UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

Nasdaq, Inc.,	
Plaintiff,	Case No.: 1:24-cv-7296
v.	Judge Joan B. Gottschall
Twelve Data Pte. Ltd.,	
Defendant.	

DECLARATION OF NICHOLAS CARSO

I, Nicholas Carso, declare as follows:

1.   I am an Associate Vice President at Nasdaq, Inc. ("Nasdaq"), the Plaintiff in this action. I have personal knowledge of the facts stated herein, and if called to testify, I could competently do so.

2.   Nasdaq, according to its 2024 Q1 Form 10-Q Quarterly Report, is "a global technology company serving corporate clients, investment managers, banks, brokers, and exchange operators as they navigate and interact with the global capital markets and the broader financial system." A true and correct copy of Nasdaq's 2024 Q1 Report is attached hereto as Exhibit 1.

3.   Nasdaq's business is divided into three business segments: Capital Access Platforms, Financial Technology, and Market Services. Within the Capital Access Platforms segment, Nasdaq operates its Data & Listing Services business. The Data aspect of Nasdaq's Data & Listing Services business distributes historical and real-time market data to sell-side customers, the institutional investing community, retail online brokers, proprietary trading firms and other venues, as well as internet portals and data distributors (collectively, "Nasdaq Data").

4.   Nasdaq's real-time market data derives significant value from being available in real-time, typically every second, with the latest bids, asks, price, and volume of transactions occurring on Nasdaq's markets ("Real-Time Nasdaq Data"). Real-Time Nasdaq Data is not accessible on the same timescales other than through Nasdaq's data products. Real-Time Nasdaq Data has significant commercial value and, as such, customers pay substantial sums for those data products in order to receive the real-time data as soon as possible after it comes into existence. Nasdaq maintains strict controls over the distribution of the real-time data in order to exploit its value.

5.   Nasdaq does not currently separate its Data business revenue from its Listing revenue. The last time it reported its Data revenue separately from its other business segments was in its Q3 2022 quarterly 10-Q report, a true and correct copy of which is attached hereto as Exhibit 2. In that report, Nasdaq reported revenue from its Market Data business for the three months ending September 30, 2022 of $104 million, for an annual revenue slightly greater than $400 million. Nasdaq's market data revenues have remained at a similar amount since, though market data revenue is no longer reported separately in its quarterly filings.

6.   All customers of Nasdaq Data, including all customers of Real-Time Nasdaq Data, are required to sign Nasdaq's Global Data Agreement ("GDA"), a true and correct copy of which is attached hereto as Exhibit 3. The GDA includes several provisions prohibiting customers (referred to in the GDA as "Distributors") from retransmitting or reprocessing information obtained through the data feeds without Nasdaq's express approval, and requiring security precautions to prevent unauthorized access to Nasdaq's data feeds.

7.   The GDA incorporates Nasdaq's U.S. Equities and Options Data Policies ("Data Policies"), which impose additional requirements and contractual limitations on how Distributors

may access Nasdaq Data. A true and correct copy of the Data Policies is attached hereto as Exhibit 4.

8. The GDA also imposes restrictions on Distributors relating to Nasdaq's intellectual property rights in its Nasdaq Data. It requires that Distributors acknowledge Nasdaq's ownership in all intellectual property rights in the Nasdaq Data, and requires Distributors to include source attribution messages in connection with any Nasdaq Data identifying Nasdaq as the source of the Data. The GDA incorporates and requires Distributors to follow the "Nasdaq Requirements," which provide details on how Distributors are required to include prominent attribution messages identifying Nasdaq as the owner of the data provided such as "Real Time Nasdaq Last Sale data provided by Nasdaq" or "Source: Nasdaq Last Sale." A true and correct copy of the Nasdaq Requirements is attached hereto as Exhibit 5.

9. In order to efficiently deliver Real-Time Nasdaq Data feeds to customers, Nasdaq compiles the electronic format of its data feeds in a format of its design so that customers can receive the information they require regarding market transactions at the speed they need it.

10. Nasdaq discovered that Defendant was purporting to provide real-time data for Nasdaq equities and indices to its customers. Defendant has not signed the GDA and is not an authorized Distributor of Nasdaq Data. Defendant also displays Nasdaq Data without attribution messages. When Nasdaq discovered Defendant's apparent unauthorized publication of Real-Time Nasdaq Data, Nasdaq began investigating Defendant to determine how Defendant was able to publish Nasdaq Data.

11. On information and belief, Defendant operates through its website, https://twelvedata.com. The Defendant's website states that it supports stock market data from all major US-based exchanges and their subsidiaries, including data for stocks traded on equity

exchanges operated by Nasdaq. A true and correct copy of pages from Defendant's website, printed on August 5, 2024, is attached hereto as Exhibit 6.

12.   As part of its investigation into Defendant, Nasdaq purchased access to Defendant's product, and observed and recorded the speed at which Defendant stock prices updated to determine if Defendant could have obtained its data through publicly available sources. Based on Nasdaq's investigation, on information and belief, Defendant is republishing Real-Time Nasdaq Data without Nasdaq's authorization, and without displaying Nasdaq source attribution messages.

