

Summary of Engagements September 2019

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Project Management Engagements

<u>Investment Attribution Design and Implementation</u> (January 2019 ~ present)

A US\$300 billion asset manager active in factor-based investing across public and private markets globally is in the process of designing and implementing a framework for attributing investment returns and exposures resulting from decisions made at all points in the investment process, from the setting of top-down objectives to the selection of specific investment assets. We are leading the portfolio management aspects of this project and participating in the operational aspects as a representative of portfolio management.

Fundamentals Forecasting Proof of Concept

(November 2017 ~ present)

A quantitative equity manager is pursuing a cutting-edge method of forecasting equity fundamentals. We are providing project management services for the proof of concept.

Additional Canada Pension Plan Preparation

(April 2017 - March 2019)

Canadian federal legislation created an enhancement to the Canada Pension Plan, which was to have a different risk profile from the existing "base" Plan. We managed a project on behalf of the Canada Pension Plan Investment Board (CPPIB)'s portfolio management function to ensure CPPIB was ready to launch the additional Plan on January 1, 2019. While the bulk of the work was ensuring proper portfolio design, this firmwide project required coordination with Operations and Accounting to ensure that the shift from a one-fund structure to a multi-fund unitized structure was designed properly, and with Legal and Public Affairs teams to ensure compliance with applicable laws, regulations, and expectations of the federal and provincial officials who created the additional Plan.

Portfolio Investment Process Redesign

(December 2014 - March 2017)

In this engagement we oversaw the redesign of the investment framework for a \$250 billion fund that invests across public and private assets around the world. Our responsibilities included coordinating the efforts of management to design the principles and process for realizing the desired portfolio composition for the entire fund. As a member of the enterprise-wide program office for this initiative, we communicated with and educated staff from around the company about the evolving design, and prepared for its implementation.

Investment Vehicle Replication

(January – December 2016)

A multinational \$1 trillion+ mutual fund complex was seeking to replicate its fundamentals-based US fund vehicles in other domiciles using quantitative techniques, in order to deliver its investment insights to a broader market. We managed the fixed income portion of a major fund launch in Europe based on a U.S. fund, by bringing together investment, operations, and IT professionals from across the organization.

Portfolio Management Platform Design and Implementation (June 2011 - March 2014)

A manager of US\$165 billion of pension assets was embarking on the design and implementation of a new platform to facilitate its quantitative and fundamental market neutral corporate securities investment program and to scale for anticipated dramatic asset inflows. We structured the multi-year program to identify the business outcomes desired; facilitated the solution design; defined the sequence of implementation; and analyzed the effects on business processes and organization. We led the implementation program to successful deliverables of fundamental investment portfolio construction tools and processes, improved interactions with the trading desk, and the development of a robust quantitative research platform and its underlying components.



Asset Management Back Office Outsourcing (May 2001 - March 2003)

A global asset management firm outsourcing the middle and back offices of its North American operations engaged us to manage the technology separation portion of the project. This "lift-out" involved the transfer of several applications from the asset manager to the custodian/administrator; the decoupling of tightly linked systems and implementation of arms-length interfaces between the two organizations; and the separation of the two networks.

Our primary role was to ensure that all linkages between systems staying in house and those migrating to the service provider were discovered and documented, that plans for their decommissioning and replacement were developed, and that those plans were then executed.

Process Analysis, Design, and Documentation Engagements

<u>Trading Lifecycle Solution Definition</u> (July 2013 - December 2014)

This engagement followed directly from *Trading Lifecycle Solution Business Case* (page 5). We led a team of internal client staff and consultants to develop a target business process model and investment systems architecture, and to select solutions, for a large national pension fund's public markets trading lifecycle. We led this effort from its inception until the proof of concept, when we transitioned leadership to an internal client team.

Retirement Tool Selection (January - May 2012)

A large U.S. mutual fund complex wanted to adopt a set of retirement income tools for use by investment advisors. We helped them build their business case, define the functional components, decide on a buy versus build approach, and create a high-level timeline for implementation.

<u>Quantitative Equity Portfolio Management System Functional Requirements and Operating Model</u> (June 2004 - August 2005)

This project followed directly from the application duplication and risk analysis below. The quantitative equity investment team decided to replace the multiple legacy portfolio management platforms with a new strategic system, and engaged us to develop functional requirements to aid in the RFP process and the buy-versus-build decision. These were developed as a single, globally consistent set of requirements, incorporating and standardizing the principles of all in-scope locations.

The investment team subsequently decided to build its own in-house system, using our functional requirements as a base. We were retained to lead the development of the operating model and use cases for the new system. We used this opportunity to converge the multiple legacy operating models in the various regions, which was a primary goal of our client.

<u>Quantitative Equity Application Duplication and Risk Analysis</u> (January - June 2004)

An investment team found itself operating on four separate platforms for optimization and trade order generation for quantitative equity strategies. We were engaged to survey and document their applications, databases, and flows, and to make recommendations about reducing risk and duplication. We produced a set of detailed diagrams, accompanied by a sortable, filterable database, of all the components, and a report summarizing our recommendations.

