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S&P Global
Market Intelligence

SCHEDULE # 28:
Modernized Options Investing for InvestorLine 2.0

This Schedule ("**Schedule**") is entered into between Markit On Demand, Inc. ("**S&P**") and the Bank of Montreal ("**Customer**", "**BMO**") pursuant to, and incorporating by reference all terms and conditions of the Master Agreement between Markit On Demand, Inc. and Customer dated December 1, 2008 (the "Agreement"). References to "MOD" /"Markit" / "IHS Markit" and "Subscriber"/"Client" (as the case may be in the Agreement) shall be read, for the purpose of this Schedule, to mean "S&P" and "Customer" as defined herein**.**

This Schedule constitutes a separate agreement between S&P and Customer for the services described herein. The parties agree that this Schedule and the services provided hereunder are subject to the terms and conditions of the Agreement, incorporated into this Schedule by reference. In case of inconsistency between the terms of the Agreement and the terms of this Schedule, the terms of this Schedule shall prevail. All capitalized terms used but not defined in this Schedule shall have the meanings given to such terms in the Agreement.

This Schedule commences on June 5, 2023 ("**Effective Date**").

1 Project Description

1.1 Customized Solution

S&P will perform remaining design, develop and deliver to BMO's InvestorLine 2.0 platform a modernized, web-based options experience for desktop browsers with mobile breakpoints for mobile browsers (the "**Customized Solution**").

The Customized Solution will include the features listed below largely as according to the prototypes provided to BMO from S&P (documented in Appendix A):

- Phase 1 (October 2023 milestone)
  - Options tab modernized experience
    - Tab sections: Learn about options; Options chain
    - User experience customization
  - Option chain UI (for calls and/or puts)
  - Quote bar: SmartText (inspectable, plain-speak technology) to summarize instruments' data points
  - Learn about options
  - Analyzer tool
- Phase 2 (April 2024 milestone)
  - Updates to October milestone items
    - Options tab additional sections: Explore scenarios; Discover; Options market overview
    - Additional user experience customization parameters for Options tab
    - Option chain UI added for Vertical spreads, horizontal spreads, straddles, long/short strangle
    - Quote bar: graphic of historical/contextualized IV (implied volatility)
    - Analyzer tool visualizations for the following: profit & loss; open interest; IV; volatility skew
  - Explore scenarios (My outlook / Strategy builder): explore and research options strategies by user thesis
  - Discover: generate investing ideas by strategy or themes
  - Option market overview: generate investing ideas by discovery of most active options on the market
- Supplier will provide an annual review of the retail options trading landscape which shall include notable changes/improvements, insights and emerging trends across North American online discount brokers and service providers. Supplier will also include recommendations for BMO to improve its options investing experience. An executive-level presentation will be presented and sent to BMO once per calendar year. The specific presentation dates will be mutually agreed to between the parties.

1.2 Assumptions

- Starting June 5, 2023, BMO will allocate FTEs under Statement of Work (SOW) #18 to the design and development of this Customized Solution. Changes to designs, features, functionality and/or priorities may shift the delivery timeline and may require adjustment to overall scope and phasing.
- BMO will have updated its internal OMS (order management system) to enable execution of 2-leg options chains by users of InvestorLine 2.0 by or before April of 2024.
- Customized solution will be in French and English with translations provided by BMO.
- Universe: options for underlying instruments on Canada/US exchanges currently offered by InvestorLine 2.0
- Historical IV data feed. The source of the Data Input is OptionsPlay, LLC. The Customer agrees and acknowledges that (i) the provision of the Data Input is subject to the additional the terms listed in Appendix B; ; (ii) S&P may substitute the source of the Data Input at its discretion provided that there is no loss of functionality, performance or experience from the Customized Solution and further that (iii) S&P is accountable for the continuity of this feed and should the source of the Data Input cease to provide the services, S&P will undertake commercially reasonable endeavors to source the Data Input from alternative providers with similar fees.
- S&P will implement Customer's specifications that Customer believes are compliant with WCAG 2.0 level A/AA as a minimum standard. S&P does not warrant or assert that Customer's specifications will be compliant with the guidelines.
- Out of scope

