

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUXOTTICA OF AMERICA INC. AND META PLATFORMS, INC.,
Petitioners,

v.

SOLOS TECHNOLOGY LIMITED,
Patent Owner.

Case IPR2026-00376
Patent 12,216,339

EXHIBIT 2007

DECLARATION OF MICHAEL ALLAN MARTIN DAVIES

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I. INTRODUCTION

1. My name is Michael Allan Martin Davies. I have been retained as an expert witness to provide my independent opinion regarding the matters at issue in IPR2026-00376. I have been retained by Solos Technology Limited (“Solos”), the Patent Owner in this proceeding. The petitioners in this proceeding are Luxottica of America Inc. and Meta Platforms, Inc. (“Petitioners”).

2. I have been asked to review the Petition for Inter Partes Review of U.S. Patent No. 12,216,339 (the “’339 patent”), the declaration submitted by Petitioners’ expert, and the references cited in the Petition, and to provide opinions relevant to Patent Owner’s Preliminary Response. My opinions at this stage focus on the issues described below and are not intended to identify every reason why Petitioners have not shown the challenged claims to be unpatentable.

3. I am being compensated at my usual and customary rate for my time spent working in connection with this case. My compensation is in no way related to the outcome of this proceeding. If called as a witness, I would testify as to the statements and opinions contained in this declaration.

4. I am not a legal expert and offer no opinions on the law. However, I have been informed by counsel of the various legal standards that apply, and I have applied those standards in arriving at my conclusions.

II. QUALIFICATIONS

5. My complete qualifications and professional experience are described in my Curriculum Vitae (“C.V.”), a copy of which will be submitted with this declaration. The following is a brief summary of my relevant qualifications and professional experience.

6. I received a Bachelor of Arts and a Master of Arts in Engineering and in Electrical Sciences from St. Catharine’s College at the University of Cambridge; a Master of Engineering in Cybernetics, Robotics, and Microelectronics from the University of Durham; and a Master of Business Administration from London Business School (with Distinction). My educational work focused on engineering, physics, computer science and mathematics; cybernetics and robotics; microelectronics, including the design of microchips; and management science with particular focus on technology, innovation, and business strategy.

7. I am the Founder and Chairman of Endeavour Partners, LLC, a boutique strategy consulting and expert advisory firm. I also serve as a Senior Lecturer and Principal Investigator at the Sloan School of Management and the School of Engineering at the Massachusetts Institute of Technology (“MIT”) and teach in the Integrated Design and Management and Professional Education programs. I also serve as a Guest Lecturer at London Business School for programs involving strategy, entrepreneurship, technology, and innovation, am the

creator and director of the Business of AI program, and teach on the MBA programs.

8. For more than forty years, I have worked in wireless and broadband communications, mobile computing, wearable devices, consumer electronics, semiconductors, and related industries, and with businesses harnessing these technologies. I worked first for approximately a decade as an engineer in high-tech manufacturing, then for approximately a decade as a manager and executive focusing on the wireless, mobile, telecommunications, and Internet sectors, and for the last twenty-five years or so as an expert consultant, and as an educator and entrepreneur.

9. I have worked for a wide variety of technology and manufacturing companies on issues relating to research and development, product development, manufacturing, logistics, supply chain management, technology, strategy, and innovation. My work primarily involves the connections amongst technology, innovation, research and development, new product adoption and diffusion, consumer choice and behavior, business models, systems and platforms, and the emergence and evolution of business ecosystems.

10. I have experience working throughout the digital and mobile sectors, including at the convergence of mobile technologies, broadband Internet, consumer electronics, computing, software, semiconductors, and other digital technologies.

My work in this area extends to mobile devices including cellphones, smartphones, tablets, wearables, and cameras; communication services and networks, including wireless and broadband Internet; computers and electronic hardware, including processors, memory, sensors, semiconductors, integrated circuits, and printed circuit boards; consumer electronics; the Internet of Things (“IoT”); artificial intelligence (“AI”); robotics; and related content and software, from embedded systems to cloud services and hyperscale data centers.

11. I began my career in the manufacturing sector on the design, development, and deployment of mechanical, electrical, and high-tech products. For example, in the mid-1990s as Chief of Strategy for BellSouth NZ (now One NZ), I collaborated with Apple and Nokia on digital connectivity for the Apple Newton and then worked with Nokia on the development and testing of the Nokia Communicator 9000, the first smartphone that used digital connectivity. During my time in that role between 1992 and 1998, I also served as New Zealand’s representative to the ITU-R Task Group 8/1 on Future Public Land Mobile Telecommunications Systems, chaired the New Zealand Working Party on wireless spectrum for Personal Communications Services technologies, and was elected a Vice Chairman of the GSM Memorandum of Understanding and founded and led its 3rd Generation Interest Group. I continued to work on these and related issues involving short-range wireless communications such as Code Division

Multiple Access, Bluetooth, IEEE 802.11 and 802.15.4, Zigbee, and Near Field Communications intensively throughout the next several years into the early 2000s.

12. Since then, I have focused on mobile-, communications-, and computing-related issues, including developing effective business strategies. In particular, I have done extensive work on what is involved in designing, developing, and bringing to market complex consumer electronics, including smartphones, tablets, personal computers, and wearables; incorporating high-end technologies into constrained products; and addressing the related product-development and supply-chain issues.

13. From 2012 to 2015, I was a co-founder and the founding Chairman of Zero-360, a next-generation wearable-device and solutions company focused on unique interactions and bio-sensing capabilities. Zero-360's work included supporting behavioral change and using a cloud platform that integrated with third-party wellness programs to capture health and wearable data.

14. From 2004 to 2011, I was a co-founder, Chief Technology Officer, and Chief Executive Officer of EquuSys. EquuSys developed and commercialized a hardware electronics sensor product and accompanying software that provided real-time, real-world data. That work included the development of novel wireless protocols for high-speed asymmetric data transmission in shared spectrum.

15. From 2019 to 2025, I was a co-founder and Chief Executive Officer of WKD.SMRT, Inc. WKD.SMRT developed a solution for obtaining real-life data for clinical trials in the home by combining sensing, machine learning, and computing technologies to deliver data intended to be more precise, complete, objective, and reflective of real-world conditions.

16. I have significant experience serving as an expert consultant and witness in matters involving mobile devices, wireless communications, consumer electronics, software, and related technologies. I have served as a technical or industry expert in United States District Court cases, International Trade Commission investigations, inter partes reviews, arbitrations, and government investigations. A full list of those matters is included in my C.V.

17. My C.V. includes additional details about my education, professional background, and prior testifying experience.

III. BASES OF OPINIONS

18. In the course of conducting my analysis and forming my opinions, I have reviewed materials including those listed below:

- The Petition filed by Luxottica of America Inc. and Meta Platforms, Inc. in IPR2026-00376;
- U.S. Patent No. 12,216,339 (Ex. 1001) (the “’339 patent”);
- The prosecution history of the ’339 patent (Ex. 1002);

- The Declaration of Petitioners’ expert in IPR2026-00376 (Ex. 1003) (the “Feland Declaration”);
- U.S. Patent Publication No. 2021/0145340 (“Asukai”) (Ex. 1005);
- U.S. Patent Publication No. 2017/0255262 (“Liu”) (Ex. 1006);
- U.S. Patent Publication No. 2018/0014903 (“Shan”) (Ex. 1007);
- U.S. Patent No. 9,579,060 (“Lisy”) (Ex. 1008);
- International Patent Publication No. WO 2015/127056 (“Tanaka”) (Ex. 1009);
- The English translation of excerpts from the file history of Japanese Patent Application No. 2021-539888 (Ex. 1013);
- The English translation of Asukai’s Japanese counterpart (Ex. 1017);
- Patent Owner’s current draft Preliminary Response; and
- The exhibits and other documents cited herein.

19. In forming the opinions expressed below, I have considered the documents listed above; the relevant legal standards, including the standard for obviousness; and my own knowledge and experience based upon my work in mobile devices, wearables, sensors, wireless communications, consumer electronics, and related fields. Unless otherwise noted, all emphasis in quoted material has been added.

IV. APPLICABLE LEGAL STANDARDS

A. Level Of Ordinary Skill In The Art

20. My opinions in this declaration are based on the understandings of a person of ordinary skill in the art, which I understand is sometimes referred to as an “ordinary artisan,” or by the acronyms “POSITA” or “PHOSITA,” as of the time of the invention.

21. I understand that this is here assumed by Petitioners to be December 12, 2018, the earliest claimed priority date of the ’339 patent. *See, e.g.,* Pet., 9. For the purposes of this declaration only, I accept Petitioners’ asserted earliest effective filing date. I reserve the right to revisit the issue should the Petition be instituted.

