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Attorneys for SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC. and SAMSUNG TELECOMMUNICATIONS AMERICA, LLC

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA, SAN JOSE DIVISION

APPLE INC., a California corporation,

Plaintiff,

vs.

SAMSUNG ELECTRONICS CO., LTD., a Korean business entity; SAMSUNG ELECTRONICS AMERICA, INC., a New York corporation; SAMSUNG TELECOMMUNICATIONS AMERICA, LLC, a Delaware limited liability company,

Defendants.

CASE NO. 11-cv-01846-LHK

DECLARATION OF R. SUKUMAR IN SUPPORT OF SAMSUNG'S OPPOSITION TO APPLE'S MOTION FOR A PERMANENT INJUNCTION AND FOR DAMAGES ENHANCEMENTS

PUBLIC REDACTED VERSION

I, Ramamirtham Sukumar, hereby declare as follows:

I. BACKGROUND

1. I am the Chief Executive Officer of Optimal Strategix Group, Inc., a strategic market research and marketing consulting company. Prior to becoming Chief Executive Officer of Optimal Strategix Group, Inc., I served as a Professor of Marketing at a number of Universities and as the Associate Dean for Academic Programs at the Indian School of Business ("ISB"). I have served as a consultant for many Fortune 500 companies, engaged to assist clients in understanding the value of the products they offer, designing and developing new products and services, setting pricing and promotional strategies, and evaluating brand marketing strategies. I have also served as an expert, conducting survey research for cases that have involved patent infringement. My CV is attached as Exhibit 1. My CV contains a list of my publications from the last 10 years.

II. ASSIGNMENT

2. I understand that Apple is seeking a permanent injunction for certain Samsung smartphones and tablets. I also understand that Apple must prove Samsung consumers purchased the relevant Samsung devices because they included the functionality claimed by three of Apple's touchscreen patents (US 7,469,381, US 7,844,915, and US 7,864,163) (the "Three Touchscreen Patents") purportedly tested in Professor Hauser's surveys. I further understand Apple is relying on Professor Hauser's Report and surveys to show the requisite consumer demand for the Three Touchscreen Patents.

III. ANALYSIS

A. Professor Hauser's Results Do Not Show The Three Touchscreen Patents Drive Consumer Demand For Any Samsung Product

3. In this litigation, I submitted a rebuttal report in which I analyzed Professor Hauser's Report and surveys.[1] Professor Hauser attempted to measure Samsung consumers' willingness to pay ("WTP") (or so-called "price premiums") for certain touchscreen functionality claimed by Apple's patents. Hauser Dep. Tr. at 64:5-13 ("Well, I had an assignment from Apple that I wanted to essentially measure price premium, or use other words to describe it, of the functionality of the patents, yes. That was my assignment."). After careful analysis, I concluded that Professor Hauser's surveys and analysis did not reliably estimate consumers' WTP.

4. I have been asked by counsel for Samsung to consider the applicability of Professor Hauser's surveys and results to the question of consumer demand. As an initial matter, consumer demand for a product and Professor Hauser's estimated consumer WTP for certain features are fundamentally different concepts. *See* HAL R. VARIAN, INTERMEDIATE MICROECONOMICS: A MODERN APPROACH 4 W.W. Norton & Company, Inc. (3d ed. 1993) ("Economists call a person's maximum willingness to pay for something that person's **reservation price**." "We can plot these reservation prices in a diagram . . . [where] the [reservation] price is depicted on the vertical axis and the number of people who are willing to pay that price or more is depicted on the horizontal axis." "The demand curve describes the quantity demanded at each of the possible [reservation] prices.") (emphasis added); s*ee also*

[1] Expert Report Of R. Sukumar Regarding The Amount Samsung Customers Would Be Willing To Pay For The Features Associated With Patent Nos. U.S. 7,844,915, U.S. 7,469,381, U.S. 7,864,163, And U.S. 7,663,607 ("Sukumar Rebuttal Report").

