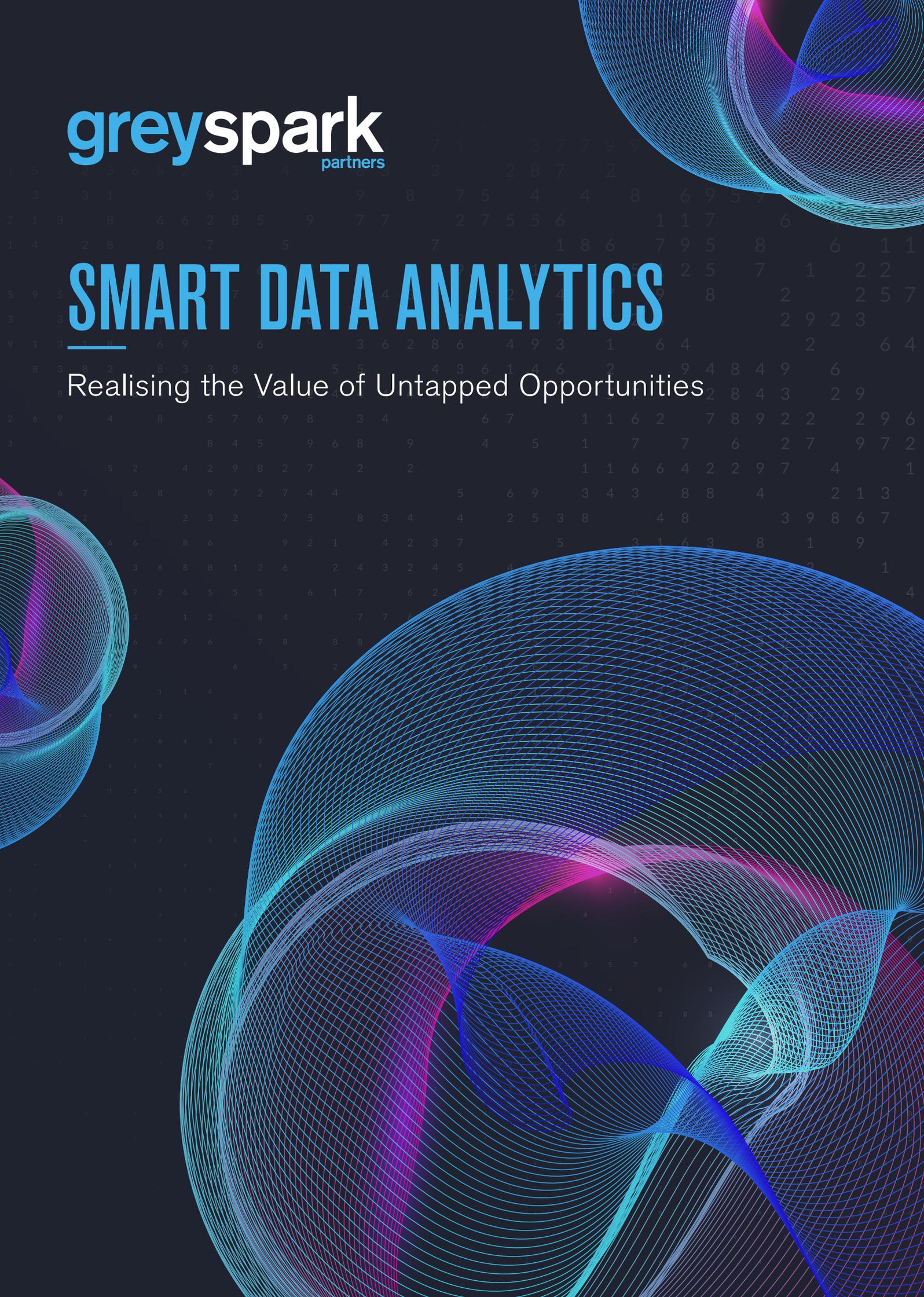


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SMART DATA ANALYTICS

Realising the Value of Untapped Opportunities



Smart Data Analytics: Realising the Value of Untapped Opportunities

In 2019, the global financial services industry is set to spend an estimated USD 50bn on the raw, historical markets and transactions data inputs required to fuel a broad spectrum of daily trading activities across all major asset classes, according to analysis produced by global capital markets consultancy GreySpark Partners of market data products and services provider revenues and corresponding buy-side and sell-side technology costs.

This estimated level of spending on the externally-sourced data inputs sold to asset managers and investment banks, for example, by exchange groups, inter-dealer brokers and specialist vendors such as Bloomberg, FactSet and Refinitiv comes at a precarious time for the industry at-large.