22. I understand that the person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention, in 2018 or thereabouts. By “relevant,” I mean relevant to the challenged claims of the ’339 patent.

23. I understand that factual indicators of the level of ordinary skill in the art include the various prior art approaches employed, the types of problems encountered in the art, the rapidity with which innovations are made, the sophistication of the technology involved, and the educational background of those actively working in the field. I understand that, in assessing the level of skill of a

person of ordinary skill in the art, one should consider the type of problems encountered in the art, the prior solutions to those problems found in the prior art references, the rapidity with which innovations are made, the sophistication of the technology, the level of education of active workers in the field, and my own experience working with those of skill in the art at the time of the invention.

24. In this case, Petitioners' expert has asserted that a person of ordinary skill in the art would have had "at least a bachelor's degree in mechanical or manufacturing engineering; mechatronics; electrical engineering plus coursework in mechanical engineering, manufacturing engineering, or mechatronics; or a similar technical degree," as well as "at least 2 years of experience designing eyewear and/or consumer electronics." Ex. 1003 [Feland-Decl.] ¶ 34; *see also* Pet., 7. Petitioners' expert further states that work experience could substitute for formal education and that additional formal education could substitute for work experience. *See id.*

25. For the purposes of this declaration, I accept Petitioners' proposed qualifications of a POSITA. I reserve the right to revisit the issue should the Petition be instituted.

26. As further discussed below, my opinions as stated in this declaration are valid even if the Board adopts a somewhat higher or somewhat lower level of ordinary skill in the art. For example, as will be discussed throughout my report,

even a person with the level of knowledge or experience described by Petitioners' expert or adopted by the Board as described above would not have a reasonable expectation of success in implementing certain aspects of Petitioners' proposed modifications and combinations as of the priority date of the '339 patent.

B. My Understanding Of Legal Standards

27. When considering the '339 patent and stating my opinions, I rely on the following legal standards as described to me by the attorneys for Solos.

28. I understand that a patent claim is unpatentable if the claimed invention was anticipated by a prior art reference or would have been obvious to a person of ordinary skill in the art at the time of the purported invention.

29. I understand that anticipation requires that every limitation of the claim at issue be disclosed, either expressly or under principles of inherency, in a single prior art reference.

30. I understand that inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. Instead, it must be proved that the claim limitation not expressly found in the reference necessarily follows from what is found there.

31. I understand that an obviousness analysis involves comparing a claim to the prior art to determine whether the claimed invention would have been obvious to a person of ordinary skill in the art at the time of the invention in view

of the prior art and in light of the general knowledge in the art as a whole. I also understand that obviousness is ultimately a legal conclusion based on underlying facts of four general types, all of which must be considered: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art at the time of the invention; (3) the differences between the claimed invention and the prior art; and (4) any objective indicia of non-obviousness, including any praise of the invention.

32. I also understand that obviousness may be established under certain circumstances by combining or modifying the teachings of the prior art. Specific teachings, suggestions, or motivations to combine any first prior art reference with a second prior art reference can be explicit or implicit, but must have existed before the date of purported invention. I understand that prior art references themselves may be one source of a specific teaching or suggestion to combine features of the prior art, but that such suggestions or motivations to combine art may come from the knowledge that a person of ordinary skill in the art would have had at the time of the invention.

33. I understand that a reference may be relied upon for all that it teaches, including uses beyond its primary purpose, but also including teachings that lead away from the invention. I understand that a reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged

from following the path set out in the reference, although the mere disclosure of alternative designs does not teach away.

34. I further understand that whether there is a reasonable expectation of success in combining references in a particular way is also relevant to the analysis.

35. I understand that it is improper to use hindsight to combine references or elements of references to reconstruct the invention using the claims as a guide. My analysis of the prior art is made from the perspective of a person of ordinary skill in the art at the time of the invention.

36. I am not offering any legal opinions in this declaration nor am I qualified to do so. I only consider such legal standards in framing my opinions and conclusions as well as placing assertions made by Petitioners in the Petition into the proper context. Additionally, from a subject matter perspective, I understand that the petitioner always has the burden of persuasion regarding a challenge of patentability of an invention under an inter partes review.

V. CLAIMS AT ISSUE

37. I understand that Petitioners challenge claims 1-16 of the '339 patent on the following grounds:

- Claims 1-16 based on obviousness over Asukai (Ground 1);
- Claims 11-16 based on obviousness over Asukai and Shan (Ground 2);
- Claims 1-10 based on obviousness over Liu (Ground 3);

- Claims 11-16 based on obviousness over Liu and Shan (Ground 4);
- Claims 1-16 based on obviousness over Asukai and Lisy (Ground 5);
- Claims 11-16 based on obviousness over Asukai, Shan, and Lisy (Ground 6);
- Claims 1-10 based on obviousness over Liu and Lisy (Ground 7); and
- Claims 11-16 based on obviousness over Liu, Shan, and Lisy (Ground 8).

See, e.g., Pet., 9.

VI. OPINIONS

38. Below, I will address various issues raised by the Petition.

39. My opinions focus on whether Petitioners have shown that Asukai or Liu discloses the quoted uses of data from the specifically recited multiple sensor sources, whether the opinions of Petitioners’ expert provide a basis for the proposed uses and modifications, and whether Lisy supplies the features that are absent from Asukai or Liu. To be clear, when I use claim language—for example, “first data,” “second data,” “context,” and “state”—in discussing the prior art, I am referring to Petitioners’ proposed mappings for purposes of evaluating them unless I expressly state otherwise. In particular, my own use of this terminology does not itself indicate agreement with Petitioners’ mappings.

40. I understand that the general purpose of a Patent Owner Preliminary Response is to assist the Patent Trial and Appeal Board (the “Board”) in deciding

whether or not to institute trial—and not, for example, to offer an exhaustive list of reasons why each challenged claim has not been shown to be unpatentable in view of the cited art. Accordingly, my opinions here are generally directed to issues that run across multiple claims and grounds and are not exhaustive of every reason why the Petition fails to show every claim unpatentable.

A. Technical Considerations In Using Data From Different Sensors, And Data From An Eyewear Device

41. Independent claim 1 requires “receiving first data from a first sensor,” where “the first sensor is incorporated into the eyewear device,” and “receiving second data from a second sensor, wherein the second sensor is an external sensor.” Claim 1 further requires “analyzing a state of the user, wherein the analyzing uses the first data and the second data” and “determining a context of the user, wherein determining uses the first data and the second data” (emphasis added). Ex. 1001 [’339 Patent] 32:5-19.

42. Claim 6 similarly requires “receiving first data from a first sensor,” where “the first sensor is incorporated into an eyewear device,” “receiving second data from a second sensor, wherein the second sensor is an external sensor,” and “determining a context of the user, wherein the determining uses the first data and the second data” (emphasis added). Ex. 1001 [’339] 32:28-41.

43. Independent claim 11 similarly requires “receiving first data from a first sensor,” where “the first sensor is incorporated into the eyewear device,”

“receiving second data from a second sensor, wherein the second sensor is an external sensor,” “determining a context for the user, wherein the determining uses the first data and the second data,” and “analyzing a state of the user, wherein the analyzing uses the first data and the second data.” Ex. 1001 [’339] 32:55-33:10.

44. A POSITA would have understood that at the time of the invention, making both of the claimed types of data available to a system would not by itself accomplish “determining a context of the user” (or “analyzing a state of the user”) using data from both the claimed “first data” and the “second data,” and that using both data sources in a single determination could be considerably technically different from simply “determining a context of the user” in some other way (for example, from the “first data” only, or from the “second data” only). A POSITA would have understood the claimed determination to potentially involve an array of technical issues—including, for example, determining whether two kinds of data captured information about the same user, event, or time interval; accounting for potential differences in the kinds of data (such as sampling rate, latency, reliability, units, coordinate systems, and datums); and selecting a method for combining the data (whether at the level of raw measurements, derived features, or separate decisions). None of these issues need to be addressed when processing data only from a single sensor, and a POSITA would not have regarded addressing these issues as unusually simple at the relevant time.

45. Petitioners’ arguments concerning these requirements repeatedly depend on the declaration of Petitioners’ expert.

46. For example, in Ground 1, Petitioners address claim 1’s “analyzing a state of the user, wherein the analyzing uses the first data and the second data” by making (erroneously) the generalized assertion that:

To the extent PO argues that an embodiment does not expressly state that emotion analysis uses both eyewear-sensor and external-sensor data, that implementation would have been obvious because **their joint use** was a predictable use of complementary, known sensor inputs that **would improve confidence and reduce ambiguity**: user-worn data reflects motion, speech, gaze, biological signals, or head orientation, while external data supplies location, room-camera, or room-audio context.