BRYAN K. ORME, GETTING STARTED WITH CONJOINT ANALYSIS: STRATEGIES FOR PRODUCT DESIGN AND PRICING RESEARCH 84 Research Publishers LLC (2d ed. 2010) ("A measure of willingness to pay shows how much value an individual consumer places on a good or service."). Importantly, Professor Hauser's estimated consumer WTP for a feature does not measure the ability of Samsung to profitably raise its prices for its products and does not accurately reflect consumer demand for a product in real-world markets.

5. Assessing consumer demand for the Three Touchscreen Patents was not Professor Hauser's assignment and his analysis does not contain such an assessment. Professor Hauser's surveys and analysis attempt to determine the maximum amount certain customers would be willing to pay to have a particular feature. He did not, however, even attempt to assess how consumer demand for a product with a particular feature in the market would vary if the feature was changed or excluded. *See* Hauser Report ¶ 70 (the surveys were designed to "estimate the value of a change in the level of touchscreen capability relative to a change in price," not to estimate "demand"). Such an analysis would be necessary in order to assess whether certain features drive the demand for the products.

6. In addition, the relationships between features, prices, and the quantity of products sold, and the question of what drives consumer demand for any product, depend on the other competitive products in the marketplace, and the decisions of other participants in the market.[2] For example, if Apple decided to price its iPhone at $1, then consumer demand for Samsung smartphones would be expected to be quite small, even with the Three Touchscreen Patents. The market context is critical in assessing consumer demand for the Three Touchscreen Patents, and Professor Hauser's surveys and analysis completely ignored competing

[2] BRYAN K. ORME, GETTING STARTED WITH CONJOINT ANALYSIS: STRATEGIES FOR PRODUCT DESIGN AND PRICING RESEARCH 86-88 Research Publishers LLC (2d ed. 2010).

brands and products. Hauser Report ¶ 69 ("the survey was designed with the goal that respondents would not make comparisons with other devices available in the marketplace"), ¶ 96 ("I note that I use the term 'market' in a specific way to cover only smartphone and tablet types that I have varied in the survey; I have not tested a market for smartphones or tablets in which consumers choose among various brands of smartphones or tablets"). Professor Hauser's analysis is therefore necessarily irrelevant to the question of whether the Three Touchscreen Patents "drive the demand" for certain Samsung smartphones or tablets.

7. Furthermore, because Professor Hauser's survey designs were fundamentally flawed, his conclusions about so-called "price premiums" or maximum WTP are inherently unreliable. I explain these design flaws in more detail below.

B. Professor Hauser's Survey Designs Were Flawed

8. I focus here on issues related to the presentation of the touchscreen "feature" Professor Hauser tested. Professor Hauser used audio/video ("A/V") animations for three of the seven "features" he tested. Hauser Report ¶ 64 (touchscreen, camera, and connectivity "features" presented using A/V animations). Professor Hauser claims this was done to avoid so-called "demand artifacts" vis-à-vis using A/V animations for only a single feature, but he failed to recognize that in using A/V animations for only some of the "features," he created demand artifacts vis-à-vis the features not presented via A/V animations. Hauser Report ¶¶ 64, 19 ("Demand artifacts are aspects of the study that influence research results based on the chosen procedure rather than based on the phenomenon under study.") Evidence of these demand artifacts can be seen in Professor Hauser's WTP estimates, which show that the three features presented via A/V animation produced the highest WTP values and yet *none* of these features is

identified by consumers as among the most important features considered in their smartphone purchase decision.[3]

9. Further evidence of flawed survey designs is adduced from looking at Professor Hauser's WTP estimates for the "weight and size" "feature." It is well documented that screen size is one of the most important attributes in the smartphone purchase decision, yet Professor Hauser's results indicate that consumers value the Three Touchscreen Patents exponentially more than the "weight and size" "feature."[4] Indeed, evidence of substantial consumer demand for smartphones with larger screens can be readily observed in the marketplace by looking at the success of both the Samsung Galaxy S III with its 4.8" screen and Apple's recently-introduced iPhone 5, with its 4" screen (larger than all previous iPhone models).[5]

10. I obtained additional marketplace evidence of the lack of consumer demand for the Three Touchscreen Patents by examining publicly-available, in-depth product reviews for relevant Samsung smartphones and tablets.[6] These reviews appear on popular websites that cover the consumer electronics market. Many of these reviews include both text and video, but none describe, mention, or demonstrate the functionality associated with the Three Touchscreen Patents.

