

## Consolidated Tape, Market Data Reform

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We strongly recommend prior to selecting and authorizing Consolidated Tape (CT) Providers, that the European Securities and Markets Authority (ESMA) have an appropriate funding model and performance bounding parameters included in its technical standards and guidelines. If omitted, there is no incentive to identify flaws and improvements upon the design of CT. Vendors would do the bare minimum at the lowest possible cost to maximize profit. It is like ‘building a plane in flight,’ i.e., disastrous. So, let’s identify the critical success factors for the development of CT.

### 1. What constitutes as a data Licensing framework on a ‘reasonable commercial basis’?

A licensing framework “based on costs incurred to provide the data” only leads to endless arguments (see the different perspectives from [IEX](#), [NASDAQ](#), and [others](#)). Inequity cannot be measured by accounting costs. For example, would fund companies need to assert their physical ownership of self-generated fund and trade data by restricting the data vendor from reselling their own data before they send the data? *“Case at point would be fund data given today for free to Morningstar, except in Denmark where Morningstar is paying today the local industry owned Fund Connect platform for getting the DK fund data.”* Market reform should be about the divergence between private and [social costs](#).

For-profit exchanges or integrated conglomerates are operating a “Jukebox model” to extract rent, hurting all, but mostly the smaller players. Policy makers should consider Exchanges, Approved Publication Authorities (APAs), Multilateral Trading Facilities (MTFs), Systematic Internalisers (SIs), Single Dealer Platforms (SDPs) as different streaming platforms to have the right focus for CT.

### 2. WHO OWNS THE DATA – muddle through the intricacies and learning from the music industry

WHO OWNS THE DATA? Should market participants be compensated when aggregators sell market data? While every market participant negotiates to be more equal for lower fees, higher rebates, more incentives, and other privileges, who dictates the outcome? How are conflicts addressed? What is considered as unreasonable, unfair and/or discriminatory? When accessing the [Values of Composing Trades](#) to determine who gets what, has anyone forgotten that the traders and algorithm developers are indeed the composers deserving the most credit?

Replicating the revenue sharing model of Securities Information Processor (SIP) in the US is flawed. Market data, BestEx disclosure, access fee rebate, payment for order flow (PFOF), and other market structure issues are all intertwined. [Schwab’s empirical evidence](#) proves that “Order routing revenue and price improvement are NOT zero-sum”. The nomenclature of rebate incentives serves as royalty payments for the use of others’ copyrighted material.

The Music Industry’s licensing framework has been proven successful. It has over a half century of litigations experience to align rights and obligations globally. We have learned that, when one is not required to pay for the use of others’ intellectual property, streamers exploit the content creators with rent seeking behaviours and/or selectively paying rebates and other perks to the elites. Therefore, trading venues and APAs should bear royalties payments and earn appropriate subscription fees to cover their cost. Nevertheless, the [Facebook case](#) affirmed that data should be owned by “content creators” instead of the streaming platforms. Therefore, we strongly suggest that ESMA revisit the definition of Market Data Contributors (MDCs) when considering a revenue-sharing scheme for CT.

There are many relevant use-cases to learn from the Music Industry (e.g., licensing terms for direct usage, allowing the re-use of contents, and derivative works). It helped music reach a wider audience and grow the overall pie. See [point 3](#) for a high-level description and [ANNEX 1](#) for a visual description of how the Music industry’s Copyright Licensing Mechanism can hypothetically apply to our capital markets.

### 3. Our suggestions – Copyright Licensing Mechanism

We picture traders as performance artists; algorithm developers (including the risk control professionals) as musicians, composers, and sound engineers producing songs; then their respective financial institutions as record label companies. Using the prevailing rates in the music industry as a hypothetical case study, 50% of performance royalty is allocated to the “publishers”, 45% is allocated to the “featured artists”, and 5% is allocated to the non-featured supporting team.