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- Functionality based on users' weighted holdings and order histories are out of scope
- Strategy back testing
- Trade ticket
- Hosting of educational videos
- Integration into BMO InvestorLine 1.0 "Legacy" platform

1.3 Browser Support

S&P will provide support for the Customized Solution in the following browsers. S&P will use reasonable efforts to support the most recent browser versions after they become available. Legacy versions will be retired in due course.

OS	Browser
Windows	Internet Explorer
Windows/Mac	Firefox
Mac	Safari
Windows/Mac	Chrome

1.4 Operation System and Hardware Support

S&P will provide support for the Customized Solution in the following mobile operating systems and hardware platforms:

- Apple iOS 9.0 and greater
- Google Android 6.x (Marshmallow) and greater

S&P will use reasonable efforts to support the most recent operating system version for both Apple iOS and Google Android after they become available. Support for legacy versions (typically 2 major (e.g. 1.x vs 2.x) versions back from current) will be retired over time.

For S&P QA, the Customized Solution will be optimized for the following hardware devices:

- Apple iPad 2 and greater
- Any Android device running Marshmallow (6.0) or greater

The version and hardware support may be reviewed and adjusted if mutually agreed upon by the parties.

2 Schedule

The following schedule outlines the estimated completion dates for guidance purposes only:

Event	Estimated Date of Completion	Owner
Project kick-off	TBD week of June 5, 2023	All
Phase 1 delivery to acceptance	Oct 15, 2023	S&P
Phase 2 delivery to acceptance	April 15, 2023	S&P

*Customer deliverable with a dependency – if the established milestone date is not met, any dates that follow may change.

3 Redundancy

The Customized Solution will be operational in all of S&P managed data centers.

4 Reporting

S&P will provide its standard reporting package when the Customized Solution is running in production.

5 Content

Unless otherwise documented in this Schedule, Customer will be responsible for licensing and providing all data, content and fonts required for this project. S&P can recommend and make introductions to appropriate providers, but Customer will be responsible for all agreements with and payments to such providers.

6 Term

This Schedule shall commence on the Effective Date and remain in effect for two (2) years from the Launch Date of phase 2 ("**Initial Term**"). The Initial Term shall renew for successive renewal terms of one (1) year each, unless either party notifies the other in writing of its decision not to renew the term no later than ninety (90) days prior to the expiration of the then current term.

7 Acceptance

Commencing on the Launch Date of phase 1 and phase 2 (defined as when project functionality is moved to a S&P production environment) or as otherwise agreed by the parties in writing, Customer shall conduct testing on the Customized Solution within five (5) business days (the "**Acceptance Period**"). Within the Acceptance Period, Customer shall provide written notice of acceptance or rejection. In the event Customer rejects any part of the Customized Solution, Customer shall provide adequate explanation regarding the material defects. If Customer fails to provide written notice of rejection within the Acceptance Period, S&P may deem the Customized Solution accepted. The date upon which the Customer accepts the Customized Solution, or the Customized Solution has been deemed accepted, shall be referred to as the "Acceptance Date."

Notwithstanding the remainder of this section, Customer's right to accept the Customized Solution is applicable solely to completion of listed project milestones and overall completion of development services. Hosting Services are not subject to Customer's acceptance. Customer agrees that the usage of hosting services by Customer constitutes acceptance of the hosting services.

8 Service Fee

The Service Fee for the work enumerated in this Schedule is $19,500 USD per month, commencing upon the Acceptance Date of phase 1. The Service Fee for the work enumerated in this Schedule shall increase by $30,100 USD per month and become a total of $49,600 USD per month, commencing upon the Acceptance Date of phase 2. For clarity, $5,600 of the phase 2 billing amount is for a Data Input of historical-implied volatility for instruments on Canadian and US exchanges.