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[3] *Compare* TABLE 1 *infra with* APLNDC0002007608 - APLNDC0002007704 at '7633-34 (Defendant's Trial Exh. 572.026-27); *see also* Sukumar Rebuttal Report ¶ 50 ("Furthermore, by providing videos for some features and only graphics for others (Hauser Report, ¶ 64) the survey may have created demand artifacts that would place more emphasis on the attributes for which videos were shown. Consequently, the willingness-to-pay for these attributes would be biased upward as compared to attributes for which only an image was shown.").

[4] [redacted]; Table 1 *infra*.

[5] [redacted]

See, e.g., Droid Charge (http://www.engadget.com/2011/05/02/droid-charge-review/), Galaxy Tab (http://www.wired.com/reviews/2010/11/galaxy_tab/), Galaxy S II (AT&T) (http://www.pcmag.com/article2/0,2817,2393609,00.asp), Exhibit 4G (http://www.laptopmag.com/review/cellphones/samsung-exhibit-4g.aspx), Gem (http://reviews.cnet.com/smartphones/samsung-gem-sch-i100/4505-6452_7-34480810.html), Mesmerize (http://reviews.cnet.com/smartphones/samsung-mesmerize-u-s/4505-6452_7-34192075.html).

11. When viewed in the proper marketplace context, Professor Hauser's conclusions regarding the Three Touchscreen Patents are plainly implausible. In order to understand why his results are so disconnected from marketplace evidence of actual consumer demand, I have looked again at his surveys and noted an additional problem, the presence of additional demand artifacts, which was not readily apparent by analyzing his report.[7] I have concluded that in addition to the demand artifacts created by presenting only some of the "features" via A/V animation, Professor Hauser created separate, additional demand artifacts for the touchscreen "feature."

12. As Professor Hauser himself acknowledged, a demand artifact is created when the design of a survey causes a respondent to focus on a particular feature. Hauser Dep. Tr. at 89:11-90:1 ("I do have to have at least some reasonable set of distraction features so that I don't have a -- them focusing on just the patent and price features."); *see also* Hauser Report ¶ 19. It is a basic tenet of consumer research that demand artifacts render survey and other types of experimental results unreliable.[8]

13. For each of the tested "features," Professor Hauser showed survey respondents an introductory screen which purported to explain the "feature" by use of words and icons.[9] These

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[7] Professor Hauser's actual surveys were not provided to Samsung. Instead, Professor Hauser provided screenshots from the surveys, which were printed and attached as Exhibits F-G to his Report. It was only after discovering on my own that some of the survey pages were still viewable online that I had the chance to view those survey pages in the same way survey respondents did, thus discovering the additional demand artifacts created by the flawed survey designs.

[8] Alan G. Sawyer, "Demand Artifacts in Laboratory Experiments in Consumer Research," *Journal of Consumer* Research, 1, 4 (Mar. 1975) at 20-21 ("The effects of demand artifacts pose important threats to both internal and external validity." "Demand characteristics which are more likely to occur in the more artificial laboratory may affect the ability of the experimenter to generalize his results to a real life situation where an analogous set of demand conditions may be absent [ ].").

[9] *See, e.g.*, http://www.surveyplus.com/survey1202asps/QATTR1.asp, http://www.surveyplus.com/survey1202asps/QATTR2.asp, http://www.surveyplus.com/survey1202asps/QATTR3.asp, http://www.surveyplus.com/survey1202asps/QATTR4.asp, http://www.surveyplus.com/survey1202asps/QATTR5.asp,

(footnote continued)

icons were also used in each of the screens respondents used to make their product selections. Hauser Report Exhs. F-G. As is easily discerned by viewing the introductory screens and the survey selection screens, Professor Hauser improperly and overtly differentiated the touchscreen "feature," causing respondents to focus on it inordinately, thus introducing error and bias in the form of demand artifacts.[10]