See Pet., 19 (citing Ex. 1003 [Feland-Decl.] ¶¶ 101-103; Ex. 1005 [Asukai] ¶¶ 79-85, 97, 124, 196-197; Ex. 1009 [Tanaka] ¶¶ 12, 45-46) (emphasis added).

47. The assertion that the eyewear-sensor and external-sensor inputs identified by Petitioners are (1) complementary and that their joint use would (2) improve confidence and reduce ambiguity lacks foundation and is not necessarily true.

48. Petitioners’ Ground 1 similarly relies on Petitioners’ expert for “determining a context of the user, wherein determining uses the first data and the second data.” Pet., 21-25 (citing Ex. 1003 [Feland-Decl.] ¶¶ 109-117). They rely

on Petitioners' expert to (1) first assign the asserted sensor sources to two distinct and separate sources, on the eyewear and externally, and (2) then, given this assignment, to conclude that Asukai's situation and action recognition would use data from both in determining context.

49. For the sensor-data and context-determination limitations of independent claim 6, Ground 1 incorporates its treatment of claim 1 rather than presenting a separate analysis of those limitations. *See* Pet., 28-29 (citing Ex. 1003 [Feland-Decl.] ¶¶ 132-134). For the corresponding limitations of independent claim 11, Petitioners' Ground 1 again incorporates the claim 1 analysis. Pet., 34 (citing Ex. 1003 [Feland-Decl.] ¶¶ 153-154).

50. Petitioners' Ground 2 adds another reference, Shan, as part of its analysis of a separate requirement (that some claims recite "a voice interface" that is "to receive user commands") while referring back to Ground 1 for its identification of how Ground 2 allegedly teaches the claimed assignment to distinct, different and separate sources and to the uses of data from both sensors to determine context. Pet., 41-43 (citing Ex. 1003 [Feland-Decl.] ¶¶ 178-183).

51. Grounds 5 and 6 rely on Petitioners' expert to apply alleged teachings of "fusion" from another reference, Lisy, to the data selected from Asukai and, in Ground 6, to again add Shan for the voice interface. Pet., 75-77 (citing Ex. 1003 [Feland-Decl.] ¶¶ 278-286).

52. Petitioners' analysis of their Liu-based grounds is parallel in the way it appeals to and relies upon expert testimony for conclusions that lack foundation. Petitioners' Ground 3, for example, relies on Petitioners' expert for claim 1's "analyzing a state of the user, wherein the analyzing uses the first data and the second data." Pet., 50-52 (citing Ex. 1003 [Feland-Decl.] ¶¶ 199-207). They rely upon Petitioners' expert to infer joint use of data from two distinct, different and separate sources, the eyewear and the terminal (as the external source), and to characterize that use as improving accuracy, reliability, and completeness. Ground 3 also relies on Petitioners' expert for "determining a context of the user, wherein determining uses the first data and the second data." *Id.*, 52-56 (citing Ex. 1003 [Feland-Decl.] ¶¶ 208-214). They rely on Petitioners' expert to propose combining data about movement or orientation from the eyewear sensor with location, image, or environmental data from the terminal that Petitioners map to the external-sensor input. Ground 3 incorporates its context analysis for claim 6 rather than presenting separate evidence. *Id.*, 61-62 (citing Ex. 1003 [Feland-Decl.] ¶¶ 233-235). Ground 4 incorporates the same Liu analysis for the corresponding requirements of claim 11 and adds Shan for the separate voice-interface requirements. *Id.*, 62-69 (citing Ex. 1003 [Feland-Decl.] ¶¶ 238-263). Grounds 7 and 8 rely on Petitioners' expert to apply Lisy to the data selected from

Liu and, in Ground 8, to again add Shan for alleged teachings regarding a voice interface. *Id.*, 75, 78-79 (citing Ex. 1003 [Feland-Decl.] ¶¶ 278-279, 287-292).

53. Petitioners use Shan in Grounds 2, 4, 6, and 8 only to address the separate requirements concerning “a voice interface” that is “to receive user commands.” In Ground 2, Petitioners expressly state that the Asukai-Shan combination “does not alter Asukai’s disclosure of the remaining limitations” (emphasis added). Pet., 43 (citing Ex. 1003 [Feland-Decl.] ¶ 183). Ground 4 likewise relies upon Liu “[f]or the reasons explained for 1[a]-1[e]” for the requirements at issue here, while adding Shan for the voice-interface requirements. *Id.*, 62-69 (citing Ex. 1003 [Feland-Decl.] ¶¶ 238-263). Grounds 6 and 8 incorporate those uses of Shan. *Id.*, 77, 79.

54. There are typically significant differences between the data from each of the sensors at the two different locations identified by Petitioners, and the data that they can provide is not necessarily complementary.

55. A sensor “incorporated into the eyewear device” provides data from a device that moves with the user’s head and occupies a position relative to the user’s eyes, ears, and field of view. Its frame of reference is defined by this location. Depending on the sensor, the data that it provides could, for example, reflect head motion, head orientation, the visual perspective from the user’s

viewpoint, sound as perceived at the user's head, or physiological measurements taken at particular contact points.

56. An "external sensor" which is not located on the eyewear may instead be stationary, located in another device which can also move itself, worn at a different location on the user's body which is moving differently, or positioned somewhere else entirely within the environment.

57. The data from each of the claimed sensor sources will likely differ in spatial origin and frame of reference, field of view and orientation, and will likely also differ in the type of data, the accuracy of the data, the timing and noise characteristics, and the processing path for these signals. As a result, in order to use "the first data and the second data" in the same "analyzing" or "determining" operation, a designer would need to decide which measurements corresponded to the same user event, synchronize or otherwise associate them, transform them into suitable representations, account for latency and missing or conflicting data, and determine how much weight to give each source; all of these operations would take time and incur costs in processing and storing the data, and hence in size, weight and power consumption.

58. Whether performed in eyewear or in combination with eyewear, these tasks are further constrained by the small size, low weight, battery capacity, limited processing resources, heat dissipation, and communications bandwidths available

in eyewear at the time of the invention. These were significant considerations at the time of the invention, and indeed these remain important considerations to the present day.

B. Asukai's Sensor Sources And Proposed Combinations (Grounds 1-2, 5-6)

59. Petitioners' Grounds 1-2 and 5-6 advance Asukai-based theories on how their cited grounds allegedly teach the claimed "determining a context of the user, wherein determining uses the first data and the second data," where "the first data" originates from "a first sensor" that "is incorporated into the eyewear device" or "an eyewear device," and "the second data" originates from "a second sensor" that "is an external sensor." Ex. 1001 ['339 Patent] 32:5-19 (claim 1), 32:28-41 (claim 6), 32:55-33:10 (claim 11). *See* Pet., 21-25 (Ground 1 addressing the quoted requirement for claim 1), 28-29 (Ground 1 incorporating its claim 1 analysis for claim 6), 34 (Ground 1 incorporating its claim 1 analysis for claim 11), 43 (Ground 2 relying on Ground 1 for the corresponding requirements of claim 11), 75-77 (Ground 5 applying *Lisy* to the Asukai theories for claims 1-16 and Ground 6 applying *Lisy* and *Shan* to the Asukai theories for claims 11-16). For at least the reasons given in this section, I do not agree that Petitioners have shown that these grounds teach or render obvious this limitation. Accordingly, I do not agree that Petitioners have shown the claims challenged under these grounds to be obvious.

60. Petitioners’ Ground 1 theory begins with Asukai’s “sensor unit 122.” Asukai states that its “input unit 120” includes sensor unit 122, Ex. 1005 [Asukai] ¶ 95, and describes sensor unit 122 as “a sensor that senses various types of sensing data for recognizing a user situation or a user action.” It recites a wide variety of sensors with different and diverse characteristics and types of data that the sensor unit 122 may provide, including a camera, a microphone, a gyro sensor, an acceleration sensor, a geomagnetic sensor, a biological sensor, a location-information acquisition unit (which may use GNSS or sense location using Wi-Fi, Bluetooth, communication with a mobile device, or near-field communication), an environmental sensor, or an ultrasonic or infrared sensor. *Id.*, ¶ 97.

61. Asukai further states that its situation recognition unit 101 may recognize the situation by referring to data from a “sensor device (surveillance camera, surveillance microphone, or the like) installed in the vicinity, or the like” “in addition to the sensing data sensed by the sensor unit 122.” Ex. 1005 [Asukai] ¶ 81.