For clarity, the Service Fee commences the Software-as-a-Service (SaaS) licensing model for the delivered Customized Solution as defined by this schedule and its appendix.

S&P will invoice Customer quarterly.

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Customer shall pay S&P for any reimbursable expenses incurred by S&P that have been agreed to in advance between the parties within thirty (30) days of the date of the relevant invoice from S&P.

9 Bug Fixes and Material Changes

S&P will not charge any additional fees for work done to address any material defects in the Customized Solution so it conforms to the original requirements set out in this Schedule and its functional documentation ("Bug Fixes") to the extent that we are hosting the Customized Solution.

S&P will make any changes beyond Bug Fixes at the rate of $175 an hour. Alternatively at Customer's discretion, BMO may utilize available FTEs from Statement of Work (SOW) #18 for Persistent Team and Hosting if available.

Should the Customer want S&P to perform additional work, the parties will enter a separate Schedule. Alternatively at Customer's discretion, BMO may utilize available FTEs from Statement of Work (SOW) #18 for Persistent Team and Hosting if available.

10 Representations and Warranties

Each party represents and warrants that: (i) when executed and delivered, this Schedule shall constitute the legal, valid and binding obligation of such party, enforceable against it pursuant to its terms; (ii) it shall comply with all applicable federal and state laws, regulations and statutes in the performance of its obligations hereunder; (iii) it has full power and authority to enter into and perform its obligations under this Schedule; (iv) it has obtained all necessary corporate approvals to enter into and execute this Schedule; and (v) its performance under this Schedule does not and shall not conflict with any other material agreement or obligation to which it is a party or by which it is bound.

11 Data Protection

Customer represents and warrants to S&P that those individuals or entities for which they provide Personal Data to S&P have consented to the processing and transfer of their Personal Data as contemplated by this Schedule, including but not limited to individuals authorized to access the Services on its behalf ("**Designated Users**"). This information may include personal data such as but not limited to names, titles and work contact information, ("**Personal Data**").

Each party agrees that it shall comply with all applicable data privacy laws including implementing appropriate technical and organisational measures against the unauthorised or unlawful processing of Personal Data and against the accidental loss or destruction of, or damage to, Personal Data. S&P will handle all Personal Data in accordance with S&P's Privacy Policy which can be found at https://ihsmarkit.com/legal/privacy-policy.html. In order to provide the Services S&P may use, collect, store, disclose and process the Personal Data and transfer the Personal Data inside of, and outside of, the United States and the European Economic Area.

12 Change Management

S&P reserves the right, in its sole discretion, to make changes and enhancements to the equipment and software used to provide the services from time to time to maintain operations and as required for problem management and/or system security. S&P will use commercially reasonable efforts to implement changes during non-peak hours, except for changes required for emergency purposes, which may be made at any time. To the extent reasonable and commercially practicable, Customer will be notified in advance of any expected outages.

13 Invoices

All invoices for S&P services provided under this Schedule shall be sent to the following representative of Customer:

ATTN: Mohamed Lamine Khezihi

mohamedlamine.khezihi@bmo.com, 416-951-2735

BMO InvestorLine

Accounts Payable, PO Box 370

Succursale St-Jaques

Montreal, QC H3C 2T1

Canada

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ACCEPTED MARKIT ON DEMAND, INC.	ACCEPTED BANK OF MONTREAL
SIGNATURE DocuSigned by: FF1C9DED2D584A8...	SIGNATURE
PRINT NAME Renee Spampinato	PRINT NAME Andrea Casciato
TITLE Head of Markit Digital	TITLE Head of Digital Investing
DATE OF SIGNATURE June 7, 2023	DATE OF SIGNATURE June 6, 2023

To be completed by the Customer:

Authorized Customer Signatory	
Name:	
Title:	Email:
Phone:	City

Note: Information necessary for S&P's contract compliance and due diligence purposes