14. Professor Hauser differentiated the touchscreen feature in numerous ways. Most obviously, when moving from level to level in the touchscreen "feature," levels are crossed out with bright red lines—no other "feature's" levels are depicted this way.[11] This differentiation is made clear by direct comparison to the connectivity "feature," the icons of which otherwise most closely resembles the touchscreen "feature" icons.[12] When depicting connectivity levels, Professor Hauser simply presented the functions the particular level had—he did not, as he did with the touchscreen levels, strike-through missing functions in red and allow those functions to remain in each of the four icons presented in the survey. Such differentiation focused survey respondents inordinately and inappropriately on the Three Touchscreen Patents, specifically, on the loss of the functions covered by them. In so doing, Professor Hauser's surveys suggest the

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http://www.surveyplus.com/survey1202asps/QATTR6.asp,
http://www.surveyplus.com/survey1202asps/QATTR7.asp.

[10] The introduction to the touchscreen "feature" for smartphones is available at http://www.surveyplus.com/survey1202asps/QATTR3.asp and the introduction to the touchscreen "feature" for tablets is available at http://www.surveyplus.com/survey1202asts/QATTR3.asp. The actual survey selection screens incorporating the touchscreen icons are not available online. Each survey respondent saw 16 selection screens featuring the icons discussed above. Professor Hauser provided only two examples (one for smartphones, one for tablets) of these selection screens in his Report. Hauser Report Exhs. F-G.

[11] *Compare* http://www.surveyplus.com/survey1202asps/QATTR3.asp *with*
http://www.surveyplus.com/survey1202asps/QATTR1.asp *and*
http://www.surveyplus.com/survey1202asps/QATTR2.asp *and*
http://www.surveyplus.com/survey1202asps/QATTR3.asp *and*
http://www.surveyplus.com/survey1202asps/QATTR4.asp *and*
http://www.surveyplus.com/survey1202asps/QATTR5.asp *and*
http://www.surveyplus.com/survey1202asps/QATTR6.asp *and*
http://www.surveyplus.com/survey1202asps/QATTR7.asp.

[12] *Compare* http://www.surveyplus.com/survey1202asps/QATTR3.asp *with*
http://www.surveyplus.com/survey1202asps/QATTR5.asp.

correct answer to each choice exercise is whichever choice includes all of the functions covered by the Three Touchscreen Patents. In this way, Professor Hauser made the Three Touchscreen Patents appear in his survey as must-have functions, which improperly guided respondents to select them without proper consideration of utility, other features, or price. This caused his surveys to overstate the WTP estimates of the Three Touchscreen Patents.

15. Professor Hauser differentiated the touchscreen "feature" in other ways as well. They include: (1) occupying the most space in the selection screen grid;[13] (2) rendering the background color of the touchscreen icon solid black, while rendering the other "features'" icons in medium-to-light gray gradients;[14] and (3) depicting the touchscreen feature with large disparities in the lines of text used to describe levels (for example, "Full Multi-Touch" is a single line of text while the highest level touchscreen description utilizes five lines of text;[15] no other feature's description employs a five-to-one ratio).[16] The import of these differentiations is that the survey focused respondents on the touchscreen "feature," which created layers of demand artifacts. These and other errors render his results and conclusions unreliable.

C. Professor Hauser's Results And Conclusions Are Contradicted By Marketplace Evidence Of Demand

16. As made clear during trial, Professor Hauser's results lack external validity, which means they are not validated by real-world consumer behavior. Trial Tr. 1926:24-1927:7; 1940:4-21. The import of this is twofold. First, it is undisputed that Professor Hauser's implausible valuations of the Three Touchscreen Patents do not reflect dollar amounts consumers would actually pay in the real world. *See id.* at 1935:16-25 ("It's not what they

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13 *See* Hauser Report Exh. F at "QINTRO3."
14 *See* n.11 *supra*; Hauser Report Exh. F at "QINTRO3."
15 http://www.surveyplus.com/survey1202asts/QATTR3.asp.
16 *See* n.11 *supra*.