There are upsides for the HUNTER type of firms (i.e., Performance Optimizers, Asset Gathering firms). They can help reduce the number of [unknown unknowns](#) in the markets, create better algorithms and more “hit songs” that deepen market liquidity. Equally, there will be opportunities for the FARMER type of firms (i.e., Asset Maximisers, Retailers, Wealth Advisory). To grow their AUM and improve profitability (e.g., by off-loading some of the traders and algo developers’ costs to be paid for by the royalty’s system, aggregating and attracting new investors).

There are upsides for the traders and algo developers to earn more. For example, if they are willing to do more than 12 to 20 “songs” a year and/or create one or more “hit song(s)” that deepen market liquidity, and/or identify trade irregularities, etc. At the same time, entitlement of royalties must accompany the burden of potential liability, if trade activity is market manipulation and/or trading violations. Copyright Licensing mechanism provides excellent traceability (no more scapegoats) by aligning rights with obligations.

Agency trading, retail brokerage, order routers or other non-algorithm market participants to some extents are functions like the “non-featured” musicians or “DJ mixing engineers”. They typically earn the 5% in the music industry, and the remaining 95% would be a “pass-through” payment to the original “content” creators. In an example of 20 days’ trade/order sequence per month; the equivalent to twenty songs; and a retail broker might keep 5% of the royalty. The retail broker would have discretion to determine how the remaining 95% “pass-through” would be allocated. For example: (i) fee/ commission waiver; (ii) designate the restricted fund to investor education programs; (iii) rebate directly back to the end investors, etc. Different retail brokers can have different reward programs – by quotes / trades contribution, different rate for different classes of liquid or illiquid securities, etc. Terms and conditions of rewards, fee waivers, and/or investor education programs must be fully disclosed and be subjected to audit to ensure no retention of the “pass-through” money by the retail broker. A rule of thumb under this hypothetical model is: 5% performance royalty for each layer of data aggregation.

### 4. Governance of WHAT GETS PAID and WHO GETS WHAT

The setup would require an organization like the SoundExchange, in the music industry, as an administrator of rights and royalties. This administrator can be a non-profit governed by the industry.

If we picture the ‘index providers’, benchmark or ‘model portfolio providers’, pricing services or Credit Rating Agency (CRA) as either ‘Algo Publishing’ (artists) or ‘DJ Mixing Engineers’ (aggregate and push upstream), it is not hard to see that their “derivative works” may or may not have significant difference from the original “songs” or trade strategies (45% versus 5%). So, the deterministic factor is whether these CRAs, Benchmark Indices firms are artistic enough to “create” original “contents” that are uniquely different from the underlying securities and the rivalries.

Firms may be allowed to keep their algorithms secretive and opt-out of royalty payments. However, they would be missing out on opportunities compared to their peers and gradually convert. Algorithms are part of our world. The race between reverse engineering of others’ algos and preserving confidentiality is inevitable. Nevertheless, if one can trust the “Cloud” for trade reporting, there is no reason to oppose the enforcement of copyrights for their artistic composition of trades.

Using live or historical data to run test systems or other applications is a commercial matter rather than “derivative works” in our eyes. 15-minute delayed data is FREE in the EU per traditional exchange practice. Alternatively, one can choose to use CT or PP, which we recommend using 4-Part test for objective rate setting (see [point 5](#)).

### 5. Objective rate setting based on 4-Part test rather than regulatory price control

We advocate for a “4-part test” that taken directly from the music industry’s copyright laws. “4-Part Test” deems an agreeable principle universally – (1) willing seller willing buyer standard; (2) same parties’ test; (3) “effective competition”

test; and (4) same rights test. It is time-tested and simple enough to be used by the Music Industry. What get paid and who get what should NOT be dictated by regulators NOR by a small group of people in a “governance committee” (see [this](#)). We see the SEC’s [CT-Plan](#) and [other related proposals](#) in the US as problematic.

## 6. “Professionals” versus the “non-Professionals” and Investor Protection

One may ask the question whether simple data (prices, rating, index values, reference data, etc.) would or would not be protected by copyright. See last paragraph of [point 3](#) regarding retail agency trading and “pass-through” royalty payment.

