

A timeline of State Street's ETF servicing innovations



First ETF platform and service model to support the original domestic equity ETF.

1993

INNOVATION

IMPACT



The introduction of the ETF investment wrapper in the US served as the model for other markets and asset classes.

**First service model
to support global equity securities.**

1996

INNOVATION

IMPACT

Expanded the ETF investment wrapper to global equity securities, enabling clients to broaden the asset classes in their portfolios.

**First service
model to support
Hong Kong-domiciled ETFs.**

1999

INNOVATION

IMPACT

Expanded the ETF investment wrapper to the Hong Kong market, enabling clients to launch products to satisfy local demand.

**First service model to support
ETFs domiciled in Australia
and Luxembourg.**

2001

INNOVATION

IMPACT

Began offering the ETF investment wrapper
to the local Australia and Luxembourg markets.

First assisted trading process, allowing APs to use State Street as an agency-only broker/dealer to execute trades for restricted securities on their behalf.

2007

INNOVATION

IMPACT



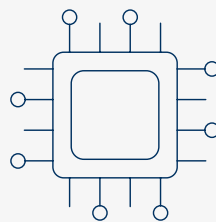
This eliminated the need for manual custom orders, creating straight-through processing automation for clients. The use of assisted trading replaced cash trades with in-kind trades, enhancing tax efficiency.

**Automated order entry for APs
of US-domiciled ETFs allowing for
up-to-date display, routing, approvals
and reporting across all parties.**

2008

INNOVATION

IMPACT



Automated workflows replaced the use of phone calls and faxes with a web-based platform and created electronic connectivity across the ETF ecosystem.

**First automated performance
and investment analytics service
that decomposes the NAV by breaking
down tracking errors into
specific components.**

2011

INNOVATION

IMPACT



This process was historically done via spreadsheets
and manual intervention by ETF sponsors.

First electronic primary market trading platform in the Canadian ETF market. Our Fund ConnectSM platform automates order entry for designated brokers.

2011

INNOVATION

IMPACT

Automated workflows replaced the use of phone calls and faxes with a web-based platform and created electronic connectivity across the ETF ecosystem.

**Used enhanced technology to redesign
and globalize our ETF Platform.**

2012

INNOVATION

IMPACT

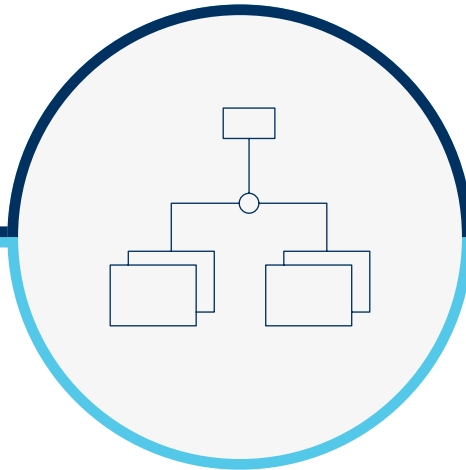
Our global platform created a consistent output and standardized operating model. Integration with core enterprise solutions reduced errors and improved turnaround times.

First master-feeder structure allowing clients to process create/redeem orders at the feeder level, and process and directly settle in-kind activity to the master account.

2012

INNOVATION

IMPACT



Enabled clients to leverage the economies of scale of the master-feeder structure within the ETF investment wrapper.

First electronic primary market trading platform in Asia Pacific.
Our Fund ConnectSM platform automates order entry for participating dealers of Hong Kong-domiciled ETFs.

2013

INNOVATION

IMPACT

This replaced the use of phone calls and faxes with a web-based platform and created electronic connectivity across the ETF ecosystem.

Expanded the ETF basket client view to our SpringboardSM iPad app.

2013

INNOVATION

IMPACT

Enabled clients to review and approve baskets on their mobile devices, as opposed to using a desktop to access the ETF Dashboard via my.statestreet.com.

First multi-client electronic primary market trading platform in the European ETF market. Fund ConnectSM automates creation/redemption order entry of European-domiciled ETFs.

2014

INNOVATION

IMPACT

Replaced the use of phone calls and faxes with a web-based platform and created electronic connectivity across the ETF ecosystem.