actually pay in the marketplace."). Indeed, Professor Hauser himself has conceded that, at best, his survey data and results can be used to estimate WTP for the tested features—they do not measure, and cannot be used to measure, what consumers might actually pay in the real world. *Id*. Second, because Professor Hauser's results are inconsistent with consumer data, including purchase-decision surveys commissioned and/or conducted by Apple and/or Samsung, his results cannot be equated with actual consumer demand for the Three Touchscreen Patents.[17]

17. To demonstrate the disparity between Professor Hauser's results and evidence of actual consumer demand in the marketplace, using Professor Hauser's data and one of his selected methodologies, I calculated the WTP estimates for the other "features" Professor Hauser tested in his surveys. While Professor Hauser deliberately chose not to report these other WTP estimates, they can be calculated using the back-up data and programs he provided.[18] Hauser Dep. Tr. at 90:2-91:2 ("I think for simplicity . . . I didn't report them, but, you know, they were – they're in all the files; you can compute them, et cetera."). More specifically, I used Professor Hauser's median-consumer WTP programs to derive so-called "price premium" estimates for the other tested "features." Professor Hauser used the median-consumer willingness to pay calculations to check the market simulation results reported in Table 4 of his Report.[19] Below, I

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[17] *See, e.g.,* SAMNDCA00252685 - SAMNDCA00252775 at '707 (Most important features are reception and battery life. Device durability, speed of connectivity, ease of typing, and wireless carrier deemed very important attributes by at least 75% of consumers.), [redacted]

The relevant data appears in Professor Hauser's SAS datasets (avss_mono_scrub.sas7bdat and avst_mono_scrub.sas7bdat) and program files (header.sas, wtp_tablet.sas, and wtp_sphone.sas). The price premiums I report in Table 1 were generated by applying the code in Professor Hauser's programs for the Touchscreen feature to the other features.

[19] As Professor Hauser states in his Report, "[t]he median-consumer willingness to pay calculation yields price premium estimates that are similar to what I estimate using the market simulation method." Hauser Report ¶ 104, n.72. Median WTP estimates could also be derived using Professor Hauser's market simulation method. Hauser Report ¶ 98. Analyzing Professor Hauser's consumer WTP method allowed me to consider the distribution of individual WTP estimates, which provided additional insight into the reliability and reasonableness of Professor Hauser's analysis and results. Sukumar Rebuttal Report ¶¶ 11, 70-75.

summarize some of the fundamental marketplace contradictions his median-consumer willingness to pay calculations show:

- Professor Hauser's estimated price premium for memory was $.04 for smartphones and $10 for tablets to double memory from the base 8GB, while the marketplace typically commands much more to double the storage capacity of a smartphone or tablet.[20] For example, Samsung charges $100 to double the storage capacity of the "Galaxy Tab 7.0" tablet.[21]

- Professor Hauser's results suggest consumers are willing to spend only $0.01 to double the number of applications ("apps") available for their smartphone.[22] [redacted] In fact, the number of available apps is such a critical driver of consumer demand that Apple [redacted].[24]

18. Professor Hauser used four levels for each of the "features" he tested. Hauser Report Exhs. F-G. Professor Hauser's estimated price premiums are presented in the Table 1 below. As the table clearly illustrates, the median-consumer WTP for the Three Touchscreen Patents for smartphones is substantially greater than every other tested feature besides "camera."[25] Such a result is implausible—the Three Touchscreen Patents are indisputably a

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[20] *See* Table 1 *infra*.

[21] *Compare* http://www.samsung.com/us/mobile/galaxy-tab/GT-P6210MAYXAR (16GB/$349) *with* http://www.samsung.com/us/mobile/galaxy-tab/GT-P6210MAVXAR (32GB/$449).

[22] *See* Table 1 *infra*.

