DECLARATION OF NICHOLAS JORDAN WAGTER IN SUPPORT OF PETITIONER'S PETITION FOR INTER PARTES REVIEW OF U.S. PAT. NO. 10,445,833 ("the '833 Patent")

1. I graduated with honors from Western University, earning an Honors specialization in Medical Biophysics (Physical Science Concentration) from the best program in Canada. During my studies, I spearheaded two separate research theses: (1) Designing the light delivery architecture for a photoacoustic probe for use in breast cancer surgery, and (2) Developing a high-frequency ultrasound algorithm to measure skeletal muscle perfusion in micro tumors. These projects encompassed both software and hardware, applying advanced mathematics, physics, and signal processing techniques.

2. I hold a master's degree in Innovation Management from the University of Toronto. During this degree, I completed courses in finance, accounting, markets, intellectual property, and strategic innovation, which directly relate to stock options and markets.

3. My work experience and expertise is in software development, technology management, and technical writing. Among other work experiences I have developed and programmed numerous software applications. I have also consulted on a substantial number of patent matters and am intimately familiar with invalidity analysis. Considering my work experience along with my graduate academic background, I am well-qualified expert to provide insights and analysis related to the '833 Patent which is challenged in this IPR.

4. U.S. Patent No. 10,445,833 ('833) claims an employee stock purchase plan (ESPP) system that aims to maximize share purchases using limited employee contributions. The core concept was disclosed in Hecht, U.S. Pat. App. Pub. No. 20160225081A1, as found by the examiner. The focus of my opinion is on the computer technology elements added to this core concept during prosecution which the examiner found overcame the prior art.

5. My opinion is that, the limitations of the independent claims 1, 6, and 11, even as amended during prosecution, are obvious over the prior art, and have been disclosed numerous times. A few relevant prior art references are:

   US20050010516A1 ('516): Discloses an investment management system that determines optimal asset allocation based on various factors.

   US7577601B1 ('601): Teaches techniques for managing leverage across multiple positions.

   US8332305B1 ('305): Discloses a system for automatically grouping and ordering investment strategies.

   In my opinion, a skilled artisan would have found it obvious to combine these references to arrive at the claimed invention. The added features - the volatility calculation module, transaction module, and simultaneous short and long positions - are either taught by the prior art or represent obvious extensions of known concepts.

6. In this declaration, I will provide a detailed analysis demonstrating that claims 1-18 of the '833 patent are likely obvious over the prior art properly considering the full teachings of the references and the level of ordinary skill in the art. Therefore, there is a reasonable likelihood that the claims are unpatentable.

7. The "volatility calculation module" feature is obvious in my opinion over US20050010516A1 and US7577601B1.

8. The newly added limitation in claim 1 of '833 of:

   "processing, via a volatility calculation module executable by a processor residing on a remote server operated by a third party, the selected monetary contribution amount and selected rebalancing price of each of the plurality of employees in relation to historical and implied volatility of a stock price of employer stock to define a leverage value;

   determining, via the volatility calculation module using the leverage value, whether leverage should be utilized to acquire shares of employer stock on a financial exchange market" would have been obvious to a person of ordinary skill in the art at the time of the invention in view of '516 and '601.

9. The '516 patent discloses an investment management system that includes "an asset allocation strategy recommendation module adapted to receive investment goal information and investor risk tolerance level information from a user" and "determines a percentage allocation for a plurality of asset classes". It also discloses "a rebalancing execution module adapted to automatically rebalance the portfolio upon a predetermined condition without any further input from the user". The asset allocation is determined based on "the received investment goal information and investor risk tolerance level information". The investment goal information includes "at least one of an initial investment amount or estimated contributions, and an estimated withdrawal target date". The system determines "a percentage allocation for a plurality of asset classes".

10. The ‘601 patent teaches a method for managing leverage relating to financial transactions that involves "quantifying an aggregate net exposure relating to the financial positions held by the identified entity, wherein the financial positions are held in multiple products and multiple market segments and the aggregate net exposure is quantified using cross-product netting and cross-agreement netting". It also discloses "determining a value for collateral dedicated to offset the exposure; and managing leverage relating to the collateral to offset the exposure". The leverage is managed by "managing leverage related to the collateral to offset the exposure".

11. A skilled artisan implementing an employee stock purchase plan system as disclosed in '516 would have been motivated to incorporate the leverage management techniques taught by '601. '516 already utilizes historical volatility data to determine an optimal asset allocation. Extending this to also consider implied volatility, as recited in the claim, would have been an obvious enhancement to better predict future volatility.

12. Furthermore, '516 discloses automatically rebalancing the portfolio based on market conditions. A skilled artisan would recognize that in some cases, the rebalanced allocation may require additional capital beyond what the employee has contributed. In such scenarios, it would have been obvious to utilize the leverage management techniques of '601, including determining a value for collateral dedicated to offset the exposure, to acquire the necessary shares on the market if the expected returns justify the risk.