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Appendix A: Images from solution prototypes provided to BMO from S&P

October deliverables review

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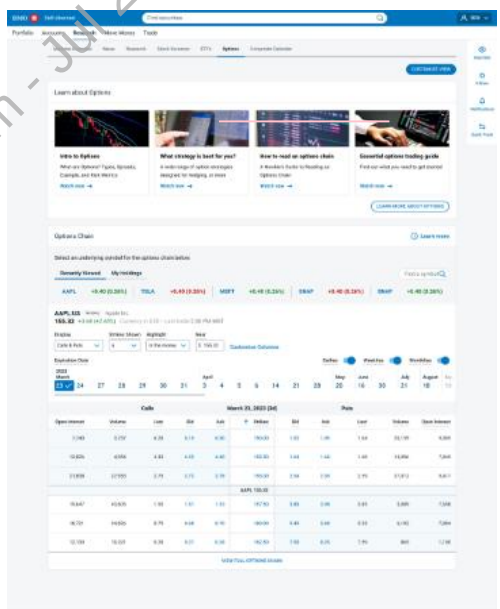
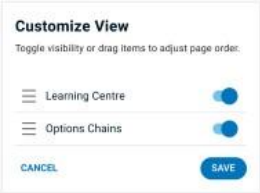
Options tab

Sections | customization





Sections:

- Learnaboutoptions
- Options chain

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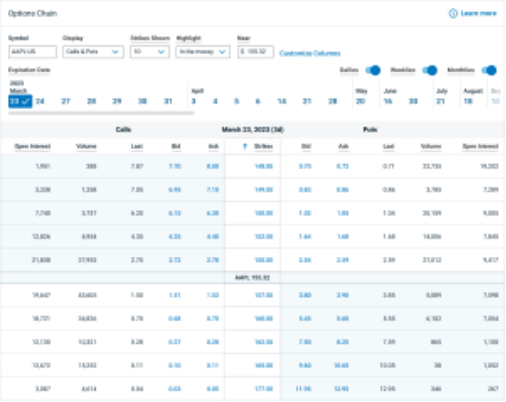
A. Options chain

Modernized experience on BMO's existing back -end



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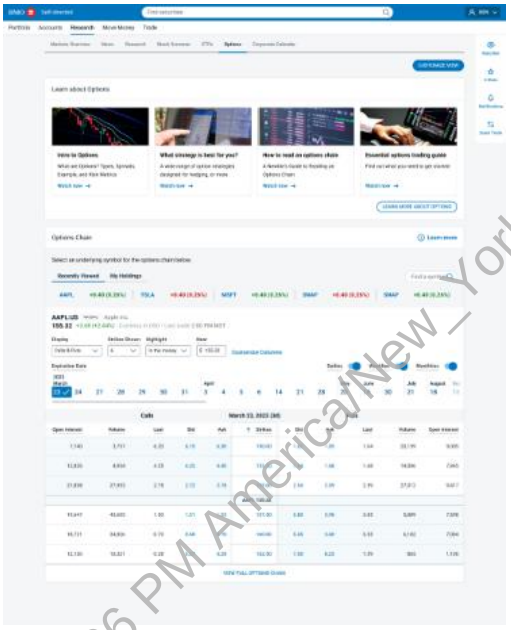

overview

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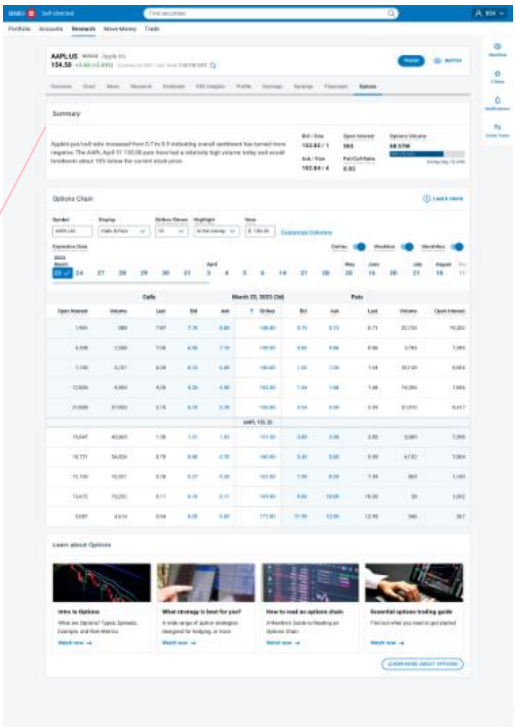
B. Options tab: quote bar

