allocation model.

Travis is a director of transition management for Russell Investments Implementation Services, LLC, Russell Investments' global trading firm. Russell Investments Implementation Services, LLC is a SEC registered investment adviser and registered broker-dealer, member FINRA/SIPC.

Travis is a member of the Seattle Society of Financial Analysts.

Biography



B.A., University of Washington

Licensed Registered Representative, FINRA Series 7 and 63 (Russell Investments Implementation Services, LLC, member FINRA)

Douglas Miller

Senior Director, Relationship Management Americas Institutional

Doug Miller is director of relationship management for Russell Investments' Americas Institutional business. He represents Russell Investments best thinking across consulting, implementation services and our global investment division. His understanding of the global capital markets and objective oriented investment solutions helps Russell Investments build strategic partnerships with clients, delivering unique investment solutions. He is responsible for managing relationships with the largest corporate and public retirement plans and other large pools of capital in the Western United States.

In Doug's previous role with Russell Investments, he was responsible for establishing new investment management relationships throughout the Mid-West/South-West United States. Working as a strategic partner with client and retirement advisory committees and chief financial officers, Doug helped them understand the scope of the firm's investment solutions and comprehensive OCIO relationships.

Doug also worked within Russell Investments' Index division, where he worked with Russell Investments' investment management clients in the Northeast to establish licensing relationships when Russell Investments owned the index business.

Doug has worked with Parametric Portfolio Associates and Silver Creek Capital in business development roles.

Before joining Russell Investments, Doug was a regional director of U.S. sales for Bank of New York Mellon Corporation. He worked as a strategic partner to plan sponsors, leveraging peer group universe data, and risk and analytics tools to monitor investment managers and overall fund performance.

Prior to entering the investment management industry, Doug held sales, sales management and senior management roles with various firms in the technology industry.

Russell Investments – core competencies



Advice

- > 50 years of consulting experience
- > Advise on \$2.94 trillion in institutional assets*
- > Independent 3rd party manager research



Asset Management

- > 50 years designing customized investment strategies
- > 40 years of building multi-asset solutions
- > \$340.8 billion assets under management



Implementation

- > Over 30 years managing risks and overall portfolio exposures
- > \$229 billion in passive/model-based assets managed internally
- > \$130 billion transitioned in 2021

As of December 31, 2021, unless otherwise noted.

*As of June 30, 2021.

Russell Investments Implementation Services, LLC

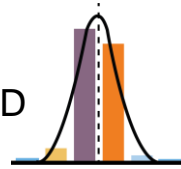
Significant scale and resources, available as an extension of your team



24
HOUR
Trading
capability



\$2.5
TRILLION USD
Traded in
2021



\$130
BILLION USD
Assets
transitioned in
2021 across 190
events



\$743
BILLION USD
Foreign
Exchange
Traded in 2021



90+
Investment
professionals
located globally



\$113
BILLION USD
Managed in
overlay services
globally



35
YEARS
Experience in
implementation
services



Ability to
Trade in over
100+
MARKETS



Source: Russell Investments. As of December 31, 2021 unless otherwise noted.

¹As of March 2022.

Past performance is no guarantee of future results.

Experienced, well resourced global team

More than 35 years transition experience



TEAM



EXPERIENCE



EXPERTISE

20 Global transition team members¹

190 Events in 2021

17 Average years PM experience

Proven Track Record

Over 75% of actual results are within standard deviation of estimates²

20+ Traders specialized by asset class and instrument

\$130.2B USD in Portfolios Transitioned in 2021

Beginning portfolio values



Source: Russell Investments Transition Management Performance Composites, 5-year composite ending 2021 covering 791 transitions. Past performance is not a guide to future performance.

Data as of December 31, 2021, unless otherwise specified.

¹As of October 01, 2022

²As of March 2022

Russell Investments – Firm Information



Vision

- > Primary focus – delivering advisory, asset management and implementation services to the institutional marketplace
- > This is our core business and comprises about 90% of firm revenues



Organizational Structure

- > The firm has structured itself to provide tailored portfolio solutions to larger institutional clients who often desire custom solutions. Russell Investments will continually evolve with our clients to best deliver on this objective.