Worked with the depository and regulators to develop operating models that support each of the semi-transparent actively-managed ETF structures for a turnkey solution for our clients.

2014

INNOVATION

IMPACT

Invited to develop and present an operating model for semi-transparent ETF structures to the DTCC and SEC. This included Precidian ActiveShares[®], T. Rowe Price, Fidelity and Natixis / NYSE structures.

**Key player in the development
of the ICSD settlement model
for ETFs in Europe.**

2014

INNOVATION

IMPACT

A centralized model to settle ETF shares in the European market
reduced fragmentation and settlement failures.

Introduced a cash-in-lieu trading service allowing fund sponsors to use State Street to execute cash-in-lieu trades and foreign exchanges in restricted markets.

2015

INNOVATION

IMPACT

This service decreased operational risk for the fund sponsor and improved execution.

**Created a OTC Delivery Versus
Payment dealing model
for European ETFs.**

2015

INNOVATION

IMPACT

Increased the ability to settle ETF shares on T+1 basis
independently of the underlying basket.

**Developed a currency hedge
share-class model for ETFs
in Europe.**

2015

INNOVATION

IMPACT

Allowed clients to launch multiple currency hedge versions of the same sub-fund, thereby reducing costs and timelines for new launches.

**First service model for
the NextShares® semi-transparent
exchange-traded managed fund structure.**

2016

INNOVATION

IMPACT



Supported Eaton Vance in launching the first semi-transparent exchange-traded product in the US marketplace. Worked with the client, exchange and AP to ensure the operating model worked for all constituents.

First end-to-end solution for processing and settlement of fixed-income ETF basket by integrating Fund ConnectSM and our global ETF platform with Bloomberg's BKST<GO> fixed-income ETF basket tool.

2016

INNOVATION

IMPACT



This integrated solution created an efficient, automated process for negotiated orders.

Received executive committee approval to provide administrative services to digital currency ETFs.

2017

INNOVATION

IMPACT

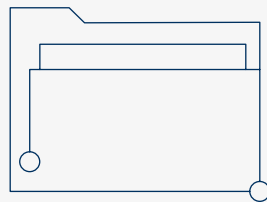
Hired by the Winklevoss ETF Trust to service bitcoin ETF.
Received approval to serve as administrator for the digital currency ETF.

Introduced the Basket Modeling Application (BMA) to assist ETF managers with the creation of portfolio composition files and the publication of trade-date holdings.

2018

INNOVATION

IMPACT



Developed a tool to create automated basket files for our ETF sponsor clients, as well as a trade-date holdings file to meet their regulatory requirements to publish specific information on their websites.

About State Street Corporation

State Street Corporation (NYSE: STT) is one of the world's leading providers of financial services to institutional investors, including investment servicing, investment management and investment research and trading. With \$32,754 billion in assets under custody and administration and \$2,918 billion* in assets under management as of June 30, 2019, State Street operates globally in more than 100 geographic markets and employs approximately 40,000 worldwide. For more information, visit State Street's website at www.statestreet.com.

*Assets under management include the assets of the SPDR® Gold ETF and the SPDR® Long Dollar Gold Trust ETF (approximately \$36 billion as of June 30, 2019), for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) serves as marketing agent; SSGA FD and State Street Global Advisors are affiliated.

For more information, please visit www.statestreet.com/etfservicing

For more information, please contact:



Ciarán Fitzpatrick

Head of ETF Servicing, Europe
+3 531 776 6089
ciaran.fitzpatrick@statestreet.com



Frank Koudelka

Global ETF Product Specialist
+1 617 662 4749
francis.koudelka@statestreet.com

STATE STREET®

State Street Corporation
State Street Financial Center
One Lincoln Street
Boston, Massachusetts
+1 617 786 3000

statestreet.com

©2019 State Street Corporation
All Rights Reserved
2723299.1.1.GBL.RTL
Expiration date: 9/30/2020

The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor. All material has been obtained from sources believed to be reliable. There is no representation or warranty as to the accuracy of the information and State Street shall have no liability for decisions based on such information.

The whole or any part of this work may not be reproduced, copied or transmitted or any of its contents disclosed to third parties without State Street's express written consent.



STATE STREET®