[23] [redacted]

[24] [redacted] Professor Hauser's choice to conflate these features likely resulted in respondent confusion and upwardly biased his WTP estimates for the "camera" "feature." *See* Sukumar Rebuttal Report ¶¶ 47-49. Similarly, Professor Hauser's "connectivity" "feature" is also a bundle of features consumers typically disaggregate, as evidenced by the very source Professor Hauser claims externally validates his construction of "features." *Compare* Hauser Report ¶ 39 *with* http://cell-phones.toptenreviews.com/smartphones/. In fact, Professor Hauser admitted he had no external validation for bundling the "features" they way he chose to do in his surveys. Hauser Dep. Tr. 160:6-20 (Q: "are you aware of

(footnote continued)

small subset of functions within a single feature, touchscreen.[26] [redacted] [27] [redacted] [28] Indeed, as Professor Hauser himself has admitted, "there's a lot of touchscreen features" and "literally hundreds of [other features]" came up during the consumer interviews Professor Hauser used to "design" his surveys.[29] Hauser Dep. Tr. at 59:18-60:9; 109:17-25; 18:3-9. By virtue of constituting the entire touchscreen, "feature" with only Apple's patents, survey respondents very likely misunderstood what the patents actually covered—perhaps mistakenly believing that without Apple's patents, the devices' touchscreens would not function at all.[30] In any case, because Professor Hauser's results defy common sense and contradict evidence of actual consumer sentiment and behavior, they cannot be relied upon to show consumer demand.

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any website or magazine that combines the features the way you do in your survey? A: I don't – doesn't need to – to have one.").

[26] *See* n.6 *supra*. The functionality claimed by the Three Touchscreen Patents is not disaggregated in Samsung's advertising or in popular media reviews of the relevant Samsung products. Professor Hauser's smartphone WTP estimate for the Three Touchscreen Patents is especially implausible when compared to the $152 average price survey respondents paid for their smartphone. Hauser Report ¶ 101.

[27] [redacted]

[29] Professor Hauser's failure to test the features identified as important in consumers' purchase decisions also render his results unreliable. Sukumar Rebuttal Report ¶¶ 43 ("if Professor Hauser had shown more features identified by consumers as influential to their purchasing decision, any one of the tested features may have been drowned out by a feature real-world consumers actually consider when purchasing smartphones and tablets"), 82 ("Professor Hauser's conjoint analysis omitted a variety of characteristics that matter to consumers when selecting smartphones and tablet computers . . . [b]ecause Professor Hauser has excluded important features from his analysis, his results bias and inflate the value of the features he does test.").

[30] *See, e.g.*, http://www.surveyplus.com/survey1202asps/play_video.asp?vid=31.

TABLE 1: PROFESSOR HAUSER'S MEDIAN-CONSUMER WTP ESTIMATES[31]

Feature[32]	Smartphones (Base Price $199)	Tablets (Base Price $499)
'915 + '163 + '381	$124	$97[33]
CAMERA (3 MP Rear Camera, Standard Video Recording, Autofocus base level)	$77 (8 MP Rear Camera, HD Video Recording, Autofocus) $136 (8 MP Rear Camera HD Video Recording, Autofocus, 2 MP Front Camera) $162 (12 MP Rear Camera, HD Video Recording, Autofocus, 2 MP Front Camera, Zoom)	$49 $121 $152
WEIGHT & SIZE	*3.5 in., 4 oz. base level* $28 (4 in. / 5 oz.) $26 (4.3 in. / 5.3 oz) $31 (4.5 in. / 6 oz.)	*7 in. / 1 lb. base level* $21 (8.5 in. / 1.5 lbs.) $35 (9 in. / 1.75 lbs.) $46 (10 in. / 2 lbs.)
STORAGE/MEMORY (8 GB base level)	$0.04 (16 GB) $19 (32 GB) $24 (64 GB)	$10 $52 $57
CONNECTIVITY	*Cellular, WiFi base level* $25 (Cellular, WiFi, Tethering) $75 (Cellular, WiFi, Tethering, MicroUSB) $83 (Cellular, WiFi, Tethering, MicroUSB, HDMI)	*WiFi base level* $18 (WiFi, Bluetooth) $99 (WiFi, Bluetooth MicroUSB) $117 (WiFi, Bluetooth MicroUSB, HDMI)

[31] These values are reported uncapped—nowhere in his Report did Professor Hauser reveal that he capped all values at $100, but the data and programs he produced shows the existence of such a cap. *See* wtp_sphone.sas and wtp_tablet.sas.