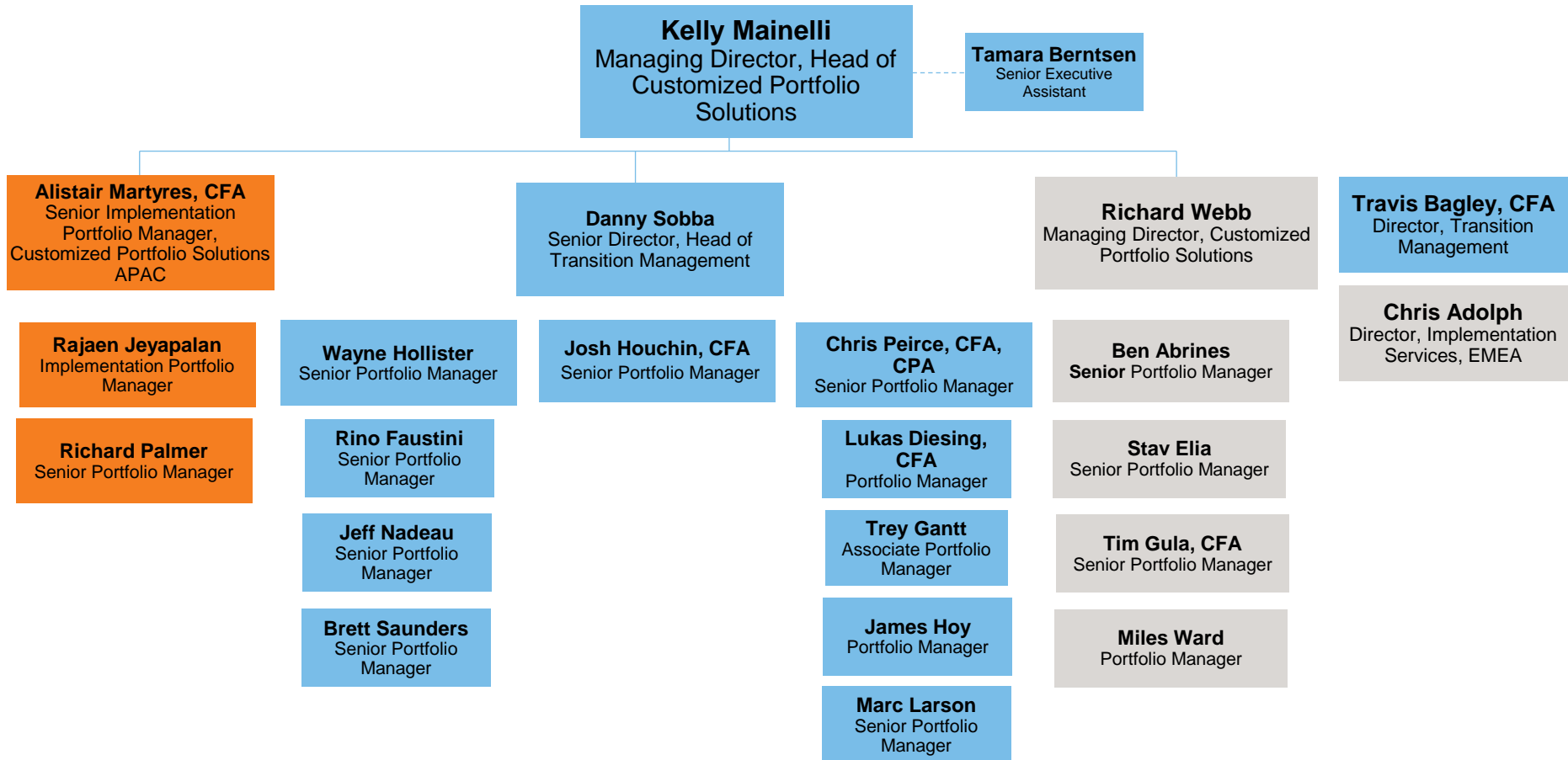
Talent Retention

- > Russell Investments strives to offer competitive compensation (salaries and bonus). Incentive bonuses are related to the overall performance of the firm and specific job performance of the individual. Our associate retention rates are consistently above industry averages.

As of December 31, 2021, unless otherwise noted.