Management Consulting Engagements

<u>Investment Management System Selection</u> (January 2019 - present)

We are advising a niche asset management firm on the selection of an investment management platform to replace its outdated system, and on the transition plan from its highly manual processing to the automated, exception-based process a new system will enable.

Trading Lifecycle Solution Business Case (January - June 2013)

For this large national pension fund, we developed the business case for redesigning the end-to-end trading lifecycle and undertaking a solution search. We started by establishing with senior management the long-term business drivers, then analyzed the readiness of the fund's current state solutions to react to those drivers, and finally, built consensus across a large stakeholder group to move into defining the architecture and selecting a solution. This led directly to the *Trading Lifecycle Solution Definition* engagement (page 4)

Global Data Management Organization Design and Engagement Model (September 2002 - January 2003)

This firm's data management function was suffering from a poor reputation, and they sought advice on how to best counteract that through improving their organization, aligning with their business customers, and updating their engagement model. We provided an independent outsider's perspective on the issues and recommended improvements. Our recommendations were subsequently adopted, resulting in a highly professional well-regarded global data management organization.

<u>Securities Lending Project Review</u> (June - July 2000)

The software development project we reviewed for this premier global fund manager was designed to position its securities lending business for growth and e-commerce.

The review included assessing the prospects of success for the project, which was well behind schedule and was consuming resources beyond the contracted amount. It involved analyzing the underlying technology involved with the aim of placing it appropriately in the technology portfolio, and advising the client about how to work with the vendor to complete the project. We also provided an assessment of the risks and opportunities of working with this vendor again.

<u>Database Management System Strategy</u> (October 2000 - February 2001)

This firm's database management system (DBMS) strategy was being revisited because several third-party DBMSs other than the firm's standard were appearing in its technology portfolio. The chief technology officer engaged us to evaluate the field of choices of DBMSs from a non-technical perspective and to make recommendations regarding the client's future strategy. We partnered with internal staff to create the evaluation model and perform the research, which culminated in a set of compelling recommendations adopted by the client.

Teaching

Making the Case for Change (October 2010)

We taught a workshop in Cornell University's MBA program about how to construct business cases and develop support for them.



Other Engagements

- Global Investment Guidelines Compliance System, Process, and Organization Implementation (2005 2007)
- Fund of Hedge Funds Shared Data Strategy (2008)
- Hedge Fund Process and Data Management Analysis (2008)
- Data Management Advisory for Outsourcing (2011)
- Strategic Planning for U.S. Retail Financial Institution (2010-2011)
- Project Demand Management and Resource Allocation (2010)
- Review and recommendations for a global firm's foreign IT division on behalf of the company's global head of Technology (2000)
- Terms of reference for a company's Global Technology Board (2000)
- Advisory services on outsourcing the middle and back offices of a global firm's Japanese asset management subsidiary (2003)
- Advisory and analytical services for reducing the number of disparate technologies at a major asset manager (2003-2004)
- Advisory services on specification of a securities lending data warehouse and reporting system (2004 2005)
- Structuring a portfolio of tactical improvement projects for a front office investment management system (2004 2005)
- Structuring a project to remediate an aging database platform and address Japanese regulatory findings (2004 2005)
- Documentation of static data maintenance procedures for an international implementation of Sungard's Decalog portfolio management platform (2000)
- Management of dependencies within and outside a complex investment system implementation program (2005 2006)
- Not-For-Profit Board Retreat Facilitation (2007)

Client List

We have provided consulting services to the following companies, among others, in the financial industry:

- Barclays Global Investors
- AIG
- Man Investments
- Vyas Capital Management
- Canada Pension Plan Investment Board
- Kinecta Federal Credit Union
- Credit Suisse Asset Management
- ImpactAssets
- Major mutual fund complex

Engagement Chronology

March - April 2000 Global Technology Board

March - May 2000 International Information Technology Management

June - July 2000 Strategic Securities Lending Project Review [page 5]

July - October 2000 Static Data Maintenance Procedure Documentation

October 2000 - February 2001 Database Management System Strategy [page 5]

April 2001 Human Resources Data Analysis

May 2001 - March 2003 Asset Management Back Office Outsourcing [page 4]

September 2002 - January 2003 Global Data Management Organization Design and Engagement Model [page 5]

April - July 2003 Japanese Middle and Back Office Outsourcing Advisory

July 2003 - February 2004 Reduction of Technology Footprint

January - June 2004 Quantitative Equity Application Duplication and Risk Analysis [page 4]

June 2004 - August 2005 Quantitative Equity Portfolio Management System Functional Requirements,

Operating Model [page 4]

October 2004 - January 2005 Database Platform Remediation for Japanese Regulatory Purposes

November 2004 - May 2005 Tactical Improvement Program for Investment Management System