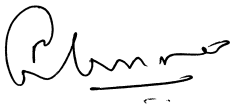
[32] The four levels of "features" included in the smartphone and tablet surveys were identical except for the "weight and size" and "connectivity" "features."

[33] Hauser Report ¶ 104, n.73 (the median WTP is $97 for the combination of '915, 163, and '381).

NUMBER OF APPS (150,000 base level)	$0.01 (300,000) $0.03 (450,000) $0.04 (600,000)	$0.01 $0.04 $0.05

19. I believe that problems in any one of the areas I have outlined herein or previously described in the Sukumar Rebuttal Report render Professor Hauser's survey results and analysis fundamentally unreliable. The fact that there are problems in numerous areas of his surveys lead me to conclude that the survey results and Professor Hauser's analysis are not credible and cannot be relied upon to show actual consumer demand.

I declare under penalty of perjury that the foregoing is true and correct. Executed in Philadelphia, Pennsylvania on October 19, 2012.



By: _____
R. Sukumar

EXHIBIT 1

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Education

1991 *Ph.D. in Business Administration*
Joseph M. Katz Graduate School of Business
University of Pittsburgh, Pittsburgh, Pennsylvania.
Major: Marketing (Stochastic Parameter Model to Understand Price and Promotion Effectiveness)

1990 *Master of Business Administration*
Joseph M. Katz Graduate School of Business
University of Pittsburgh, Pittsburgh, Pennsylvania.
Major: Marketing

1985 *Bachelor of Technology (Hons.)*
Indian Institute of Technology, Kharagpur, India
Major: Mechanical Engineering

Experience

1998- Chief Executive Officer, Optimal Strategix Group, Inc., a strategic market research and marketing consulting company focused on delivering market foresight on innovations, brand engineering, and effective marketing programs

Fall 2008 Visiting Professor, City University of New York, Baruch College

2006-2007 Visiting Associate Professor of Marketing, Rutgers Business School, State University of New Jersey, New Brunswick, NJ

2005-2006 Visiting Professor of Marketing, Robert H. Smith Graduate School of Business, University of Maryland, College Park, Maryland

2001-2005 Clinical Professor of World Business, Thunderbird,
Sam Garvin International School of Management, Glendale, Arizona
Courses taught – Data Analysis, Global Product Development, Analysis for Strategic Marketing, EMBA – Data Analysis in Taipei – Teacher Effectiveness Index from 4.3 to 4.8 on 5.0

Taught in the MBA and Executive MBA programs and Executive Education Programs. Rated the best professor in Marketing; top three in the Business School Associate Director – Thunderbird Corporate Consulting Program. Consulted with GM, Ford, J & J, among others.

1999-2001 Visiting Associate Professor of Marketing, Jones Graduate School of Management
Rice University
Taught in the MBA and the Executive MBA programs
Rated in the top three professors in the Business School

2002-03 Associate Dean for Academic Programs, The Indian School of Business
ISB is founded by partner schools Northwestern University, Kellogg Graduate School of Management; University of Pennsylvania, Wharton School of Management and London School of Business.

1990-99 Assistant Professor – Marketing & Entrepreneurship, C. T. Bauer College of Business, University of Houston.

Taught in undergraduate, graduate (MBA and Ph.D.) and Executive MBA programs
Received Distinguished EMBA Faculty Award, 1999.
Received Halliburton Excellence Award for Teaching and Service, 1996-97.

1997-2004 Vice President - Marketing Sciences, IPSOS-Insight, New York, NY (first started with the NPD Group, Inc., custom business was acquired in 2001 by IPSOS).
Role involves conducting advanced analytics, product development, conducting workshops, internal teaching, client support and research and development of new analytical tools.

Also taught at the City University of Hong Kong, Hong Kong courses on Global Product Development, Marketing Management, and Marketing Research

Teaching & Workshops

Core course in Marketing Management, Market Research and Marketing Strategy
MBA electives in Business-to-Business Marketing, Database Marketing,
Data Mining, and New Product Development

Executive MBA courses in Marketing Management and Advanced Marketing Strategy.