At issue is the growing electrification of cash equities, fixed income and currencies (FIC) markets and the availability – or lack thereof – of the granular, real-time intelligence required to support meaningful, daily decision-making processes and workflows across a range of front-, middle- and back-office functions.

GreySpark believes that these types of real-time intelligence data inputs – otherwise known as Smart Data – are set to become more important from a client performance analytics and competitive differentiation value creation perspective to sell-side, buy-side, custodian, brokerage trading venue, electronic communications network operator, regulatory and central banking institution markets participants over the medium-to-long-term.

However, in order for the realisation of the value associated with those Smart Data outputs to appear for analysis and decision-making purposes, equities and FIC market participants must first undo decades of legacy, siloed data capture, management and storage architecture that will no longer be fit-for-purpose in the algorithmic trading-centric, quantitative business and trading models of the future.

Defining the Problem: Transitioning from Data to Smart Data Analytics for Trade Execution Purposes

Smart Data differentiates from so-called Big Data in that it is information that was cleansed, filtered and derived from Big Datasets for consumption by individuals requiring the application of context to massive amounts of unstructured and structured inputs and outputs.

In the financial services industry, broadly, Smart Data outputs differentiate from the raw, proprietary or externally-sourced market and transactions data held within data siloes in that it is curated information, transformed by specialist analytics solutions, that creates opportunities for individual equities or FIC markets portfolio managers and traders to garner a fuller understanding of:

- what has occurred through the course of daily equities and FIC trading activities;
- why it occurred; and, crucially
- what will likely happen next.

Drilling down to the level of Tier I to Tier III investment banks, specifically, Smart Data outputs are typically created through the combination of firm-specific, client-proprietary, historical order and pricing data with externally-sourced, raw markets and transactions data. Often, those externally-sourced markets and transactions data inputs are sourced not only from exchanges, inter-dealer brokerage houses or specialist vendors, but also from other bank broker-dealer counterparties as well as from niche brokerage trading venue operators.

As such, in order to de-silo this wealth of information for real-time intelligence analytics purposes, banks now make wider use of either proprietary or open application programming interfaces (APIs) to allow both front-office sales-trading personnel as well as their clients to facilitate the construction of cross-asset or multi-asset equities and FIC business and trading models. In doing so, new economies of scale can rapidly be realised that allow both broker-dealers and their buy-side clients to zero-in on their niche agency market-making or proprietary trading capabilities, thus accentuating the value of the personal relationship elements of the broker / client services paradigm.