13. The claimed "volatility calculation module" is merely an obvious automation of this combined manual process using a generic processor. Therefore, the newly added "volatility calculation module" feature would have been obvious in view of the combined teachings of '516 and '601. Its inclusion is not sufficient to make the claim patentable over the prior art.

14. In my opinion, the "transaction module" feature is obvious over US7617148B2 and US8332305B1

Claim 1 of the '833 patent, as amended, recites the additional features of:

"aggregating, via a transaction module executable by the processor residing on the remote server operated by the third party, each of the plurality of employees into one of a plurality of virtual containers based on the selected monetary contribution amount and selected rebalancing price of each of the plurality of employees; and"

"sequencing, via the transaction module, order instructions for a plurality of trade positions related to employer stock on the financial exchange market based on the aggregated plurality of virtual containers"

However, these features fail to patentably distinguish claim 1 from the prior art. The '305 patent (Automatic strategy grouping for a trading system) teaches a nearly identical concept of automatically grouping trading strategies for a financial instrument based on shared attributes, and arranging the strategies into an ordered set of groupings.

Specifically, the '305 patent discloses:

- Receiving an indication to automatically group a set of individual investment instruments related to a same underlying investment instrument held by a user.
- Determining a set of possible strategies comprising one or more individual investment legs based on the set of individual investment instruments.
- Determining a set of groupings of strategies from the set of possible strategies comprising combinations of the individual investment instruments that exactly make up holdings of the user.
- Determining one or more selected groupings from the set of groupings of strategies based on a selection criteria.

This is directly analogous to the claimed steps of the '148 patent of aggregating employees into virtual containers based on their contribution amounts and rebalancing prices, and then sequencing trade orders based on those aggregated virtual containers. The only difference is that the '305 patent groups "strategies" while the '148 patent groups "employees", which is a trivial semantic distinction. Fundamentally, both patents group entities related to an investment instrument based on shared financial attributes.

Moreover, the '305 patent discloses criteria for selecting and ordering the groupings, such as "finding a grouping with the least number of strategies" or "finding one or more

groupings that have a limit to a number of instruments in any of the grouped strategies". This is equivalent to sequencing the grouped orders in the '148 patent.

15. The '148 patent's step of using a "transaction module executable by the processor residing on the remote server operated by the third party" to perform the aggregation amounts to nothing more than implementing the abstract idea using generic computer components. The '305 patent similarly discloses using a computer with a processor and memory to implement its grouping method. Performing the method on a remote third-party server is an obvious and trivial design choice.

In summary, the '305 patent teaches the key allegedly novel features of the '148 patent - grouping entities related to an investment based on financial attributes, and sequencing orders based on those groupings. Any remaining differences are minor and would have been obvious to one of ordinary skill in the art. The amendment fails to add anything patentable over the prior art.

16. The "simultaneous short and long positions" feature is obvious over US7577601B1

Finally, the newly added limitation in claim 1 of '833 of:

"taking, simultaneous short and long positions in a derivative or other financial instrument that would allow for the disposition of shares acquired in the plan at an employee-designated strike price, the short and long positions having different strike prices"

would have been obvious in view of '601. The '601 patent discloses managing leverage by "quantifying an aggregate net exposure relating to the financial positions held by the identified entity, wherein the financial positions are held in multiple products and multiple market segments". Taking simultaneous short and long positions in derivatives is a well-known technique for managing risk and leverage across multiple positions.

The '601 patent further discloses that managing leverage can include "monetizing unrealized positions from at least one of the identified market segments to cross-fund positions in another market segment". Taking offsetting short and long positions with different strike prices is an obvious way to monetize unrealized gains and manage net leverage across different positions and segments.

Therefore, the newly added feature of taking simultaneous short and long positions with different strike prices is an obvious modification in view of '601 and is not sufficient to make the claim patentable.

17. Further, utilizing an electronic interface for any of the above functions is also well known in the art and obvious over at least Exhibit K: Electronic human resource management : enhancing or entrancing? Paul Poisat and Michelle R. Mey Published Online:23 Feb 2017 https://hdl.handle.net/10520/EJC-9f66a7aab. Thus, there is nothing non-obvious added by any of the dependent claims of the ‘833 patent in my opinion.

18. Based on my analysis above, it is my expert opinion that claims 1-18 of the '833 patent are unpatentable as obvious over Hecht and the cited prior art references. The newly added claim limitations fail to add anything novel or non-obvious over the prior art. Thus, my opinion is that the ‘833 is invalid as obvious under 35 USC 103.

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Respectfully Submitted,

/Nicholas Wagter/

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Nicholas Jordan Wagter