Plain-speak technology to extract meaning from data points for all



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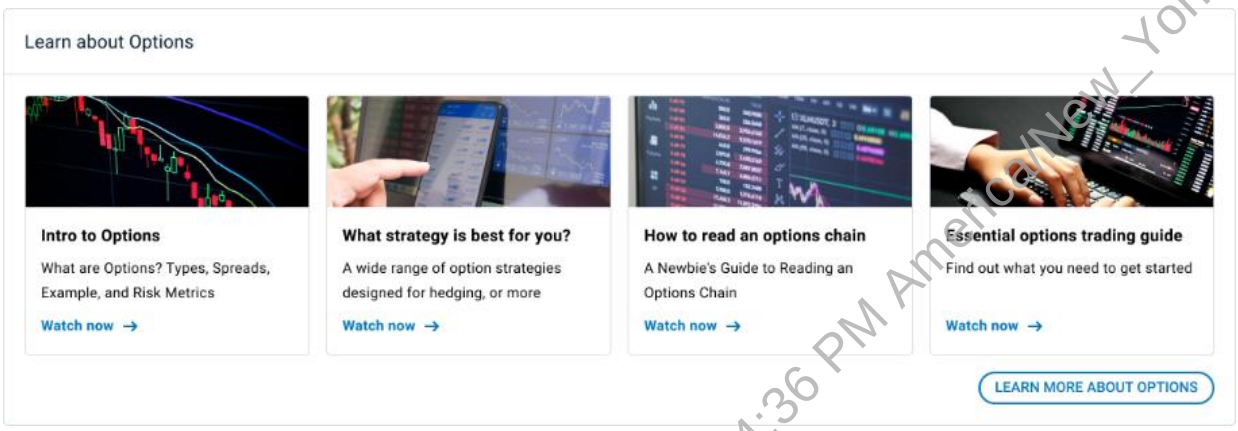
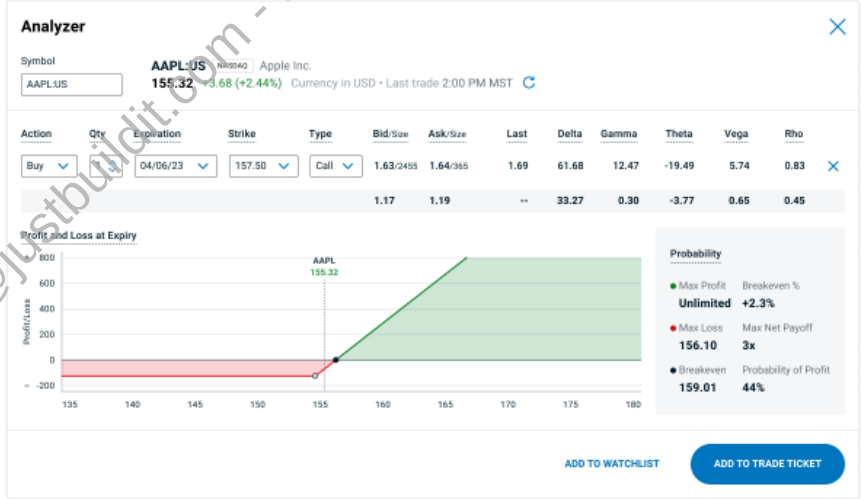
C. Learn about options