62. Separately, its action recognition unit 102 recognizes user actions from data “sensed by the sensor unit 122.” Ex. 1005 [Asukai] ¶ 84.

63. Petitioners map sensor-unit data to the claimed “first data” when it comes from an eyewear-incorporated sensor and map external-sensor data to the claimed “second data.” Pet., 21-22 (citing Ex. 1003 [Feland-Decl.] ¶¶ 109-110;

Ex. 1005 [Asukai] ¶¶ 79, 81, 84). The designation “sensor unit 122” does not itself establish that a sensor is confined to the eyewear: Asukai permits that unit to be provided in an external device or in both the information processing device and an external device. Ex. 1005 [Asukai] ¶ 103. Petitioners identify categories of context in the ’339 patent and characterize Asukai’s situation recognition as “situation/environment recognition.” Pet., 8, 22. Asukai itself states that its situation recognition unit “recognizes an environment in which the user is placed as a situation.” Ex. 1005 [Asukai] ¶ 79. Petitioners treat that recognition and Asukai’s action recognition as functions that “determine user context.” Pet., 22. Their mapping nonetheless depends on establishing the proposed sensor-source assignments. The Petition states that “where sensor-unit data includes first data from the eyewear-incorporated sensor and external-sensor data includes second data, Asukai discloses determining context using both.” Pet., 22 (citing Ex. 1003 [Feland-Decl.] ¶ 110). That conditional statement does not itself identify the particular source assignments in the examples discussed below. Petitioners also offer the following alternative obviousness argument:

To the extent PO disputes that an example uses that pairing, Asukai renders it obvious by teaching sensor data from both information processing device 10 and external devices, a known-input combination that predictably improves confidence and reduces ambiguity.

Pet., 22 (citing Ex. 1003 [Feland-Decl.] ¶ 111; Ex. 1005 [Asukai] ¶¶ 69, 81, 103).

64. Petitioners’ assertion that this predictably improves confidence and reduces ambiguity lacks foundation and is not necessarily true.

1. Commuting Example

65. Petitioners discuss what they term a “commuting example” in Asukai. In Asukai’s commuting example, Petitioners assign acceleration data from what Asukai calls “an acceleration sensor on the head” to “first data” from a sensor “incorporated into the eyewear device,” and assign location data to “second data” from an “external sensor.” Pet., 23 (citing Ex. 1003 [Feland-Decl.] ¶¶ 113-114; Ex. 1005 [Asukai] ¶ 115).

66. Asukai lists a “location information acquisition unit” among the possible components of sensor unit 122, but membership in that unit does not establish the sensor’s physical location. Ex. 1005 [Asukai] ¶¶ 97, 103. In discussing commuting, Petitioners refer back to Sections VII.A.2-3 of the Petition for their source assignments. Pet., 23. On page 16, the Petition identifies “a global navigation satellite system (GNSS) or smartphone providing location information” based on Asukai’s paragraph 97. That paragraph states that the location information *acquisition* unit may sense location by “performing transmission and reception with a mobile phone, a personal handyphone system (PHS), a smartphone, or the like,” among other techniques. Ex. 1005 [Asukai] ¶ 97. That wording does not expressly identify a smartphone’s own location sensor as the

source used in the commuting example. Paragraph 69 also permits sensors to be implemented by a communicatively connected smartphone, and paragraph 103 permits external or distributed placement of sensor unit 122. *Id.*, ¶¶ 69, 103. Those disclosures provide placement options, but do not specify which location-information source supplies the commuting example in paragraph 115. In a different example, Asukai expressly uses “location information of a GPS of the HMD” together with acceleration-sensor information. *Id.*, ¶ 160.

2. Parenting Example

67. Discussing what they term the “parenting example” in Asukai, Petitioners assign HMD-microphone data to “first data” and identify room-camera video and/or room-microphone audio as “second data.” They propose using HMD-microphone data with the selected external input or inputs in what they identify as a context determination. Pet., 24-25 (citing Ex. 1003 [Feland-Decl.] ¶¶ 115-117; Ex. 1005 [Asukai] ¶¶ 196-197).

68. In the parenting example, paragraphs 196-197 separately describe room-camera analysis, scolding recognition using an unspecified microphone, and emotion recognition using facial-expression, pulse-rate, or voice data. They do not expressly describe joint use of the HMD-microphone and room-microphone recordings. Nor do they identify the HMD microphone as the source of the

scolding-recognition data that Petitioners propose using with room-camera video in their context mapping. Ex. 1005 [Asukai] ¶¶ 196-197; Pet., 24-25.

69. A POSITA in 2018 would have understood that recordings from microphones on different devices or in different parts of an environment are not automatically suitable for joint audio processing.

70. Asukai's disclosure is consistent with that understanding. For emotion recognition, Asukai states that uttered voice data may be acquired from "a microphone installed in the room or a microphone of an HMD worn by the parent." Ex. 1005 [Asukai] ¶ 197. For recognizing scolding, however, Asukai says only that the voice is "collected from a microphone." *Id.*

[T]he action recognition unit 102 of the information processing device 10e can analyze an uttered voice of the parent collected from a microphone and recognize that the parent is scolding the child.

Ex. 1005 [Asukai] ¶ 197.

71. A POSITA would understand that distinction as leaving the source of audio data for scolding recognition unspecified, not as requiring the HMD microphone identified for a different operation. The general observations about speech direction and audio acquisition offered by Petitioners' expert, Ex. 1003 [Feland-Decl.] ¶¶ 78, 92, do not explain why a POSITA would select the HMD microphone for recognizing scolding.

72. Microphones at different locations typically do not yield recordings that are easily combined for joint analysis. Even when they record the same sound, signals from different microphones will differ in volume level, their frequency response, the amount and nature of noise, and the relative levels of the signal of interest and the noise, and their timing.¹ Integrating the different data streams from two distinct and separate microphones requires signal processing, which involves a real-world cost.

73. Asukai describes distinct situation-, action-, and emotion-recognition functions in the parenting example, not a mandatory sequential rather than parallel architecture. Asukai expressly permits situation recognition and action recognition to occur in the reverse order or in parallel. Ex. 1005 [Asukai] ¶¶ 107, 161, 187. For the parenting situation, unit 101 compares video from a room camera before and after cleaning. *Id.*, ¶ 196. For the parent's scolding action, unit 102 analyzes voice data collected from an unspecified microphone. *Id.*, ¶ 197. The separate emotion recognition unit 105 is then described as follows:

[T]he emotion recognition unit 105 of the information processing device 10e can identify that the emotion of the parent is negative based on a facial expression of the parent analyzed from a video of a camera installed in the room, a pulse rate acquired from a smart band worn by

¹ It typically takes between 10 milliseconds and 20 milliseconds for sound to cross a room, which at a typical audio sampling rate of 44 kHz corresponds to between ~400 and ~900 samples.

the mother, or a voice recognition result of uttered voice data acquired from a microphone installed in the room or a microphone of an HMD worn by the parent.

Ex. 1005 [Asukai] ¶ 197 (emphasis added).

74. Asukai does describe using multiple inputs within a recognition operation. Its situation recognition can use location, moving speed, and acceleration data, and can use nearby-sensor information “in addition to” sensor-unit data. Ex. 1005 [Asukai] ¶¶ 79, 81. It also describes recognizing a hitting action from both HMD acceleration-sensor data and HMD-camera video. *Id.*, ¶ 157. Those disclosures do not expressly identify the HMD microphone as the microphone used to recognize scolding, or describe joint use of the room-microphone and HMD-microphone recordings in that operation, in the parenting example. *Id.*, ¶ 197.

75. Critically, combining data from a sensor worn on an HMD with a different type or source of data in a specific location would involve costs in terms of communications bandwidth, processing power, heat and battery life (*see* ¶¶ 55-58 *supra*), none of which I find addressed by Petitioners or Petitioners’ expert.

76. For at least these reasons, a POSITA would not understand Asukai’s references to different locations of microphones as a teaching to use both microphones together. Asukai’s paragraph 197, for example, presents the room microphone and the HMD microphone as alternative sources for the separate

operation of recognizing emotion and does not describe synchronizing or combining the room-microphone and HMD-microphone recordings for recognizing scolding. Ex. 1005 [Asukai] ¶ 197.