ORGANIZATIONAL CHARTS

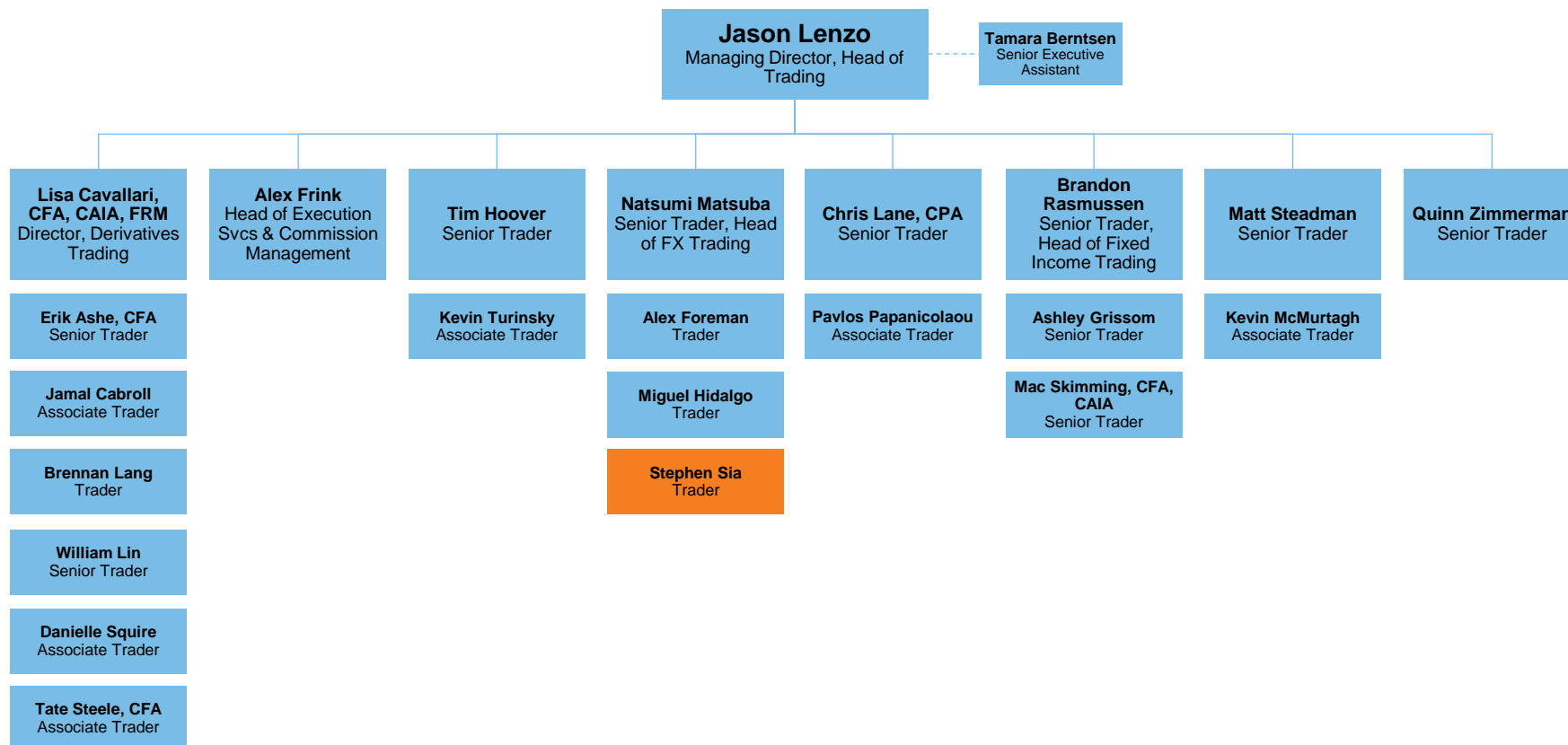
Transition Management



As of September 30, 2022

Americas EMEA Australia

Trading

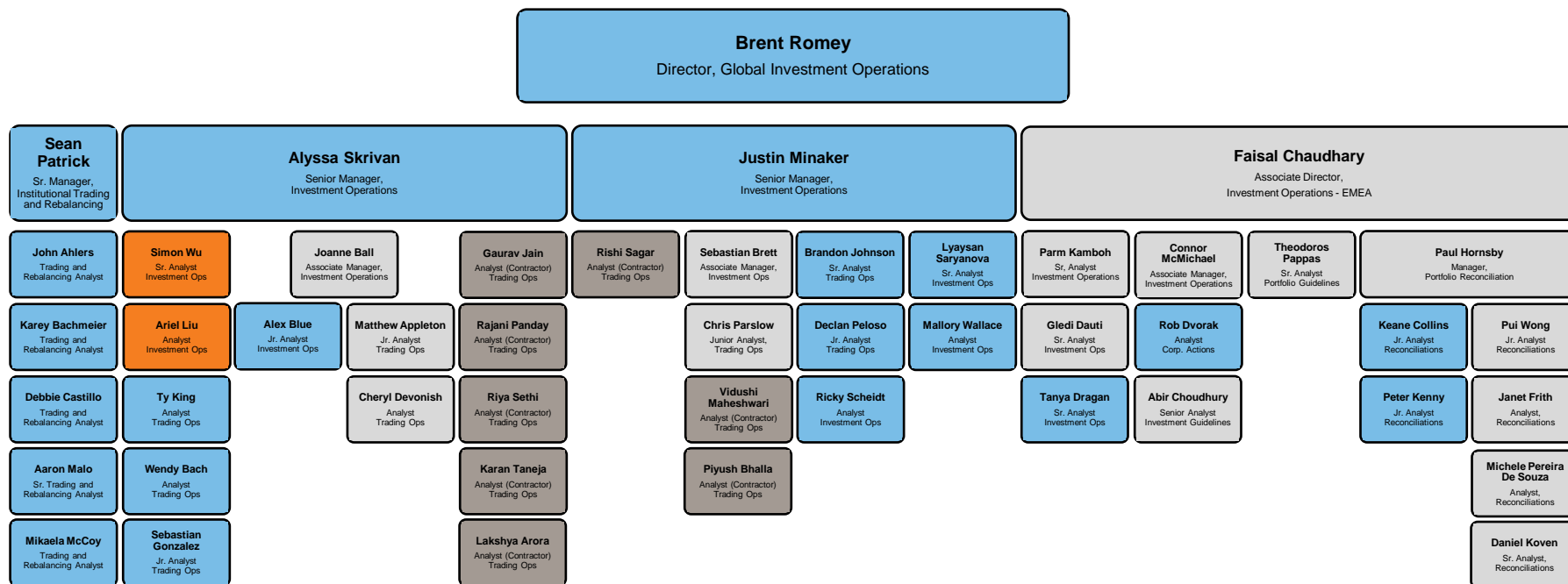


As of September 30, 2022

Americas EMEA Australia

Global Investment Operations

Organizational Structure



As of August 1, 2022

Americas

EMEA

Australia

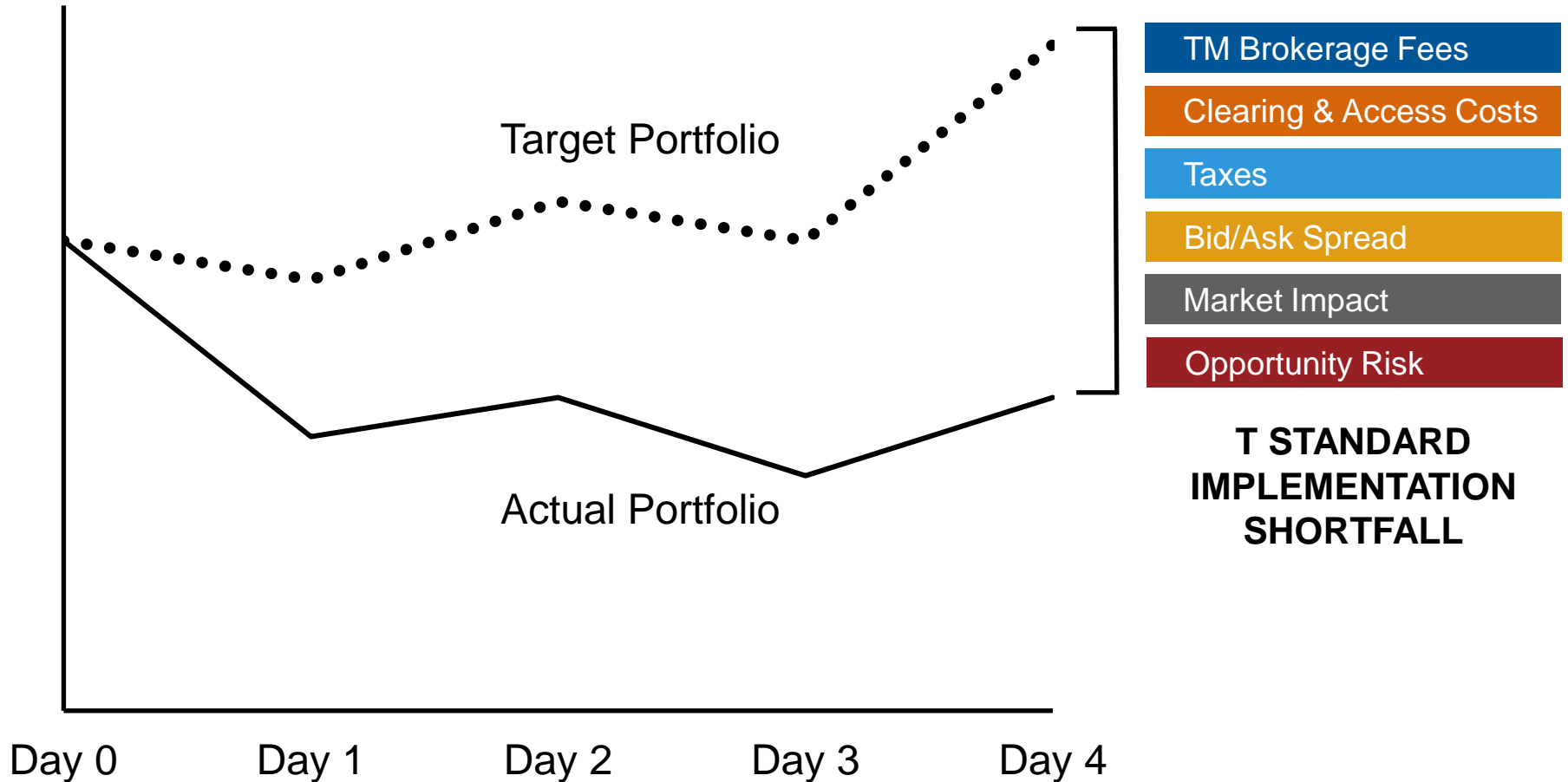
INDIA

★ Open position

THE TRANSITION PROCESS

Goal: Minimize T Standard Implementation Shortfall

Minimizing all costs: brokerage, taxes, fees, bid/ask spread, market impact and opportunity risk, back to the reference data (Day 0)



Source: Russell Investments. For illustrative purposes.

Focus on the most impactful performance factors

ASSET ALLOCATION

1

Differences in asset classes, for example equity and fixed, are the largest drivers of risk in transition events and should be addressed first in a transition event

PORTFOLIO STRUCTURE

2

Differences in portfolio structure, for example market cap, region, sector, fundamental risk factors; are the second largest driver of risk in transition events

TRADING EFFICIENCY

3

Trading is an important component of transition performance and should be diligently addressed as a pure agent to maximize performance

Major steps in a transition



PRE TRANSITION

LACERS and RIIS complete evergreen agreement

LACERS makes investment manager decision and discusses plan with RIIS

LACERS and RIIS complete addendum to evergreen agreement

RIIS reviews portfolio holdings and provides pre-transition estimate using the T-Standard

RIIS consults with LACERS, custodian and managers on issues including holidays, markets, currencies, illiquid holdings, etc.

LACERS, RIIS and custodian have “Kick Off Call” to review plan



TRANSITION

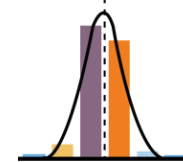
RIIS begins transitioning assets, focusing on hierarchy of risks (asset allocation, portfolio structure, trading)

