

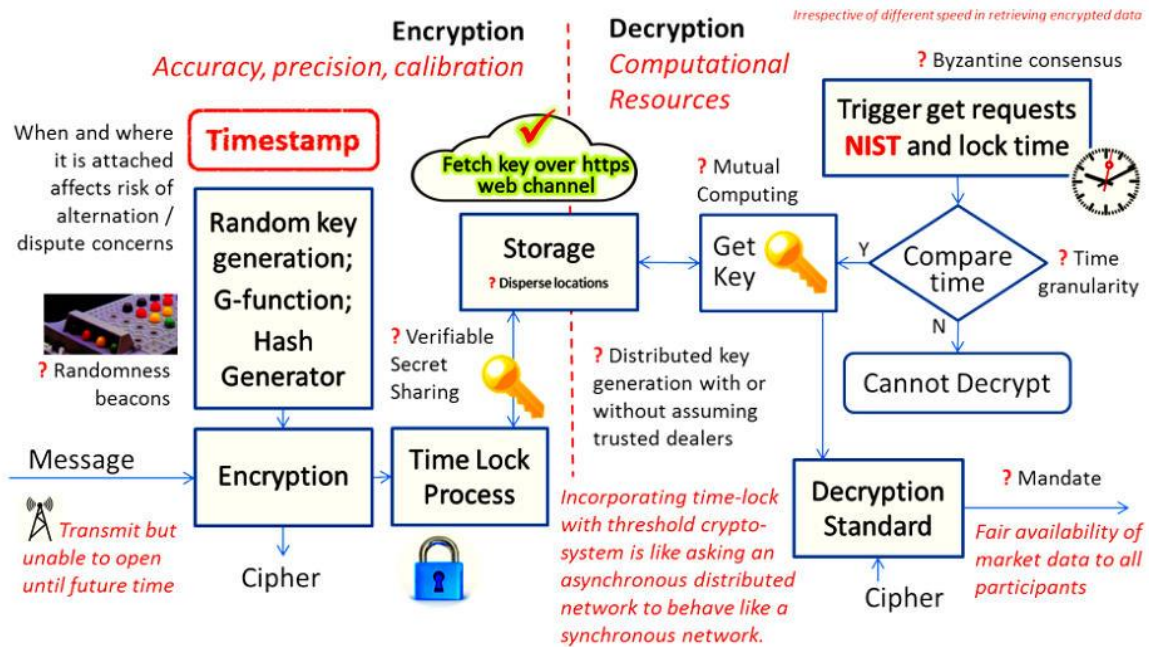


Innovations to propel market data reform and promote market integrity

We feel blessed about the resiliency of our marketplaces amid the Coronavirus lock-down. Yet, the old NMS plan [over emphasized speed as a key to trading success](#). Its inadvertent consequences (e.g. [access fee rebate](#) controversy, the alleged [unfairness](#) issue, [plateauing of cost reduction](#), etc.) have reached a critical point, where the ecosystem's equilibrium must shift again.

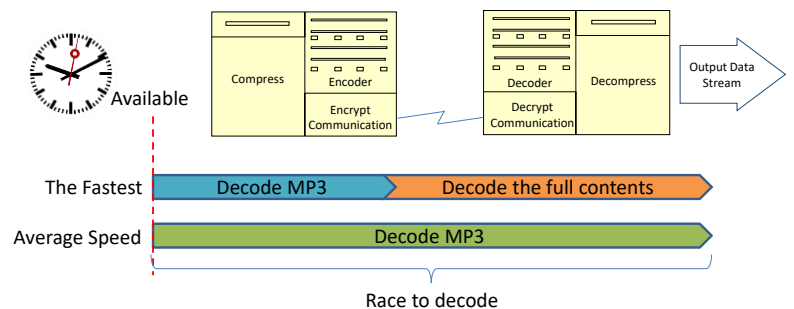
Our recommendations include:

- Instead of “disseminate” market data should be “[Available Securely in Synchronized Time](#)” using time-lock encryption. Hence Rule 603 needs to be appropriately updated to protect cybersecurity of real-time market data. Our capital markets needs to be a better standard than the online gaming industry! Rest assured that **time-lock is not another speed bump**.



- Mandate connectivity disparity ratio < 2.5 times and give SIP the fastest connection in order to ensure [core data evolves along broader ecosystem](#). This is to avoid a scenario where the latency gap is too large or overly frequent upgrades by SROs cause increases in connectivity costs. Although the fastest speed may be one of the available options in the price list, it may not be affordable by many Broker-Dealers.