3. Proposed Application Of Lisy To Asukai (Grounds 5-6)

77. Petitioners expressly offer their Lisy-Asukai Grounds 5-6 in the following terms:

Grounds 5-8 provide an additional obviousness basis to the extent PO disputes the joint use of sensor-derived data for the claimed state analysis and context determination, including the use of eyewear-sensor first data with external-sensor second data and, for claim 16, the use of first data with third data from a plurality of embedded sensors.

Pet., 75 (citing Ex. 1003 [Feland-Decl.] ¶¶ 278-279). For at least the reasons given in this section, I do not agree that Petitioners have shown that the proposed addition of Lisy in Grounds 5-6 teaches or renders obvious “determining a context of the user, wherein determining uses the first data and the second data,” as recited in claim 1, or the corresponding limitations of claims 6 and 11. Accordingly, I do not agree that Petitioners have shown the claims challenged under Grounds 5-6 to be obvious.

78. Lisy is directed principally to acquiring and processing physiological signals through head-mounted and other wearable devices, including addressing signals that may be noisy or contain artifacts during physical activity and deriving physiological measurements or metrics from those signals. Ex. 1008 [Lisy] 1:13-

43, 2:27-44, Fig. 14. Lisy also states at a high level that its invention “fuses data” from sensors on different devices to provide a “more complete and robust set of data,” recommendations, or warnings. *Id.*, 4:2-9.

79. Petitioners’ expert asserts that “the more data points that are provided about the user’s emotional state, the more precise the determination will be.” Ex. 1003 [Feland-Decl.] ¶ 283. I do not agree.

80. The extent to which additional different and diverse data sources from sensors that provide the basis for determining a user’s context or state provide greater “precision”² depends on both the characteristics of the data sources and the specific circumstances. Some data sources may introduce additional noise, or when processed may provide confounding or conflicting information, which may in turn increase the ambiguity or reduce the confidence with which a result can be determined. And, as described above, combining different and disparate data sources necessarily involves careful and thoughtful design of the system, its algorithms, and hardware and software, and involves real-world costs. *See supra* ¶¶ 57-58; Ex. 1008 [Lisy] 51:49-52:49, Figs. 13-14. This is particularly the case when combining data from sensors on an HMD, with their real-world constraints in terms of sensing, processing and storing data, with data from external sensors, such

² The source uses the term “precision”; I am embracing it in its sense as a synonym for “accuracy.”

as sensors on other devices or in other locations. Petitioners’ aspirational statement that Lisy would provide a “more complete and robust set of data” in the context of Asukai, Pet., 76 (quoting Ex. 1008 [Lisy] 4:2-9), does not address these considerations.

81. Petitioners’ expert further calls “applying Lisy’s sensor-fusion architecture to the eyewear of Asukai” “a straightforward use of known data-processing techniques.” Ex. 1003 [Feland-Decl.] ¶ 284. Lisy’s Figures 13-14 describe acquiring and processing sensor signals, deriving measurements, and fusing data for feedback and other outputs. Ex. 1008 [Lisy] 51:49-52:49, Figs. 13-14.

82. Lisy depicts and describes signals being acquired from physiological or secondary/environmental sensors, subjected to filtering, artifact detection and removal, processed through biological-signal or spectrum analysis, and passed through derivation algorithms *before* “Data from sensors [is] fused.” Ex. 1008 [Lisy] 51:49-52:49, Fig. 14. A POSITA would understand from that sequence that an implementation of Lisy could involve a significant amount of signal processing, that this signal processing would depend on the signal types and intended output, and that unit cost, processing requirements, storage capacity, power management and battery life concerns would be involved in making these decisions.

83. Although Lisy describes a very broad spectrum of potential combinations of devices (10 types of devices), sensors (15 types of sensors) as data sources, to provide several possible derived measurements (9 types of derived measurements) and several types of actuators (7 types of actuators) for a very broad variety of use cases, Lisy provides no guidance on how these decisions would be made in Petitioners’ proposed example. Nor do I see Petitioners or Petitioners’ expert providing any such analysis. Without such analysis—that is, without an identification of exactly *how* Petitioners propose to apply Lisy’s “fusion teachings” to Asukai (Pet., 76)—I cannot assess Petitioners’ argument that a POSITA would have been motivated to make such an application, let alone do so with a reasonable expectation of success. *Cf.* Pet., 76-77. Accordingly, in my opinion, Petitioners have not shown how their Lisy grounds render the challenged claims obvious.

C. Liu’s Sensor Sources And Proposed Combinations (Grounds 3-4, 7-8)

84. Petitioners’ Grounds 3-4 and 7-8 advance Liu-based theories on how their cited grounds allegedly teach the claimed “determining a context of the user, wherein determining uses the first data and the second data,” where “the first data” originates from “a first sensor” that “is incorporated into the eyewear device” or “an eyewear device,” and “the second data” originates from “a second sensor” that “is an external sensor.” Ex. 1001 [’339 Patent] 32:5-19 (claim 1), 32:28-41 (claim

6), 32:55-33:10 (claim 11). *See* Pet., 52-56 (Ground 3 addressing the quoted requirement for claim 1), 61-62 (Ground 3 incorporating its claim 1 analysis for claim 6), 69 (Ground 4 incorporating the Ground 3 analysis for the corresponding requirements of claim 11), 75, 78-79 (Ground 7 applying *Lisy* to the *Liu* theories for claims 1-10 and Ground 8 applying *Lisy* and *Shan* to the *Liu* theories for claims 11-16). For at least the reasons given in this section, I do not agree that Petitioners have shown that these grounds teach or render obvious this limitation. Accordingly, I do not agree that Petitioners have shown the claims challenged under these grounds to be obvious.

85. Petitioners identify sensors and modules in *Liu*'s smart eyewear 110, possible sensors and functions in terminal 130, and *Liu*'s statement that terminal 130 may form a "binding relationship" with the eyewear and share the burden of collecting, storing, or processing data. Pet., 52-54 (citing Ex. 1003 [*Feland-Decl.*] ¶¶ 208-211; Ex. 1006 [*Liu*] ¶¶ 16-17, 22-23, 30, 34-38, 47-49, 53, 59, 61).

86. A POSITA would distinguish between a component's general ability to receive or process data and the inputs used for a particular determination. *Liu* makes that distinction. For movement and orientation, *Liu* identifies IMU signals from its sensor module 350. Ex. 1006 [*Liu*] ¶ 47. For trajectory, it identifies GPS signals from its locating module 370 together with movement data. *Id.*, ¶ 48. For movement and accident determinations involving the surroundings, it identifies

imagery from its imaging module 360 and, for the accident determination, movement data. *Id.*, ¶¶ 49-50. Those descriptions of the inputs tell a POSITA what data the disclosed determinations use.

87. Liu’s paragraph 30 does not expressly add terminal data to those determinations. It states more generally that Liu’s controller may exchange data with its terminal and process or store the received data. Ex. 1006 [Liu] ¶ 30. A POSITA would not understand that general capability, without more, to establish that a determination described as using data from Liu’s eyewear also uses data from a sensor in its terminal.

88. Petitioners alternatively state:

To the extent PO argues Liu does not expressly state that eyewear- and terminal-sensor data are jointly used in the same context determination, using them together would have been obvious.

Pet., 54 (citing Ex. 1003 [Feland-Decl.] ¶ 212).

89. Petitioners’ expert proposes evaluating eyewear movement or orientation data together with terminal location, image, or environmental data in Liu because the selected sources in Liu would be “complementary” and would improve accuracy. Pet., 54-56 (citing Ex. 1003 [Feland-Decl.] ¶¶ 212-214).

90. As described above, the generalized assertion that combining supposedly complementary data sources increases accuracy, improves confidence and reduces ambiguity is not necessarily true, and combining those sources also

involves additional design effort regarding algorithms, signal processing, hardware and software and involves costs in terms of communications, processing, storage and power consumption. *See supra* ¶¶ 44, 54-58, 79-83. I do not see these issues addressed by Petitioners or by Petitioners' expert.

1. Proposed Application Of Lisy To Liu (Grounds 7-8)

91. Petitioners expressly offer their Lisy-Liu Grounds 7-8 in the following terms:

Grounds 5-8 provide an additional obviousness basis to the extent PO disputes the joint use of sensor-derived data for the claimed state analysis and context determination, including the use of eyewear-sensor first data with external-sensor second data and, for claim 16, the use of first data with third data from a plurality of embedded sensors.

Pet., 75 (citing Ex. 1003 [Feland-Decl.] ¶¶ 278-279).