D. Analyzer

Explore order characteristics in terms of probabilities and metrics (greeks)



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April deliverables review

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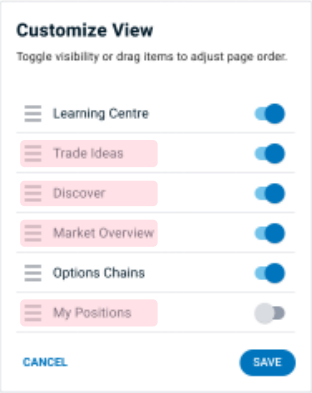
Options tab

Sections | customization

Sections *added:

- Learn about options
- ***Explore scenarios**
- ***Discover**
- ***Options market overview**
- Options chain



+4 configurable components

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E. Further enhancements to options chain

Integration of broader options strategies offering with integrated education

October 2023

Calls, puts only

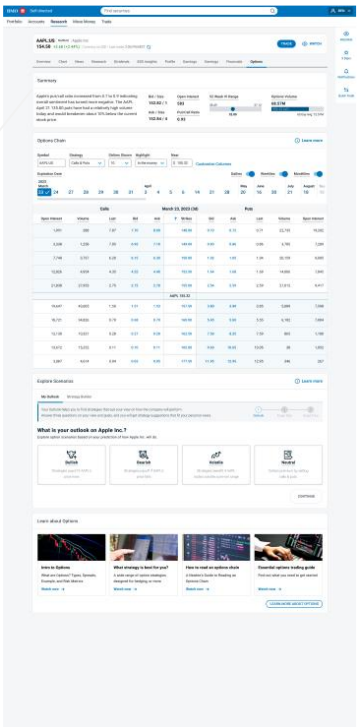
April 2023

Vertical spreads, horizontal spreads, straddles, long/short strangle

E. Further enhancements to Quote bar

Options tab: quote bar data contextualization

Historical IV (implied volatility) added to the instrument summary



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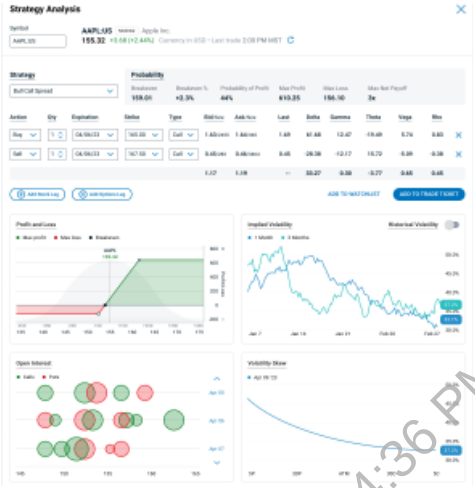
E. Further enhancements to Analyzer