It is noteworthy that those who play only a few single notes (e.g., ‘do’, ‘ra’, ‘me’) are not entitled to copyright royalty. Those able to compose a full song (meaningful sequences of a series of notes) are compensated. The music industry’s rationale for not allowing anyone to claim copyright over a few single notes is that they do not want someone claiming exclusive right over, e.g., ‘do’, ‘ra’, ‘me’ and preclude the broader composer community to use these basic notes for creative works. Similar logic should apply to our capital markets. If someone is only able to play a few “music notes” (individual orders) rather than compose a complete “song” (trade algo), then it is our opinion that they deserve the appropriate investor protection. Regulators may then better draw the line in distinguishing between the “Professionals” versus the “non-Professionals” (retail, average investors).

## 7. Additional benefits of harmonizing across trading venues and better disclosure

Think about what gives rise to arbitrage or pick off pricing. Anyone would do it if they did not have to bear the corresponding cost in using others’ copyrighted materials. Bilateral or multilateral trading facilities have the upper hand in terms of nimbleness to manoeuvre around in crafting niches than public stock exchanges. So, the proper way to “harmonize” across trading venues is:

On-Exchange would be treated as non-interactive streaming platforms. Off-Exchange platforms would be required to have a ‘catalogue’ to operate their interactive streaming platforms. By shining light on the MTFs and SIs, it allows bargaining on which type of trading venue should have what capabilities to maximize overall reach and efficiency for the collective markets (just as music reached a wider audience).

Trading venues and APAs should bear royalty payments and earn appropriate subscription fees to cover their costs. Engaging in non-productive fights only destroys value. By putting a value on quote and trade composition, proper considerations will be given to eliminate conflicts of interest. It will also ensure efficiency in deployment of resources. Market forces will determine the optimal subscription/ access fees by the different venues.

### Additional Remarks

Enhancing post-trade transparency is ONLY the first step towards the ([esma70-156-4305](#)) original aspirations – *“MiFID II/MiFIR introduced provisions to ensure that market data is available to market participants in an easily Accessible, Fair and Non-Discriminatory manner, to DECREASE the Average COST of the market data and to make data Available to a WIDER range of market participants”*. The pursuit of a pre-trade tape should continue because latency gaps would determine how big a difference is in the demand of the CT. Requiring *“transmitting or releasing data no sooner than to a CT”* only describes one of the aspects of ‘Fair, Reasonable and Not unreasonably Discriminatory’ (FRAND). ESMA has full authority to mandate proper [SECURITY](#) protection over both CT and trading venues’ PPs. Requiring SYNCHRONIZATION of both CT and PP in accordance with an Atomic Clock and prohibits the circumvention of SECURITY measures. It eliminates the problem of where the CT data centre is located (Frankfurt, Zurich, Stockholm, Madrid, Bergamo).

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By [Kelvin To](#), Founder and President of Data Boiler Technologies

At Data Boiler, we see big to continuously boil down the essential improvements that fit for your purpose. Between my patented inventions and the wealth of experience of my partner, Peter Martyn, we are about finding rare but high-impact values in controversial matters, straight talk of control flaws, leading innovation and change, creation of viable paths toward sustainable development and economic growth.



We see big to continuously boil down the essential improvements until you achieve sustainable growth!

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### ANNEX 1

## Copyright Licensing Mechanism

### Realign according to 4Vs

~ \$4.5 billion a year in market data and connectivity for US equity and options + \$2.5 billion in [access fee rebate](#) + \$3.6 billion in [payment for order flow](#) = over \$10.6 billion. Realign for more effective and Efficient use – i.e., ↑ # of diversified market participants, ↓ unknowns, weed out any conflicts, fund investor education, and enrichment programs, partially off-loading cost, promoting FRAND.



Enable real-time risk control, auto-detect irregular activities + early warnings to modernize CAT's outdated design.

