

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5952162

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
HARI MANIVANNAN	02/03/2020
SUNNY FUNG	02/03/2020
DOUGLAS ROCHE	02/03/2020
JOSE QIU CHOU	02/03/2020
KEVIN SONCUYA	02/03/2020
SHILPA HERENJAL	02/03/2020
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	MASTERCARD INTERNATIONAL INCORPORATED
<b>Street Address:</b>	2000 PURCHASE STREET
<b>City:</b>	PURCHASE
<b>State/Country:</b>	NEW YORK
<b>Postal Code:</b>	10577
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16783645
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(913)647-9057
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	913-647-9050
<b>Email:</b>	cdw@hoveywilliams.com
<b>Correspondent Name:</b>	ANDREW G. COLOMBO/HOVEY WILLIAMS LLP
<b>Address Line 1:</b>	10801 MASTIN BLVD.
<b>Address Line 2:</b>	SUITE 1000
<b>Address Line 4:</b>	OVERLAND PARK, KANSAS 66210
<b>ATTORNEY DOCKET NUMBER:</b>	52979
<b>NAME OF SUBMITTER:</b>	ANDREW G. COLOMBO
<b>SIGNATURE:</b>	/Andrew G. Colombo/
<b>DATE SIGNED:</b>	02/06/2020

**Total Attachments: 5**

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WORLDWIDE ASSIGNMENT

WHEREAS, WE,

**Hari Manivannan**, a citizen of the United States of America, having a residence address at 1515 Greenwich St Apt #1, San Francisco, CA, 94123,

**Sunny Fung**, a citizen of the United States of America, having a residence address at 2250 Cecilia Ave., San Francisco, CA, 94116,

**Douglas Roche**, a citizen of the United States of America, having a residence address at 60 Hawthorne Ave., Los Altos, CA, 94022,

**Jose Qiu Chou**, a citizen of the United States of America, having a residence address at 2268 Avocet Court, San Leandro, CA, 94579,

**Kevin Soncuya**, a citizen of the United States of America, having a residence address at 3848A Judah St., San Francisco, CA, 94122,

**Shilpa Herenjal**, a citizen of the United States of America, having a residence address at 6022 Mitchell Creek Place, Clayton, CA, 94517,

(hereinafter individually and collectively "Assignor"), have made an invention entitled "SYSTEM AND METHOD FOR DETERMINING OPTIMUM PRICE CURVE AND DYNAMICALLY UPDATING PRODUCT PRICE" as set forth and described in U.S. Application No. \_\_\_\_\_, filed \_\_\_\_\_; International Application No. \_\_\_\_\_, filed \_\_\_\_\_; United States Provisional Application No. \_\_\_\_\_, filed \_\_\_\_\_; and

WHEREAS, **MASTERCARD INTERNATIONAL INCORPORATED**, having its principal place of business at **2000 Purchase Street, Purchase, NY 10577**, hereinafter referred to as Assignee, is desirous of acquiring the whole right, title and interest therein:

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy whereof is hereby acknowledged, Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor has not already done so, agrees to assign, and hereby does, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions as described in the aforesaid application, to the aforesaid application itself, and all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application, and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by

Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to sue for, and recover for past infringements of, or liabilities for, any of the rights relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights.


Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, any derivation proceedings relating thereto, and as to Letters Patent any supplemental examination, derivation proceeding, opposition, post grant review, reissue, re-examination, inter partes review, or extension thereof, and for litigation regarding, or for the purpose of defending the validity of or protecting title to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee and its successors in interest without further or other compensation than that above set forth.

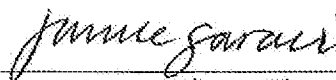
Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment. Assignor further covenants not to challenge, or assist or participate in any third party challenge to, the assigned inventions, or any patent application or patent thereon, whether by litigation, post grant review, inter partes review, covered business method review, reexamination, or otherwise.

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or other similar right to Assignee.

The undersigned hereby authorize the attorneys of Hovey Williams LLP the power to insert in the spaces provided above the title of the invention, filing date, application number, and attorney's docket number of said application when known.


IN WITNESS WHEREOF, I, the said ASSIGNOR have executed this Assignment this  
3<sup>rd</sup> day of Feb, 2020.

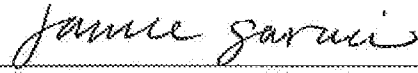
  
\_\_\_\_\_  
Hari Manivannan

  
\_\_\_\_\_  
Witness Signature

JANICE GARACI  
\_\_\_\_\_  
Witness Name

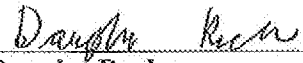
IN WITNESS WHEREOF, I, the said ASSIGNOR have executed this Assignment this  
3 day of Feb, 2020.

  
\_\_\_\_\_  
Sunny Fung

  
\_\_\_\_\_  
Witness Signature

JANICE GARACI  
\_\_\_\_\_  
Witness Name

IN WITNESS WHEREOF, I, the said ASSIGNOR have executed this Assignment this  
3<sup>rd</sup> day of February, 2020.

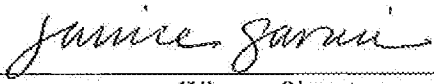
  
\_\_\_\_\_  
Douglas Roche

  
\_\_\_\_\_  
Witness Signature

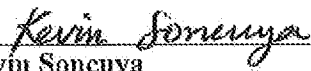
JANICE GARACI  
\_\_\_\_\_  
Witness Name

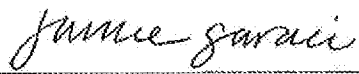
IN WITNESS WHEREOF, I, the said ASSIGNOR have executed this Assignment this  
3 day of Feb, 2020.

  
\_\_\_\_\_  
Jose Qiu Chou

  
\_\_\_\_\_  
Witness Signature  
JANICE GARACI  
\_\_\_\_\_  
Witness Name

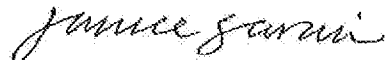
IN WITNESS WHEREOF, I, the said ASSIGNOR have executed this Assignment this  
3<sup>rd</sup> day of Feb, 2020.

  
\_\_\_\_\_  
Kevin Sencuya

  
\_\_\_\_\_  
Witness Signature  
JANICE GARACI  
\_\_\_\_\_  
Witness Name

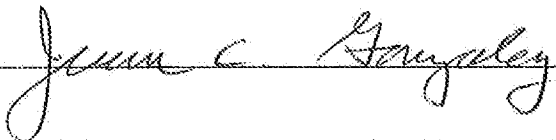
IN WITNESS WHEREOF, I, the said ASSIGNOR have executed this Assignment this  
3 day of Feb, 2020.

  
\_\_\_\_\_  
Shilpa Herenjal

  
\_\_\_\_\_  
Witness Signature  
JANICE GARACI  
\_\_\_\_\_  
Witness Name

Agreed and accepted this 5th day of Feb., 2020.

MASTERCARD INTERNATIONAL INCORPORATED

By:   
\_\_\_\_\_

Title: Juan C. Gonzalez - Senior Vice President and Senior IP Counsel