92. Petitioners' application of Lisy to their Liu grounds, however, is not significantly different from Petitioners' application of Lisy to their Asukai grounds. *Compare, e.g.,* Pet., 76 (describing the combinations of Lisy and Asukai as "apply[ing] Lisy's multi-sensor fusion teachings to Asukai's eyewear-based information-processing system") *with* Pet., 78 (describing the combinations of Liu and Lisy as "apply[ing] Lisy's multi-sensor fusion teachings to Liu's smart-eyewear sports-management system"); *compare, e.g.,* Pet., 76 (arguing that "Lisy's

fusion approach would have predictably enhanced” Asukai) *with* Pet., 78 (arguing that “Lisy’s fusion approach would have predictably enhanced” Liu).

93. Where Petitioners do discuss Liu and Lisy in a way that is somewhat specific to Liu, they do not provide meaningful detail. Petitioners’ predictions of improved determinations, for example, do not explain what the proposed terminal input would add to Liu’s movement, location, or emergency determinations.

Ex. 1003 [Feland-Decl.] ¶¶ 287, 289. Likewise, Petitioners’ expert’s discussion of Lisy’s “natural anchor points” and Liu’s “temple or brow bar” concerns only the mere placement of sensors in eyewear. *Id.*, ¶¶ 288, 290. Such discussion does not offer a motivation for why a POSITA would have been motivated to use terminal-sensor data in the identified determinations.

94. Accordingly, for the same reasons discussed in connection with Lisy and Asukai, *see* Section VI.B.3, *supra*, I do not agree that Petitioners’ Lisy-based combinations with Liu cure the defects already identified in connection with Petitioners’ single-reference Liu ground. In particular, I do not agree that Petitioners have shown that the proposed addition of Lisy in Grounds 7-8 teaches or renders obvious “determining a context of the user, wherein determining uses the first data and the second data,” as recited in claim 1, or the corresponding limitations of claims 6 and 11, and I do not agree that Petitioners have shown that a POSITA would have been motivated to combine Lisy with Liu (and other

references) with a reasonable expectation of success—for example, because Petitioners never expressly identify exactly how Lisý’s alleged teachings would be applied to Liu, and an assessment of the alleged motivation of the POSITA would depend on such information. For at least these reasons, I also do not agree that Petitioners have shown the claims challenged under Grounds 7-8 to be obvious.

VII. CONCLUSION

95. At this stage of the proceeding, my opinions are preliminary—in particular, they do not address every question relating to the patentability of the challenged claims over the cited references, or every opinion expressed in the Feland Declaration. I reserve the right to supplement or amend my opinions if this proceeding is instituted or if additional information becomes available.

96. For the foregoing reasons, based on my expertise and experience and the materials I have reviewed, I do not agree that Petitioners have shown that any of the challenged claims 1-16 of the ’339 patent would have been obvious to a POSITA under Grounds 1-8. *See generally* Sections VI.A-C, *supra*.

97. In particular, I do not agree that Petitioners have shown that the cited references, alone or in the proposed combinations, teach or render obvious “determining a context of the user, wherein determining uses the first data and the second data,” as recited in claim 1, or the corresponding limitations of claims 6 and 11, with the first data received from an eyewear-incorporated sensor and the

second data received from an external sensor. *See generally* Sections VI.B-C, *supra*.

98. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

99. I hereby declare that all statements made herein of my own knowledge are true and all statements made herein on information and belief were and are believed by me to be true, and that all statements herein were and are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that any such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Respectfully submitted,

Dated: September 23, 2026



Michael Allan Martin Davies

Appendix A

Michael A M Davies

Chairman, Endeavour.Partners

Senior Lecturer, Massachusetts Institute of Technology

Guest Lecturer, London Business School

Doctoral Candidate, SDA Bocconi

Specialist expertise

Michael Davies' specialist expertise and relevant experience cover the technical, business, strategic, economic, and policy issues involved in Artificial Intelligence, digital and other deep tech, including large and complex hardware and software systems, mobile devices, communications networks (wireless, broadband and satellite), consumer electronics, the Internet of Things (IoT), electronic components, and semiconductors:

- the technical and economic aspects of communication networks and computing services, in particular broadband cellular, fiber optics, packet networks, cloud services, 'edge computing', satellite networks, audio and video codecs, payment systems, IoT, and smart home technologies
- the technical and economic aspects of state-of-the art electro-mechanical devices, systems, and components that combine hardware and software, in particular mobile devices and systems, consumer electronics, personal computing and cloud computing, data centers, hardware manufacturing, semiconductors, and the related supply chains
- consumer behavior and segmentation and the adoption and diffusion of novel products
- creative business models, co-opetition, and building platforms and orchestrating business ecosystems, including open innovation, open source, shared infrastructure, and other ground-breaking approaches
- the technical and economic aspects of systems, platforms, architecture, modularity, and bottlenecks, in particular as this relates to complex products and services that combine software, computing, and communications
- strategy and management for R&D, technological innovation and product creation, including the work of knowledge-intensive technical teams, such as R&D staff effective work practices; and the economics of innovation and intellectual property (trade secrets, patents, and licensing strategies)
- decision-making under uncertainty, agile methods, and building resilience

Relevant experience

Michael has worked for more than forty years in the digital and high tech sectors, for vendors, organizations harnessing technology, and government agencies.

His experience spans the design, development, and deployment of mechanical, electrical, electronic, digital and other high-tech products and services; manufacturing; software coding; video; supply chain management; technology and innovation; research and development; product creation; adoption and diffusion; business strategy and strategic leadership.

Endeavour.Partners provides services to a broad range of global business leaders:

- providing expert advisory services and testimony on matters related to public policy, intellectual property, and commercial relationships within the Artificial Intelligence (AI), mobile, wireless, networking, semiconductor, software, cloud computing and other digital sectors

- providing consulting services on innovation and business strategy to companies throughout the mobile, wireless, computing and semiconductor sectors, including device vendors, network operators (wireless, broadband, fiber and satellite and service providers), and their suppliers
- consulting services to businesses harnessing and humanizing AI and other digital and other deep technology to create new value, and build widespread prosperity

As a Senior Lecturer at MIT, Michael:

- created and taught courses in fundamental and advanced topics in technology strategy, systems engineering, leadership of high-tech businesses, and integrated design and product development process in both the School of Engineering (in Aero/Astro) and in the Sloan School of Management
- teaches creative innovation, value creation, emerging technologies, product management, product marketing, basic finance and business models, pricing and marketing, competitive analysis, market opportunity identification, funding entrepreneurship, data-driven decision-making, and decision-making under uncertainty
- created and leads, with colleague Blade Kotelly, Breakthrough Innovation: Harnessing AI + to Create Value
- created and leads with Neil Thompson of the Computer Science and Artificial Intelligence Laboratory the pioneering program for MIT on Building Responsible AI, Machine Learning, and GPTs, which is expanding in 2026
- also teaches MasterClasses on AI and Ethics, and on Leadership in the Age of AI across most of MIT's major certificate and other flagship programs, including the Technology Leadership Program (TLP), and the Chief Technology Officer, Chief Product Officer, Chief Digital Officer and Chief Sustainability Officer programs
- is the Course Director for two new online programs, AI Engineering (focused squarely on the end-to-end design, development, deployment and handover to operations of high performance, responsive, cost-effective and robust state-of-the-art Generative AI and Agentic AI systems), and Agentic AI Strategy for Leaders

As a Guest Lecturer at the London Business School, Michael:

- created and for fifteen years taught the New Technology Ventures program, which enables emerging entrepreneurs to evaluate novel ideas and inventions and turn them into new technology ventures
- created and serves as course Academic Director for the path-breaking course on The Business of Artificial Intelligence (AI)

As the Founder and erstwhile Chairman of Silverthread Inc, Michael:

- founded a company that helps clients diagnose and improve the economics of maintaining, evolving, and developing very large-scale software systems

As the Founder and Chief Executive Officer of WKD.SMRT, Michael:

- led a company that was seeking to accelerate innovation in healthcare by provide more powerful real-life data for clinical trials, through a solution that combined state-of-the-art technologies in sensing, machine learning, and computer processing

Education**St Catharine's College, University of Cambridge****1979–1982**

Bachelor of Arts (1982) and Master of Arts (1987)

- Electrical Sciences Tripos (Computer Science, Mathematics, Engineering, and Physics)
- Engineering Part I and Part II

University of Durham, UK**1982–1984**

Master of Engineering

- Microelectronics
- Cybernetics and Robotics
- Management Science

London Business School**1989–1991**

Master of Business Administration (With Distinction)

- Specialized in Business Strategy, Technology Management, and Decision Sciences
- Participated in the PhD Program on Systems Dynamics

Harvard Business School

- Post-graduate study in Innovation & Organizations

SDA Bocconi School of Management**2026-2029**

- Pursuing Doctor of Business Administration in Cohort 10

Expert Reports and Testimony ExperienceUnited States of America et al v AT&T Inc et al.