November 2004 - May 2005 Securities Lending Data Warehouse Advisory

August 2005 - February 2006 Investment System Dependencies Management

November 2005 - December 2007 Global Investment Guidelines Compliance System, Process, and Organization

Implementation

December 2007 Not-For-Profit Board Retreat Facilitation

March 2008 - August 2008 Hedge Fund Process and Data Management Analysis

April 2008 - August 2008 Fund of Hedge Funds Shared Data Strategy

March - May 2010 Project Demand Management and Resource Allocation

August 2010 - January 2011 Strategic Planning

October 2010 Making the Case for Change Workshop [page 5]
March 2011 - June 2011 Data Management Advisory for Outsourcing

June 2011 - March 2014 Portfolio Management Platform Design and Implementation [page 3]

January 2012 - May 2012 Retirement Income Tool Selection [page 4]

January - June 2013 Trading Lifecycle Solution Business Case [page 5]

July 2013 - December 2014 Trading Lifecycle Solution Definition [page 4]

December 2014 - March 2017 Portfolio Investment Process Redesign [page 3]

January -- December 2016 Investment Vehicle Replication [page 3]

April 2017 – March 2019 Additional Canada Pension Plan Preparation [page 3]

November 2017 – present Fundamentals Forecasting Proof of Concept [page 3]

January 2019 – present Investment Management System Selection [page 5]

January 2019 – present Investment Attribution Design and Implementation [page 3]



Barry Chester



Barry N. Chester is principal of Barry Chester & Company, L.L.C., founded in 2000. He has managed projects in the financial industry, notably in the asset management area, for more than twenty years. Such projects have revolved around the development and improvement of investment and operational activities of buy-side financial firms, and have included managing projects to introduce or redesign investment structures and capabilities; strategic planning; developing applications that assist investment decision-making and reporting; and managing global programs to outsource investment operations and to implement applications and associated business processes.

Since forming Barry Chester & Company, Barry has worked on numerous projects for major global asset management firms, as well as smaller firms such as socially responsible investment funds, credit unions, and hedge funds. These projects have most recently focused on top-down portfolio design and attribution, and have also included business case development; strategic planning; organizational reviews; managing a back-office outsourcing

initiative; documenting complex business processes; specifying functional requirements for portfolio management systems; and leading a global initiative to implement software and the associated business organization and processes to monitor and ensure compliance with contractual and regulatory restrictions on investment activity. In his capacity as global program manager, he has led globally-distributed teams with members and senior stakeholders located in London, Tokyo, San Francisco, Sacramento, Toronto, Washington, New York, and Sydney.

Barry has also been a guest lecturer at Cornell University's Johnson Graduate School of Management.

Before the establishment of Barry Chester & Company, Barry held positions with Kidder, Peabody & Co., and then J.P. Morgan Investment Management (JPMIM). He spent six years on assignment for JPMIM to Japan, where he was responsible for managing all aspects of the technology environment. He also headed the development of the Tokyo office's business continuity and disaster recovery plans, and served on the New Product Committee and the Senior Management Team. On his return to the United States, he assumed leadership of JPMIM's North American Euro implementation. He chaired the Asset Managers Forum's Euro subcommittee, where he helped shepherd the U.S. investment management community through the euro implementation. He also served as a member of the Securities Industry Association's (SIA) STP Buy-Side Committee, where he co-authored the SIA's STP Buy-Side White Paper. He was on the buy-side workshop panel at the May 2003 STP conference run by the SIA in New York.

Barry brings a wide array of skills to bear on his projects. To complement his thorough knowledge of the institutional asset management industry, he has the ability to maintain focus on the business objectives and drivers for an initiative, while also being able to delve into detail when needed. Combined with talents for business case development and forward planning, this makes him an effective manager of project risk and stakeholder communication. He is universally known for maintaining an independent point of view, and total honesty. Among his strongest points are the ability to manage diverse sets of stakeholders, to align and manage teams who are broadly dispersed — both geographically and organizationally — around common goals, and to deliver results. Barry operates effectively in a multicultural context, having delivered projects on four continents. He is committed to upholding the standards of the English language and produces written communications at the highest level of quality and with attention to nuance.

Barry includes among his clients many of the world's most prestigious firms, including Barclays Global Investors (acquired by BlackRock), Canada Pension Plan Investment Board, Credit Suisse Asset Management, and SSB Citi Asset Management (acquired by Legg Mason). He has also advised ImpactAssets, Kinecta Federal Credit Union, Man Investments (in collaboration with Cutter Associates), and Vyas Capital Management.

Barry is founding President of Opera Ithaca, a professional opera company in Ithaca, New York, where he lives, and Past President of Kitchen Theatre Company, an equity theater company in Ithaca. He is also an amateur musician, and plays the French horn whenever he can find an orchestra. He was the first foreigner ever to play with the Takadanobaba Kangengakudan, a prestigious Japanese amateur orchestra. He has played with orchestras in New York City, and is currently a member and board member of the Ithaca Community Orchestra.

Barry is a graduate of the University of Pennsylvania.

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