13.   A video attached hereto as Exhibit 7 shows real-time updating of the stock price for ticker symbols AKTIA and BAVA (both companies traded on Nasdaq,) comparing Defendant's service to an authorized real-time data feed. In the video, a window titled "Infront Professional Terminal" shows the last price for AKTIA from an authorized Real-Time Nasdaq Data feed, on top of a Google Chrome window showing the Defendant's feed from the URL https://twelvedata.com/account/websocket. When the video begins, showing data taken on March 13, 2024, the last AKTIA stock sale price was $9.48. At 0:22 on the video, the Real-Time Nasdaq Data feed shows a sale at $9.47. In about a second, the Defendant's feed shows the AKTIA price dropping to $9.47. At the 04:04 time in the video, the price for ticker symbol BAVA (Bavarian Nordic) is added to both the authorized feed window and the Defendant's feed. The AKTIA and BAVA symbols were chosen for this investigation because they are stocks with low trading volume, making it easier to identify when a trade occurs and the stock price changes. At 05:32, the authorized data feed changes and shows a new sale of BAVA at 164.50. A few seconds later, at 05:36, the next time the Defendant's feed updates, it shows the same sale. Another sale of BAVA appears on the authorized data feed at 07:31 at 164.35; the Defendant's

feed updates with this sale less than two seconds later, at 07:33, again at the next refresh of the Defendant's site. On information and belief, Defendant could not update the AKTIA and BAVA stock prices as quickly as this video shows through any public data source; it could only update the AKTIA and BAVA stock prices at the speed it does with unauthorized access to Real-Time Nasdaq Data feeds.

14.   Another video from the investigation is attached hereto as Exhibit 8, showing the stock price for Shore Bancshares Inc., ticker symbol SHBI (another Nasdaq-traded stock) comparing Defendant's data feed with the authorized data feeds provided by E*Trade, Google Finance, Charles Schwab, and Fidelity. At the start of the video, each of the six windows show a share price of $10.99 for SHBI. At timestamp 9:33 in the video, Defendant updates SHBI's share price to $10.96, a few seconds after E*Trade shows the share price change to $10.96, but seconds before Yahoo Finance, Google Finance, Fidelity, and Charles Schwab show the price change. A similar instance can be seen at 23:03, when Defendant updates the price of SHBI to $11.00, and only after that do Yahoo Finance and the other publicly available authorized websites update to $11.00. On information and belief, Defendant could not update the SHBI stock price as quickly as this video shows through any public data source; it could only update the SHBI stock price at the speed it does with unauthorized access to Real-Time Nasdaq Data feed.

15.   The price Defendant charges for its real-time data feed is significantly lower than the price Nasdaq charges for authorized customers. Nasdaq has communicated with several customers who have informed Nasdaq that they were purchasing Nasdaq data from Defendant rather than Nasdaq or Nasdaq's authorized Distributors, because it was cheaper.

16.   Nasdaq has also been informed by several of its authorized Distributors of Nasdaq Data that they have lost customers to Defendant as well, again due to the price difference.

17.   While Nasdaq knows from direct communications that it has lost some sales to Defendant, Nasdaq has no way of knowing how many sales it has lost to Defendant, because it has no way of knowing if a customer chose Defendant over Nasdaq or Nasdaq's authorized Distributors if the customer does not speak directly with Nasdaq.

18.   Nasdaq has attempted to determine how Defendant obtains its Nasdaq data feeds to determine if Defendant had some lawful method of obtaining the data. In 2023, Nasdaq obtained from a third-party[1] an email exchange he had with an Alexander Axelrod at Defendant in September 2021, a true and correct copy of which is attached hereto as Exhibit 9. In the email, the third-party asks if Defendant is licensed to redistribute stock exchange real-time pricing data. Axelrod responds, "We are working through other data vendors, which allow us to further redistribute data. This should not be an issue for your side." This is a meaningless non-response, as Nasdaq's GDA prohibits any unauthorized re-distribution of Nasdaq Data by authorized Nasdaq Distributors.

19.   Before filing the present lawsuit and motion, Nasdaq made one more attempt to determine directly from Defendant whether it had an authorized source for its data. A Nasdaq employee[2] emailed Axelrod on April 22, 2024, explaining that Defendant appears to provide Nasdaq Index Information and Equity Information in real time, and inquiring into how Defendant obtained that data. Axelrod responded by asking for a page on the website where that

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[1] Nasdaq is redacting the third-party customer's name from this declaration for his privacy, while filing the email exchange containing his name under seal.
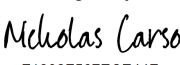[2] Nasdaq is redacting the employee's name from this declaration for her privacy, while filing the email exchange containing her name under seal.

information was located, without providing an answer. Nasdaq responded that Nasdaq takes

Axelrod's non-answer as confirmation that he is not aware of the provision of Real-Time Nasdaq

Data on Defendant's website, and that Defendant does not have an authorized provider or

contract. On May 1, 2024, Axelrod responded again saying only that Defendant displays EOD

("end of day") indices. A true and correct copy of this email exchange is attached hereto as

Exhibit 10. As the videos attached hereto as Exhibits 7 and 8 show, Defendant provides real-time

Nasdaq equity data, not merely public end-of-day data. In addition, such end-of-day data also

requires a valid license from Nasdaq, which Defendant has not procured.

20.   Nasdaq attempted to find a record of Alexander Axelrod online through websites

such as LinkedIn, and found no evidence of the existence of an employee of Defendant by that

name. On information and belief, there is no "Alexander Axelrod" employed at Defendant.

I declare under penalty of perjury under the laws of the United States of America that the

foregoing is true and correct.

Executed on this 16th day of August, 2024, at _____, _____.

DocuSigned by:

Nicholas Carso

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Nicholas Carso