Taught in the Executive Certification Program in E-Commerce Management at the C. T. Bauer College of Business, University of Houston.

Conducted Workshop on Survey Research Methods at the Advanced Research Techniques Conference in Aspen, Colorado (June 1998).

Chaired two Executive workshops on "Improving the New Product Development Process: Lessons from Experts" (June 1994 and May 1995)

Chair of Executive Program on "Customer-Driven Technology New Product Development: Increasing Profits and Managing Risk through Market Research." (January 17-18, 1996)

Conducted three week course on "Managing Markets" for executives from Deutsche Telekom, Germany (October 1996)

Taught executives from Deutsche Telekom, Germany (June 1997, September 1997), from China's PetroChina (China National Petroleum Corporation) (September 1999, June 2000, September 2000).

Research Experience

Articles

"Heuristics for Product-Line Selection using Conjoint Analysis," Management Science, December 1990, Vol 36, Number 12, p. 1464-1478 (with Professor Rajeev Kohli).

"Measuring Marketing Mix Effects in the Video-Game Console Market" with Pradeep Chintagunta and Harikesh Nair (forthcoming Journal of Applied Econometrics, October 2006)

"Data Mining," in Handbook of Marketing Research, 2006 (editors, Rajiv Grover and Marco Vriens)

Research Interests

New Product (service) innovation, Market segmentation, brand loyalty, pricing, database marketing, data mining, market structure analyses.

Presented at several conferences and workshops. Most recent presentation: "Effects of Service Failure and Service Recovery on Customer Life Time Value," a joint MSI/Yale University Conference (December 2004)

Presented conference papers at Marketing Science Conferences (INFORMS). Currently, working in the area of Hierarchical Bayesian approaches to Market Segmentation based on information search criteria

Other Research Experience

Served as a Reviewer for a number of manuscripts submitted for publication to journals published by the American Marketing Association, INFORMS.
Reviewer for manuscripts submitted to Management Science, Journal of Marketing Research and Journal of Advertising.

Dissertation Committees

Ms. Charu Prakash (co-chair), Ms. V. Satya (co-chair)
Kiran Karande (member), John Gaskins (member), Rajagopal Echambadi (member), Rosalind Wyatt (member)
Rama Pakala (member, Mechanical Engineering, Master's thesis)
Shantanu Swadi (member, Mechanical Engineering, Master's thesis)

Consulting Experience

Consulted on Marketing and Market Research issues for a number of large and small organizations, including Pfizer, Genentech, AstraZeneca, Johnson and Johnson Pharmaceuticals, Abbott Laboratories, Nestle, Kraft Foods, ExxonMobil, Jiffy Lube/Pennzoil, Schlumberger-GeoQuest, Halliburton, Lucas Arts, Qwest Cyber.Solutions, Inc., Lubrizol, Shell Oil, Calgary Transit Authority, Diagnostic Systems Laboratories, Columbia/HCA, METRO Transit, Conoco and St. Luke's Episcopal Hospital.

I have worked with a number of organizations as part of class projects with student teams developing market research and marketing plans.

Conducted training programs for Reliant Energy and Communications, El Paso Energy, Deutsche Telekom, PetroChina (China National Petroleum Corporation), Shell Business Leadership Team.

Professional Affiliations

American Marketing Association, American Statistical Association, INFORMS
American Economic Association
American Psychometric Society
American Statistical Association
Econometric Society
European Marketing Association
Product Development and Management Association
President, South Central Chapter of the Product Development and Management Association. (1995-1997). Active member and Director of the Board for the Phoenix Chapter of the PDMA (1998-2004)

Expert Witness Work

- Nomadix v. HP et. Al, United States District Court, CENTRAL DISTRICT OF CALIFORNIA, WESTERN DIVISION, Case under settlement
- Apple v. Samsung, UNITED STATES DISTRICT COURT, NORTHERN DISTRICT OF CALIFORNIA
- Microsoft Corporation v. Motorola Inc., Motorola Mobility, Inc., and General Instrumentation Corporation, UNITED STATES DISTRICT COURT, FOR THE WESTERN DISTRICT OF WASHINGTON at Seattle