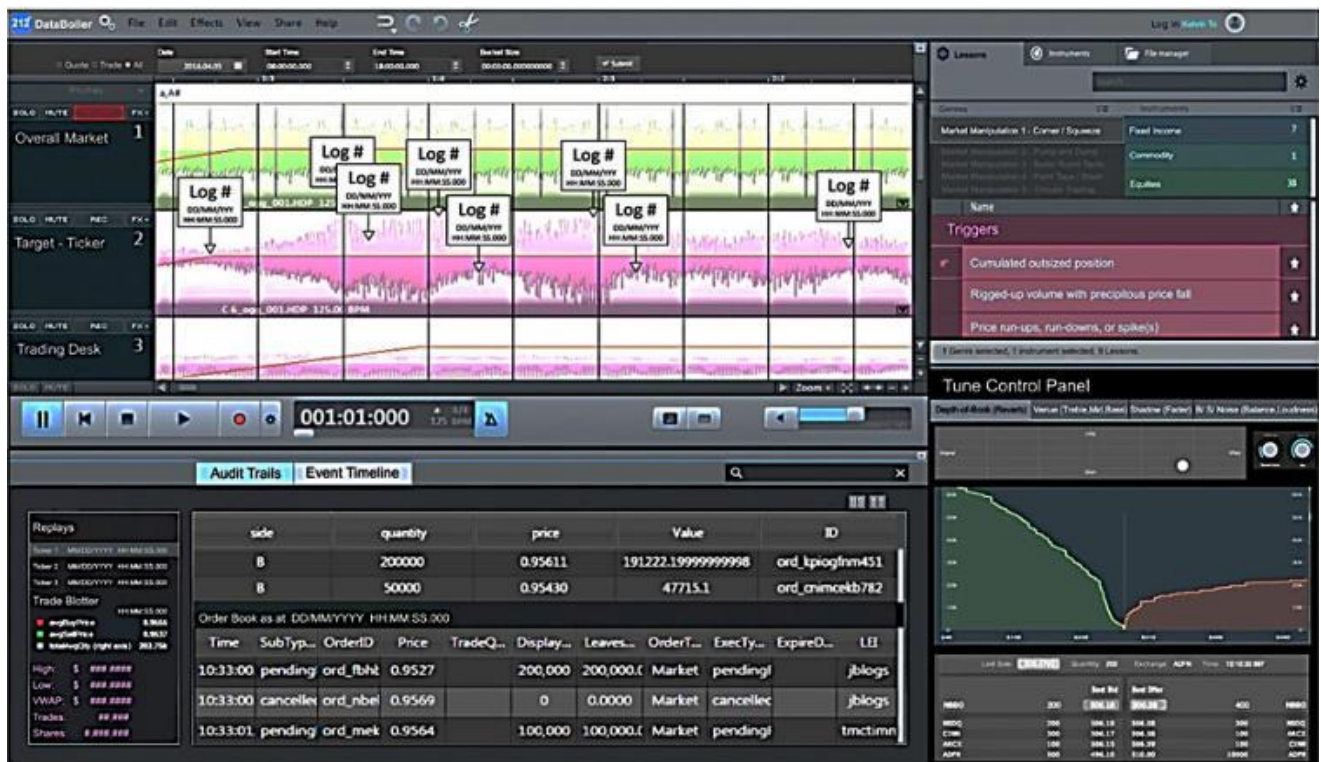
Using traditional techniques that exploit statistical redundancy, Huffman coding, or probability method to represent and compress market data yield only 5% to 20% reduction in size of original stream. Our patented techniques can provide up to a 60% reduction in size of original stream by altering **data format** and **compression methods**. Together with some tradeoffs for what constitute as essential contents of core data, a fair race among different players is possible.





If a stock exchange upgrades its fastest connectivity beyond (or already exceeded) the 2.5 times threshold, the exchange would be required to cover the price difference to upgrade the slowest connectivity for FREE. Further it is suggested that they should offer older model equipment for FREE or at discounted price to subsidize/ cover the cost of broker-dealers for necessary replacements and/or upgrades. We want to emphasize that this is NOT to penalize anyone in pursuit of ever faster speed to make the market more efficient, but more an **encouragement of corporate social responsibilities**.

- Straight line pure “drag race” on [microwave/ laser/ quantum](#) ought to be replaced/ augmented by plans that grow the pie, create appropriate interdependencies between diversified constituents, and **democratization of technologies**. At Data Boiler, we believe that emerging technologies would spur economic opportunities and in turn driving business innovations and customer values. For that, we are thinking about an all new **trade terminal** that looks like this:



This patented solution will enable investors to do pattern recognition and compete without the fastest access. The new competition would be based on the = discovery of new trade patterns that promote financial safety and soundness or help identify [unknown unknowns](#) pertaining to potential crashes. Buying and selling useful patterns can be a **source of revenue** as retail access has raced to zero commission. Further, imagine the opportunities where one can **better utilize VIX, indexing and/or other hedge products** to manage their portfolio. The beauty of it is that over time we will develop a “community library” of trade patterns which benefit the broader industry. Again, it’s about **growing the pie, be fair, and everyone getting a bigger piece!**



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

At Data Boiler, we are more the Qualcomm than the Apple. Between my patented inventions and the wealth of experience of my partner – Peter Martyn, we humbly seek opportunities if some of our skills can be put into appropriate use in driving forward meaningful market reform.