Data visualizations to facilitate broader understanding

Profit & loss

Implied volatility

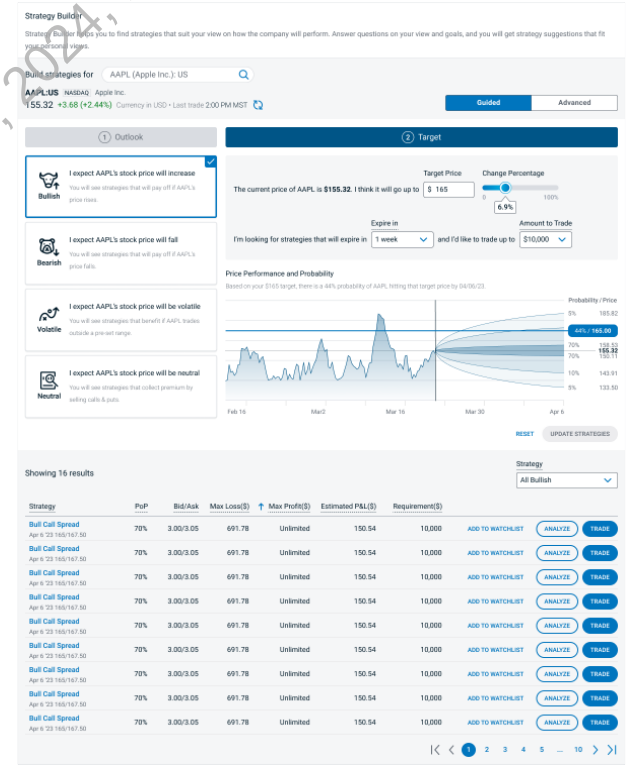


Open interest

Volatility skew

F. Explore scenarios 1/2

Help users find strategies that fit their thesis



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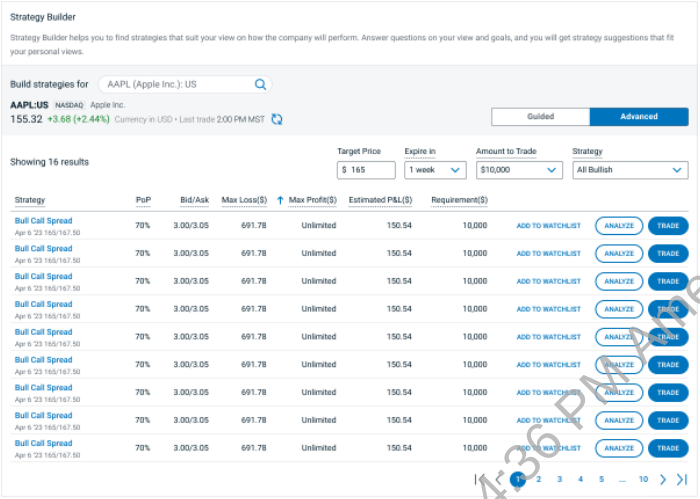
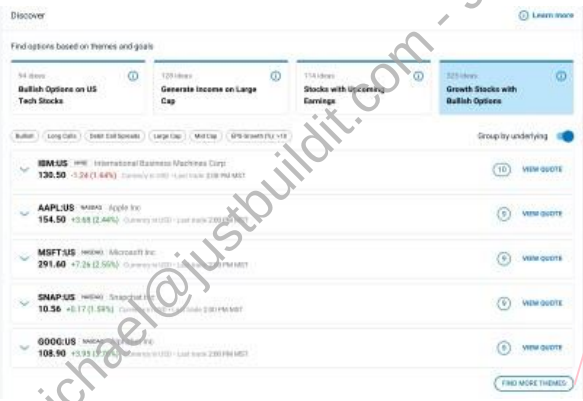
F. Explore scenarios 2/2