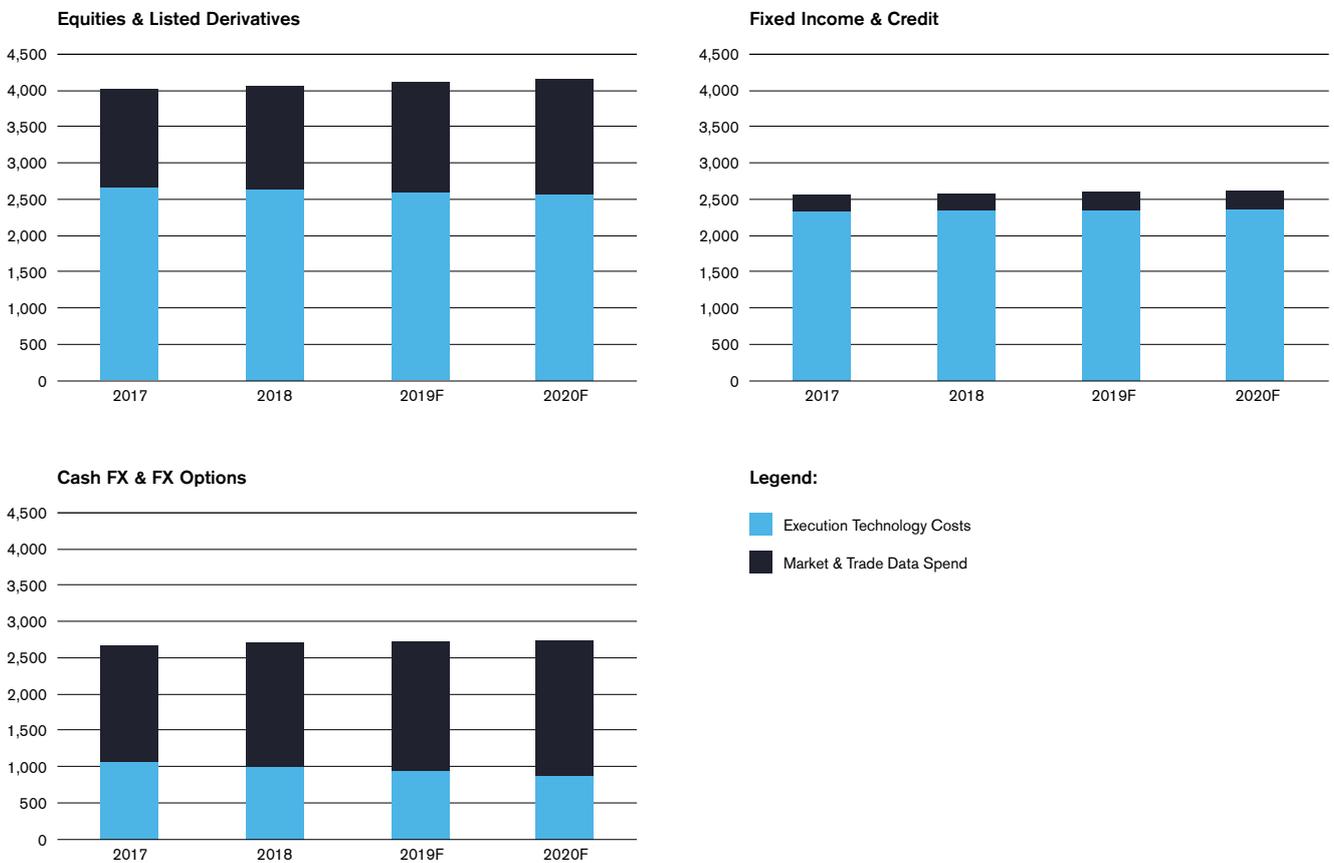
In this regard, the majority of investment banks are observed as commonly understanding that all of their institution's data inputs or outputs – no matter how siloed they may be – must be viewed as an asset that requires continual curation and maintenance over time in order to avoid rapid levels of degradation and depreciation. Despite this commonly-held view, a June 2019 GreySpark poll of 15 Tier I and Tier II corporate and investment banks (CIB) found that data asset management and value creation remain under-developed as business functions across the majority of the industry.

The costs, therein, for investment banks in not maintaining and managing all available markets and transactions data inputs and outputs for equities and FIC trading purposes are impossible to fully quantify. Suffice it to say, the continued use of in-house built, monolithic data management infrastructure logically results in the creation of technology debt and undemocratised data consumption and analytics outputs that invariably stifle the effectiveness of algorithmic, equities and FIC market-making and trading activities.

In 2019 and through to the end of 2020, those market and transaction data management costs – when assessed on a per asset class basis versus the technology costs associated with utilising the data for trade execution purposes – across the main of the financial markets and services industry are seemingly huge (see [Figure 1](#)). For example, Tier I to Tier III CIB spend on execution-linked data products and services for cash equities and FIC trading sold by **exchange groups, inter-dealer brokers and specialist market data vendors** grew to and will continue to expand by 5% year-on-year through to the end of 2020.

Figure 1: Tier I to Tier III CIB Market & Trade Data Spend vs. Execution Technology Costs, 2017 to 2020F (USD bn)

Source: GreySpark analysis



That 5% year-on-year growth in market and trade data spending across all three asset classes – which is expected to remain constant through to the end of 2020 – is differentiated in terms of its overall value on an asset class-by-asset class basis when accounting for the observed 1% decline in Tier I to Tier III CIB execution technology costs between 2017 and 2018.

For example, in Tier I to Tier III CIB cash equities and FX trading – where market structure homogenisation, post-financial crisis regulatory costs adaptation, the emergence of in-house built open API technology stack architecture and the increasingly standardised functional capabilities of vendor-provided order and execution management systems technology are key contributors to execution technology cost reductions over time – the Smart Data and Smart Data analytics applications use case is clear.