- Department of Justice anti-trust investigation, Civil Action No. 11-01560 (ESH)
- Industry Expert: Antitrust
- Expert Report (2011)

Apple Inc v Samsung Electronics America Inc, Samsung Telecommunications America LLC, and Samsung Electronics Co Ltd

- International Trade Commission Investigation No. 337-TA-796
- Industry Expert: Public Interest
- Expert Declaration (2013)

Ericsson Inc and Telefonaktiebolaget LM Ericsson v Samsung Electronics America Inc, Samsung Telecommunications America LLC, and Samsung Electronics Co Ltd

- International Trade Commission Investigation No. 337-TA-862
- Industry Expert: Public Interest

- Expert Report, Rebuttal Expert Report, Deposition Testimony, Hearing Testimony (2013)

Samsung Electronics Co Ltd and Samsung Telecommunications America LLC v Ericsson Inc and Telefonaktiebolaget LM Ericsson

- International Trade Commission Investigation No. 337-TA-866
- Industry Expert: Public Interest
- Expert Report, Rebuttal Expert Report, Deposition Testimony, Hearing Testimony (2013)

InterDigital Communications Inc, InterDigital Technology Corporation IPR Licensing Inc, and InterDigital Holdings v Samsung Electronics America Inc and Samsung Telecom America LLC

- International Trade Commission Investigation No. 337-TA-868
- Industry Expert: Public Interest
- Expert Report, Rebuttal Expert Report, Deposition Testimony, Hearing Testimony (2013)

Sasken Communication Technologies Limited v Spreadtrum Communications Inc and Spreadtrum Communications USA

- American Arbitration Association, International Centre for Dispute Resolution No. 50-117-T-0092-12
- Technical Expert and Industry Expert: Arbitration
- Expert Report, Deposition Testimony, Hearing Testimony (2013)

On Track Innovations LTD v T-Mobile USA Inc

- United States District Court, Southern District of New York No. 12-cv.02224-AJN-JCF
- Technical Expert
- Expert Report, Deposition Testimony (2013-2014)

Hand Held Products Inc v Amazon.com Inc et al.

- United States District Court, District of Delaware No. 1:12-CV-00768-RGA-MPT
- Technical Expert
- Expert Report, Code Analysis (2014)

Enterprise Systems Technologies SARL v Samsung Electronics America Inc, Samsung Electronics Co Ltd, and Samsung Telecommunications America LLC

- International Trade Commission Investigation No. 337-TA-925
- Industry Expert: Public Interest
- Expert Report, Deposition Testimony (2015)

NVIDIA Corporation v Samsung Electronics America Inc, Samsung Electronics Co Ltd, and Samsung Telecommunications America LLC

- International Trade Commission Investigation No. 337-TA-932
- Industry Expert: Public Interest
- Expert Report, Deposition Testimony, Hearing Testimony (2015)

Nokia Corporation v Samsung Electronics Co Ltd

- Arbitration, International Chamber of Commerce No. 19602/AGF/RD (c.19638/AGF)
- Industry Expert and Technology Expert: intellectual property, patent royalties
- Expert Report, Deposition Testimony, Hearing Testimony (2015)

Ericsson Inc and Telefonaktiebolaget LM Ericsson v Apple Inc

- International Trade Commission Investigation No. 337-TA-952
- Industry Expert: Public Interest
- Expert Report, Deposition Testimony, Hearing Testimony (2015)

Core Wireless Licensing SARL v LG Electronics Inc and LG Electronics Mobilecomm USA Inc

- United States District Court, Eastern District of Texas No. 2-14-cv-00911-JRG-RSP
- Technical Expert
- Expert Declaration, Expert Report, Deposition Testimony (2015)

St. Lawrence Communications v ZTE Corporation

- United States District Court, Eastern District of Texas No. 2:15-cv-394-JRG and 2:15-cv-00351-JRG
- Technical Expert
- Preliminary work performed; case settled (2016)

ParkerVision Inc v Apple Inc, Samsung Electronics Co Ltd, Samsung Electronics Inc, LG Electronics Inc, LG Electronics Mobilecomm USA Inc, and Qualcomm Inc

- International Trade Commission Investigation No. 337-TA-982
- Industry Expert: Public Interest
- Expert Report, Deposition Testimony (2016)

T-Mobile USA Inc v Huawei Device USA Inc and Huawei Technologies Co Ltd

- United States District Court, Western District of Washington No. 14-cv-01351-RAJ
- Industry Expert: Trade Secrets
- Expert Report, Deposition Testimony (2016), Declarations, Trial Testimony (2017)

Immersion Corporation v Apple Inc and AT&T Mobility LLC

- International Trade Commission Investigation No. 337-TA-1004/990
- Industry Expert: Public Interest
- Expert Report (2016), Deposition Testimony, Hearing Testimony (2017)

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- Industry Expert: Public Interest

- Expert Report, Deposition Testimony, Hearing Testimony (2017)

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- Industry Expert: Public Interest
- Expert Report, Deposition Testimony (2017)

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- International Trade Commission Investigation No. 337-TA-1053
- Technical Expert
- Inter Partes Review, Expert Report, Rebuttal Report, Deposition Testimony (2017)

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- Technical Expert
- Preliminary work

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- United States District Court, Northern District of California No. 16-cv-02787-WHO
- Technical Expert: Standards Essential Patents
- Expert Report (2018)

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- United States District Court, Eastern District of Texas No. 2:17-CV-00442-JRG
- Technical Expert
- Expert Report (2018)

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- International Trade Commission Investigation No. 337-TA-1097
- Industry Expert: Public Interest
- Expert Report, Deposition Testimony (2018)

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- United States District Court, District of Columbia No. 1:19-cv-02232-TJK
- Technical Expert and Industry Expert: industry background, anti-trust, economics
- Expert Report, Model (2018)

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- United States District Court, Southern District of New York No. 1:18-cv-09518-JSR

- Technical Expert and Industry Expert: intellectual property, patent royalties
- Expert Declarations, Expert Report (2019)

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- United States District Court, Eastern District of Texas 2:2018-cv-00390-RWS-RSP and 2:19-cv-00317-JRG-RSP
- Technical Expert and Industry Expert: Trade Secrets, Intellectual Property, Inter Partes Review, Indicia of Non-obviousness
- Expert Reports (2020)

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- International Trade Commission Investigation No. 337-TA-1162 and No. 337-TA-1193
- Industry Expert: Public Interest
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- Arbitration, International Chamber of Commerce No. 25115/dda
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- Eastern District of New York Docket No. 18-CR-457 (AMD)
- Industry Expert: Theft of trade secrets, and conspiracy to steal trade secrets
- Advisory capacity (2020)

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- JAMS Arbitration No. 1220062943
- Technical Expert and Industry Expert: Arbitration
- Expert Report, Deposition Testimony, Hearing Testimony (2020)

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- International Trade Commission Investigation No. 337-TA-1208
- Industry Expert: Public Interest, Domestic Industry, Bonding
- Expert Report, Deposition Testimony (2020)

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- International Trade Commission Investigation No. 337-TA-1253
- Industry Expert: Public Interest

- Expert Report, Deposition Testimony (2021)

Competition Bureau of Canada in the matter of Rogers Communication and Shaw Communication

- Industry Expert: Public Interest
- Expert Report for §104 Injunction
- Expert Report for §92 Hearing
- Testimony at Competition Tribunal
- Affidavit for Stay and Injunction for Appeals Court Canada (2021)

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- International Trade Commission Investigation No. 337-TA-1280
- Industry Expert: Public Interest
- Expert Report, Rebuttal Expert Report, Deposition Testimony (2021)

Ericsson Inc v Apple Inc

- International Trade Commission Investigation No. 337-TA-1299, -1300 and -1301
- Industry Expert: Public Interest
- Expert Report, Rebuttal Expert Report, Deposition Testimony, Hearing Testimony (2022)

AliveCor Inc v Apple Inc

- International Trade Commission Investigation No. 337-TA-1266
- Industry Expert: Public Interest
- Declaration on Public Interest (2022)

Arigna Technology Limited v Apple Inc

- International Trade Commission Investigation No. 337-TA-1308
- Industry Expert: Public Interest
- Expert Report, Rebuttal Report, Deposition Testimony (2022), Hearing Testimony (2023)

United States of America at al. v Google LLC

- United States District Court, District of Columbia No. 1:20-cv-03010-APM
- Technical Expert and Industry Expert: industry background, anti-trust
- Expert Report, Reply Report, Deposition Testimony (2020)