### Rate set by Free Market

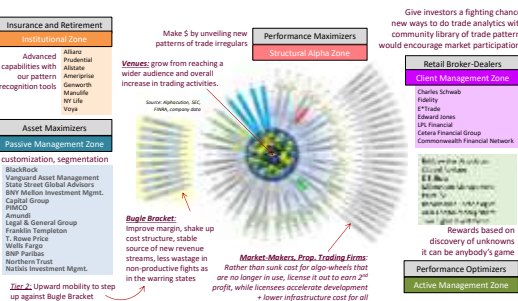
**Mechanical Royalty**  
Obtain algo license to accelerate own development, new use case (treasure hunt others' trash)

**Algorithms**  
80% of algo-wheel no longer generate Alpha & become sunk cost, license out unused algo. to earn 2nd profit

**Discovery and reduce unknowns make markets safer!**  
(98% → 99.9% incremental improvement is better than 85% → 90% because it is 95% error reductions vs just 33%)

**Veracity ↑**  
↓ MEME/irrational exuberance, deter insurgent/adversaries, contribute to price discovery.

**Varieties ↑**  
Decentralize → more resilient, mass customization, better reach, field knowledge, equips next-gen investors, sustainable.



50%

**Performance Royalty in replacements of today's incentives**

**Broker-Dealers "Publishers"**

**Velocity**  
Time-lock Encryption (TLE) to make market data available securely in synchronized time.

**Consolidated Tape and Self-Aggregators**

**Proprietary data feeds**

**Exchanges**  
→ Online radios or cable TVs, timeless classics, big liquidity pool big royalty burden

**Immunity up to certain limit**  
Passive distributors actively curate, moderate contents

4 Part-Test

- Willing seller willing buyer standard [75 FR 3597](#)
- Same parties
- Same rights
- Effective competition

**No change to today's pay**

**Order Flow**

**Volume ↑**  
(1) Fairness ↑ # of participants  
(2) ↓ unknowns ↑ transparency  
(3) New econ opportunities spur by innovations/ patented tech.

**MTFs Dark Pools**  
→ Disney+ as an analogy for an established Bulge Bracket that also owns an MTFs (Netflix)

**Sis Wholesalers**  
→ The broader the "catalogue", the platform would pay a wider range of BDs artists in royalties.

Discretion of different agents to allocate (w/ require disclosure)

**DJ Mixing Engineers**  
**Agency trading, Retail, Order router**  
NOT liable unless in cahoots / known, of manipulative attempt.

**Original "content" creators/ retail investors for quotes contribution**

**Investor education enrichment programs**  
Restricted purposes, Periodic audits

Rate NOT set by any one group or regulator.

5%

**Bonus Pool**

**Non-Featured**  
**Supporting Team employed by publishers**

**Order Flow**

**Trade Match**

**MTFs Dark Pools**

**Immunity up to certain limit**

Healthy markets need both farmers and hunters.

**Value Chain**  
• Performance Optimizers  
• Asset Gathering  
• Intermediaries  
• Asset Maximisers  
• Retail and Client Services

**Featured Artists**  
**Algo Publishing Index Benchmark**

**Record Trade/ Order Sequence**

**12-20 Algo or "Songs" per annum**

**SDPs**  
→ Single Dealer Platforms/ Comm. Protocols; niche(s) may incl. profane content (Showtime)

**Interactive**

The Fastest Avg. Speed

**Royalty cover 50% + unlimited upside**  
Partially off-loading BDs cost to be paid for by the mechanism.

**Base pay 50% of today's total package**

**20 Days' trade/ order sequence per month**

**Share liabilities w/ Publishers if caused market chaos/ manipulation.**

**Catalogue to disclose served segment(s)**  
Whose order-flow typically stream on the platform.

**Rights Obligations Pass through Liabilities**

Give average investors a fighting chance!



TLE protects data from being decrypted prematurely.

The Fastest Avg. Speed



Accelerate process speed, savings from compression Optimize contents' richness, balance diverse interests.



Accelerate learning-curve: trade pattern recognition for every investor would enable the crowd to trade competitively.

**Pareto Improvement**  
Market efficiency gain

Different "streamers" based on who they want to serve, how many subscriptions they are going to get and determine whether to carry a broader or narrower "catalogue", which align and address the economic viability of a constituent to exploit its economy of scope and/or economy of scale, hence weed out potential conflicts