Specifically:

- **Creating an Actionable, Real-time Overview** – Tier I to Tier III CIBs typically use different trading platforms and systems on a desk-by-desk, region-by-region basis, making it difficult for sales-traders to pull all the data consumed by all relevant systems together in a meaningful fashion such that they can then act on client order or trade crossing or pricing opportunities in a more informed, real time or near-real time fashion.
- **Evidence-based Decision-making within an Agency Trading Business Model** – Tier I to Tier III CIB cash equities and cash FX market and trade data spend fell from pre-crisis historic heights to settle in 2017 at roughly 30% to 40% of total annual spend on execution technology. And while the majority of institutions in each tier still provide a global buy-side client base with access to the historic pricing data, liquidity and market-making services required to facilitate agency trading, the profitability of their trading franchises are nonetheless increasingly undercut by a raft of new, non-bank liquidity providers utilising the same algorithmic trading business models originally pioneered within the CIB arena to arb both bank and non-bank competitor pricing on a tick-by-tick basis. As such, the use of Smart Data and Smart Data analytics toolkits by CIB trading desks to provide their buy-side clients with optimised data insights creates competitive advantage through its ability to derive client type- and market conditions-specific insights that can be used to directly inform evidence-based, block size trade or transaction decision-making on an order-by-order basis.
- **Market & Transactions Data Spend** – Equates to roughly 10% – or USD 200mn to USD 250mn – of annual, total execution technology costs. However, those figures belie a much larger universe of bonds and swaps client and counterparty pricing inputs than those derived from the three types of market data vendor providers. For example, vast siloes of historical bilateral pricing, spreads and order hit rates data exist within any Tier I to Tier III bank's bonds, swaps and structured products trading business at regional level, and then more granularly at a per desk and, often times, per trader level. As such, it is probable that the total spend on market and transactions data for fixed income trading is considerably higher than GreySpark's forecast due to the opex ITO costs associated with the maintenance and continual normalisation and standardisation of all of the inputs and outputs utilised in portfolios and trading models on a daily basis.
- **A Data Scientist & A Deal-maker** – In fixed income trading activities specifically, Tier I to Tier III CIB fixed income traders are increasingly called upon to generate competitive differentiation for the institution amidst a sustained period of low benchmark interest rates and shrinking, post-financial crisis balance sheets through the dynamic use of all of the client and market information available to them. As such, the requisite skillset has evolved to include API coding and data science credentials that are difficult for individual traders to obtain and which are difficult for CIBs to build business and trading model economies of scale around in the absence of a consolidated, front-office wide set of data strategy objectives.

In fixed income and credit trading, the Smart Data and Smart Data analytics value-add narrative is more complex. **Specifically:**

- **Execution Technology Costs** – Remain low in 2019 at approximately USD 2.3bn per year across Tier I to Tier III CIBs globally. However, rather than declining at 1% year-on-year in line with cash equities and cash FX technology costs, fixed income execution technology is forecast to grow by 1% annually as Tier I CIBs reach the end of a long-running de-equipment cycle favouring in-house built client and markets connectivity over vendor-provided technology. Meanwhile, Tier II and Tier III CIB fixed income trading technology spending is set to grow out to the end of 2020 as the adoption of new vendor solutions designed to ease the rapid acquisition of market-making share in axed / on-the-run corporate and government issuances and their corresponding rates and swaps instruments grows at pace.

Herein, the case for Smart Data and Smart Data analytics solutions emerges in the form of applications that serve to mask the complexity of the myriad of fixed income trading desk- or individual trader-level data siloes, client and markets connectivity infrastructure, and pricing and execution engines through which vital information passes into a single screen that, in concert with an order management system, can be used – for example – to inform and prioritise client liquidity provision, block-size order price formation or markets aggregation.

Assessing the Solution: The Monetisation of Data Assets

GreySpark believes that the inclusion of Smart Data analytics capabilities into the institution-wide data strategy equation can create new opportunities over time to not only offset the depreciation of data assets, but also to drive the uptake of cultural understanding that Smart Data is an investment class in and of itself – one that is capable of creating distinct markers as to how ITO expenditure on overall data quality maintenance can act as an engine for commercial growth.

For CIBs and custodian banks, those markers include technology cost reduction benefits expressed in the form of:

- **Componentisation, Modularity & Open API Architecture** – The adoption of a Smart Data-centric business, trading and risk management front-office model creates new opportunities to further break down and de-silo historical, monolithic data management ITO infrastructure into more basic building blocks that can be containerised, easily templated into user-friendly programming languages such as Angular or React, and more rapidly deployed via microservices for the benefit of client-facing, BPO purposes.
- **Data Normalisation** – Smart Data-centric front-office business models incentivise banks to normalise and standardise externally-sourced market and transactions data feeds from brokers, clients and exchanges into structured formats such as FIX that are more easily and rapidly translated into upstream and downstream systems for pre-trade risk management and post-trade reconciliation purposes.
- **Buy & Build Analytics** – At an individual trader level, Smart Data toolkits levy little or no marginal cost once they are properly embedded within desk-level day-to-day operations, mandating only BPO headcount and compute power in order to grow incrementally in sophistication over time.