RIIS provides operational oversight, pricing support and settlement management

RIIS provides daily performance using T-Standard

RIIS frequently communicates with LACERS and custodian

RIIS frequently consults with managers on specific names and events



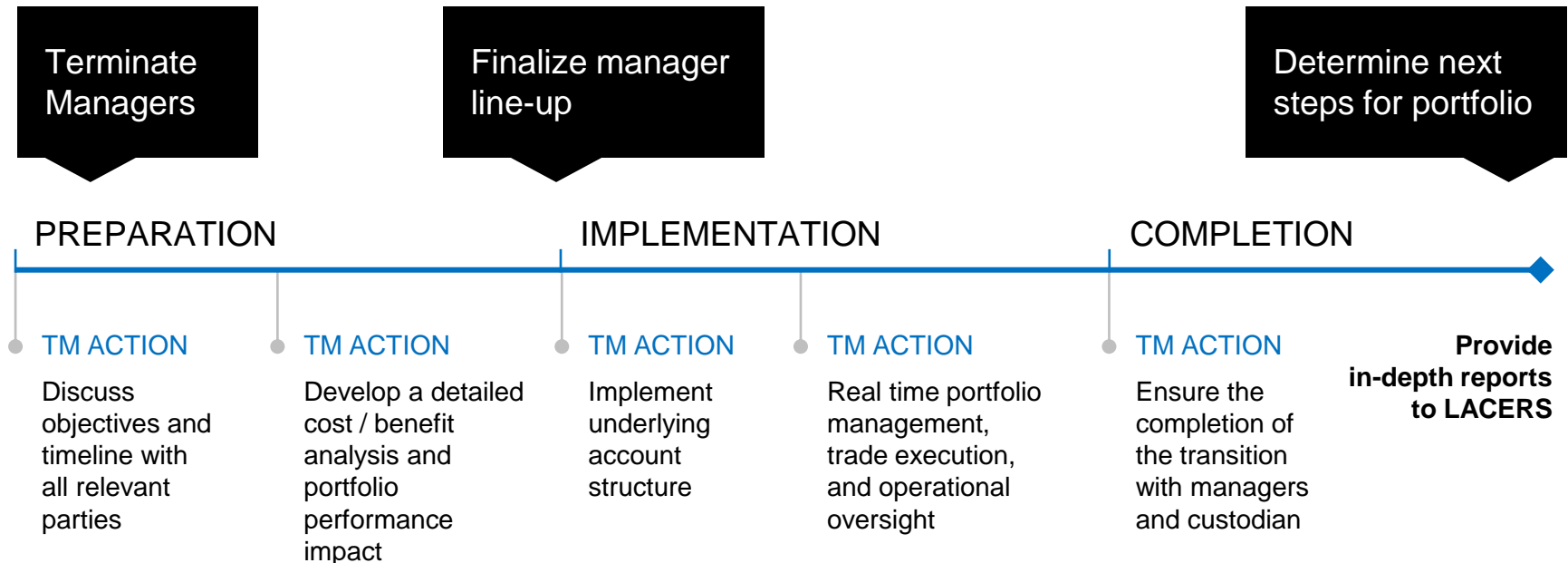
POST TRANSITION

RIIS provides post-transition analysis including performance versus estimate using T-Standard

LACERS and RIIS hold post-transition review meeting

RIIS provides help on any outstanding settlement issues

Adding value throughout the transition



Our integrated transition management and trading teams are intimately involved in the transition process. Trading over \$2.5 trillion in 2021, RIIS has the insight, experience and scale to minimize performance slippage and costs.

Source: Russell Investments TM = Transition Manager

Why Partner with RIIS?



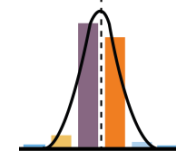
BUSINESS MODEL

- Fiduciary - 1940 Act Adviser*
- Full transparency to fees
- Agency only, no rebates or PFOF
- Unbiased venue selection



HISTORY AND EXPERIENCE

- 19 dedicated TM PMs
- 90+ implementation professionals
- 35+ years experience in TM
- Experts in large complex events



PERFORMANCE TRACK RECORD

- T Standard measurement
- 73% of events within 1 Std. Dev.
- 1,638 events in past 10 yrs.
- Delivering on expectations

Over the last 10 years our performance estimates
have been within **5 bps** of actual results¹

Source: Russell Investments. Data as of December 2021.

¹Transition Management Performance Composites, 10 year composite ending 2021. Past performance is not a guarantee of future performance. For illustrative purposes only.

*Dually registered as an Investment Adviser and Broker Dealer



THANK YOU!

ANY QUESTIONS?

Important information

Pensions & Investments Top Tier Broker 2022

In 37 out of 42 most recent quarters, Russell Investments Implementation Services, LLC has been ranked as a top-tier broker in *Pensions & Investments'* Tradewatch report based on the quality of its trade execution (most recently in *P&I's* March 2022 issue).

Rankings are based on best-performing brokers as measured by the difference in cost/savings against the universe of Elkins/McSherry, a State Street company. The Elkins/McSherry universe is based on the top 50 brokers in each category by U.S. dollar volume. This is a quarterly ranking based on the previous four-quarters as of December 31, 2021.

European Pensions Awards Currency Manager of Year 2019

Russell Investments was named the winner of the "Currency Manager of the Year" at the 2019 European Pensions Awards. Chosen among 12 finalists in this category, Pensions Age and European Pensions cited Russell Investments' "excellent commitment to improving outcomes for both its clients and the wider industry, with its unrivalled ability to manage currency risk, as well as reducing execution cost

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