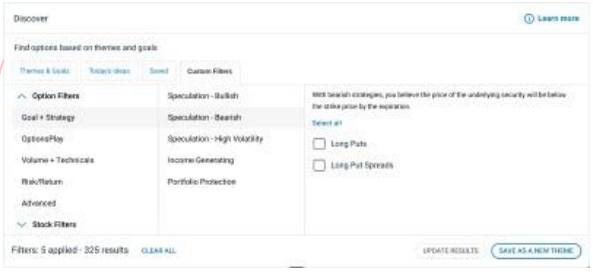
Less guided for advanced users



G. Discove r

Find actionable trade ideas by strategy





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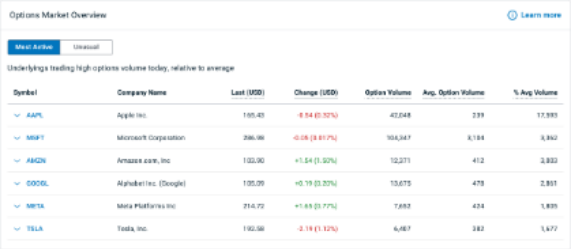
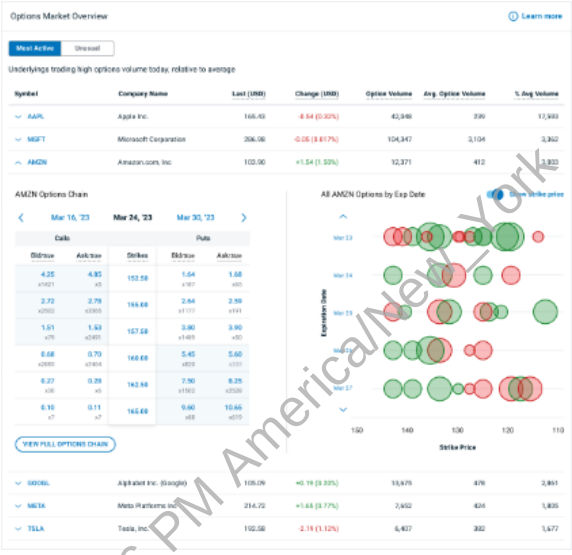
H. Option market overview

Generate ideas by seeing most active options



in optionstab



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Appendix B - Provision of third party data as part of the Customized Solution

Subject to the terms of the Schedule and this Appendix B, S&P will license the Data Inputs (as defined below) listed in the Schedule:

1. Definitions.

1.1. "**Data Provider(s)**" means the S&P third-party data providers of the Data Input; and

1.2. "**Data Input(s)**" means third party data listed in the Schedule and provided by Data Providers.

2. Reporting. Customer acknowledges and agrees that S&P (to the extent required under any licenses or agreements that S&P has with any Data Provider), may provide such Data Provider(s) with the identity of Customer, contact details of Customer representative and Customer's usage of the Data Inputs and any other reasonable information requested by Data Providers (if required).

3. Disclaimer and limitation of liability.

3.1. S&P provides Data Inputs as part of the Customized Solution and Customer agrees that Data Inputs are provided by Data Providers on an "as is" basis. S&P and such Data Providers make no warranty, express or implied, nor shall they have any liability in relation to, the accuracy, timeliness or completeness of the information provided by the Data Providers or for any data delays, interruptions, or omissions or the results to be attained by Customer or others from the use of the Customized Solution and the Data Inputs. Customer hereby acknowledges that there are no express or implied warranties of title, fitness for a particular purpose or use, and that Customer has not relied upon any warranty, guarantee or representation made by S&P or any Data Provider. Data Providers shall have no liability to Customer for any direct, indirect, special or consequential damages (including loss of profits) arising in connection with use thereof or reliance thereon by Customer. All proprietary and intellectual property rights in the Data Input belongs to the applicable Data Providers and/or its or their licensors and are not transferred or modified by the Schedule. Data Input provided by the Data Providers is to be used solely and exclusively under the Schedule for the purposes set forth in the Schedule.

3.2. The maximum liability of S&P and Data Providers to Customer for all claims under the Agreement and the Schedule in connection with the Data Inputs, whether in contract, in tort (including negligence), under a warranty (express or implied), under statute or otherwise, will be limited to financial compensation up to a sum not to exceed the Fees payable by Customer to S&P in the prior twelve (12) months under the Schedule.

4 Intellectual Property. The Intellectual Property Rights in the Data Inputs and any deliverables, enhancements, revisions, updates, upgrades, modifications, customizations thereof or thereto, and any processes or workflows developed and incorporated therein or pertaining thereto shall vest in and remain with S&P, its Affiliates and/or the Data Providers, as applicable and shall under no circumstances constitute or otherwise be deemed a work for hire.

5. Restrictions.

5.1. Customer shall:- (i) not alter, destroy or remove any copyright, trademark or other proprietary or legal markings or notices placed upon or contained within the Data Inputs; and (ii) display the applicable copyrights, trademarks or other proprietary or legal marking or notices notified by S&P to Customer from time to time.

5.2. Customer shall not resell, rent, lease, share, or otherwise distribute the Data Input or otherwise commercialize, productize or otherwise access, use display or make available the Data Input for any purposes not expressly permitted herein.

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