For buy-side firms, Smart Data-centric front- and middle-office business and trading model benefits can include:

- **Dependencies Reductions** – Smart Data analytics capabilities incentive small-to-medium size by AuM buy-side firms to break the cycle of dependence on investment banks or prime brokers to provide them with market and trade data feeds by instead developing the in-house data management capabilities needed to draw those feeds directly from all relevant brokerage venues or exchanges as opposed only those platforms that they typically transact on.

“If the business has the knowledge to execute just two pips better, then doing so versus not doing so could mean the difference between saving or losing USD hundreds of millions in execution costs...”

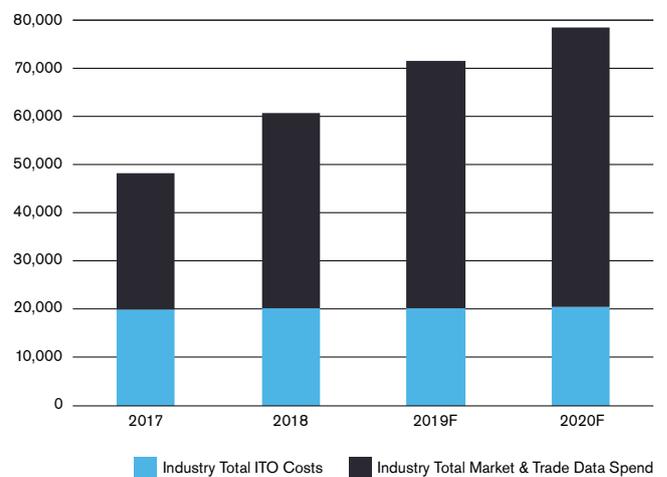
- Lowering of Market & Transactions Data Total Cost of Ownership** – In an environment in which price formulation typically revolves around the formation of indicative quotes rather than firm prices, a Smart Data business model maximises the value that can be extracted from consumption of market and transactions data by ensuring that opportunities to generate revenue on an order-by-order or trade-by-trade basis are not missed due to individual trader bias.
- Offsetting of Risk Concentration** – Rather than relying on a select group of banks and hedge funds to supply them with the pricing needed to transact in FIC markets specifically, asset managers can utilise Smart Data as a means of becoming price makers in their own right, thus offsetting the risks associated with the maintenance of only a handful of trusted counterparty relationships to always be there to supply the other side of a bid / ask spread in an increasingly fragmented liquidity landscape.

Assuming that market data costs will continue to consume a greater percentage of overall ITO spend within the trading business over time, and that the volume of both markets and transactions data consumption will grow in lockstep with those costs, then the cultural implications for any trading franchise associated with the analytical and technological capability to act intelligently on that data in real time becomes palpable (see [Figure 2](#)).

Specifically: If the business has the knowledge at hand to execute just two pips better on an order-by-order or trade-by-trade basis, then doing so versus not doing so could mean the difference between saving or losing USD hundreds of millions in execution costs for both the trading franchise and its clients.

Figure 2: Total Global Buyside & Sellside ITO Cost vs. Markets & Transactions Data Spend, 2017 to 2020F (USD bn)

Source: GreySpark analysis



ABOUT MOSAIC SMART DATA

Our vision is to empower financial market professionals with usable, data-driven tools to ask the questions they need answered and to receive those results in a language they can understand. Mosaic Smart Data understands that the true value of data comes not only from the intrinsic individual data streams themselves, but also from the correlations and inferences that can be drawn from the aggregated data from each client. We call this Smart Data.

Smart Data surfaces to the user exactly the right insights at the right time through an intuitive and human centred design. All the user has to do is make the judgement call about how to action them. With Smart Data, machines are no longer just tools but instead an enabler for a collaborative process between the machine and human ingenuity to deliver extraordinary performance.

This is the logical next step of engaging with data that previously has been challenging to access and even more challenging to make coherent. Through our flagship MSX platform, Mosaic Smart Data provides real-time FICC data aggregation, normalisation and powerful data analytics fuelled by machine learning. The platform delivers actionable insights onto FICC professionals' desks via a visually striking and intuitive dashboard.

For more information, please visit: mosaicsmartdata.com



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EXPERTS IN CAPITAL MARKETS — STRATEGY. DELIVERY. TECHNOLOGY.

GreySpark is a capital markets business, management and technology consultancy that specialises in mission-critical areas of the industry. We assist our clients throughout business and project lifecycles, from inception to completion, offering services in:

- Business Strategy and Operations
- Project and Programme Delivery
- Technology

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