United States of America, Department of Justice, Anti-Trust Division, Media, Entertainment and Communications Section

- Anti-trust investigation in the communications services sector
- Industry Expert and Technical Expert: Anti-trust
- Advisory capacity (2022)

Daedalus Prime LLC v Samsung Electronics Co Ltd, Samsung Telecommunications America LLC, and Qualcomm Incorporated

- International Trade Commission Investigation No. 337-TA-1335
- Industry Expert: Public Interest
- Expert Report (2022)

Daedalus Prime LLC v Samsung Electronics Co Ltd, Samsung Electronics America Inc, Taiwan Semiconductor Manufacturing Company Limited, and TSMC North America

- International Trade Commission Investigation No. 337-TA-1336
- Industry Expert: Public Interest
- Expert Report. (2022)

Masimo Corporation v Apple Inc

- International Trade Commission Investigation No. 337-TA-1276
- Industry Expert: Public Interest
- Declaration on Public Interest (2023)

PayRange Inc v KioSoft Technologies LLC

- United States District Court, Southern District of Florida No. 1:20-CV-24342-RNS
- Technical Expert and Industry Expert: intellectual property, damages estimation
- Expert Report, Rebuttal Report, Deposition (2023)

Interdigital Inc v Samsung Electronics Co Ltd

- Arbitration, International Chamber of Commerce No. 27699/PDP
- Industry Expert: Arbitration
- Expert Report (2023), Rebuttal Report (2024), Hearing testimony (2024)

ASUS Inc v Samsung Electronics Co Ltd

- Technical legal case No. 2:23-CV-00409-JRG-RSP
- Technical Expert
- Inter Partes Review

Telefonaktiebolaget LM Ericsson v Lenovo (United States)

- International Trade Commission Investigation No. 337-TA-1387
- Industry Expert: Public Interest
- Expert Report, Rebuttal Report, Deposition Testimony, Hearing Testimony (2024)

Skyworks Solutions et al v Kangxi Communications Technologies, Grand Chip, D-Link and Rujie Networks

- International Trade Commission Investigation No. 337-TA-1413
- Industry Expert: Public Interest, Exclusion Orders

- Expert Report, Rebuttal Report, Supplemental Report, Deposition Testimony, Hearing Testimony
- *Obtained General Exclusion Order as remedy; settlement heavily favored Skyworks*

Justin Wetherill, David Reiff, and Edward Trujillo v Asurion, Inc.

- American Arbitration Association Case No. 02-23-0001-1129
- Expert Report, Rebuttal Report, Hearing Testimony

WideOpenWest v Baker Botts

- American Arbitration Association Case No. 01-24-002-3517
- Expert Report, Rebuttal Reports, Hearing Testimony

Samsung v Ouraring, Inc.

- Inter Partes Review at the Patent Trial and Appeal Board
- Declarations

Samsung v One-E-Way, Inc.

- Inter Partes Review at the Patent Trial and Appeal Board
- Declarations
- *Institution granted*

Longitude / Marlin v Apple, Broadcom, Taiwan Semiconductor Manufacturing Company at al.

- International Trade Commission Investigation No. 337-TA-1443
- Industry Expert: Public Interest, Exclusion Orders
- Expert Report, Rebuttal Report, Deposition Testimony (2025), and Hearing Testimony (2026)

Alarm.com v SkyBell

- US District Court for the Eastern District of Virginia, Case No. 1:2025cv01105
- Trade secrets

National Products, Inc. v. Dana Innovations, Inc /d/b/a Sonance and iPort

- US District Court for the Central District of California Case No. 8:24-cv-02499-MCS
- Technical expert

Under seal, an anti-trust case in the Competition Appeals Tribunal in the United Kingdom

Under seal, a trade secrets and RICO case in the Eastern District of New York

Professional Experience

Endeavour.Partners

Founder and Chairman

2003–Present

Endeavour.Partners is a boutique consulting firm that enables business leaders to create a future that is more prosperous and more humane, equitable, sustainable, and resilient by harnessing AI, digital technologies—and other deep technologies—to create new value and accelerate growth.

Endeavour.Partners also leverages its deep and broad expertise in technology to help achieve positive outcomes for people and the planet in vital and critical areas, such as anti-trust and the public interest, which encompasses, for example, public health and welfare, competitive conditions, the production of like and competitive articles, and outcomes for consumers.

Michael and his team have experience working throughout the digital ecosystem: across mobile devices, networks and services, computing and software. This includes extensive work in communications, in particular mobile devices (feature phones, smartphones, tablets, cameras, connected homes, smart homes), services (video/PnP, data, messaging, mobile payment, codecs, Bluetooth), components (processor, memory, sensors), cellular networks, satellite networks and other wireless and broadband networks, (network infrastructure and equipment), broadband and Internet, computing (from semiconductors through personal computing to cloud computing and software services), consumer electronics, content (video, audio, gaming), commerce, the convergence of these domains, and in particular over the last decade in Artificial Intelligence (AI), from deep learning through agentic AI.

The firm specializes in technological innovation, the adoption and diffusion of new products, building platforms, and the orchestration of business ecosystems. This expertise encompasses the key digital technologies redefining business, the economy, and society: smartphones, cloud services, the Internet of things (IoT), Artificial Intelligence (AI), and robotics.

The firm is headquartered in Cambridge, MA, with a presence in Seattle, WA, and in London, United Kingdom.

Clients

Endeavour.Partners clients include:

- most of the leading mobile device and connected consumer electronics vendors, including Apple, Samsung, HTC, Nokia, LG, Sony Ericsson, and Motorola
- leading network operators and service providers, such as Verizon Wireless, AT&T, Sprint, T-Mobile, Deutsche Telekom, Vodafone, BT, Optus, and Virgin Mobile
- network infrastructure owners and providers, such as Crown Castle, Samsung, and Lucent Technologies
- other firms throughout the high-technology supply chain, including semiconductor companies such as Intel, Samsung, SK Hynix, Qualcomm, Analog Devices and SkyWorks
- leading global businesses in diverse sectors harnessing digital and other deep technologies, including Thomson Reuters, Swiss Re, Husqvarna, Arla, TetraPak, TechnipFMC, and A.C. Milan
- innovative new technology ventures, such as PowerByProxi (acquired by Apple), and zero360 (acquired by Foxconn)

- leading public sector organizations, including public broadcaster WGBH and the American Archive of Public Broadcasting (AAPB), and the next generation public media platform PRX

Scope of Work

Michael's work through Endeavour.Partners exemplifies his wide-ranging expertise in business strategy, technology strategy, technology innovation, product creation, supply chain, and public policy issues. He has provided industry expertise in intellectual pro and antitrust proceedings on behalf of:

- U.S. Department of Justice and other agencies—anti-trust cases such as the proposed AT&T and T-Mobile merger (2011)
- leading firms involved in complex commercial disputes —industry and technical expert regarding trade secrets, contractual obligations and intellectual property rights
- ITC complainants and respondents—industry expert opining on the public interest for litigation focused on wireless infrastructure and networks, mobile devices, wearables, smart home devices, semiconductors, software applications, and digital ecosystems
- United States District Court plaintiffs and defendants—technical expert opining on the (in)validity and (non)infringement related to several technologies involved in mobile devices and wireless networks, including the capture and decoding of real-time video signals, communication on smartphones, and audio codecs

Endeavour.Partners has also worked on business strategy projects on behalf of:

- wireless carriers—video/PnP, 4G and LTE technologies, Bluetooth and data/messaging, particularly around innovative business models
- one of the world's largest and most successful network operators and service providers—video and media platform strategy
- a major wireless carrier—strategies in NFC technology and mobile payments, including a deep technical analysis of competing solutions, as well as assessment on the surrounding business ecosystem, viable business models, and drivers of consumer adoption patterns
- R&D department (~20,000 people) of one of the world's largest software development organizations—renewal of product creation
- world's number one mobile device vendor—"R&D University" for top management team (in collaboration with the world's top academics)
- world's number one consumer electronics business—the future of the consumer electronics, connected home devices, computing business ecosystem, and communications business ecosystem
- a multi-billion-dollar diversified global technology business—renewal of their technology management, from semiconductors through software platforms to devices and complete solutions
- top-tier service providers and network operators, such as BT and Deutsche Telekom—corporate and business strategy for communications services, software businesses, innovative start-ups, and infrastructure vendors
- world's number one device vendor—platform strategy for its flagship product line
- innovation leader in mobile devices—a family of modular products
- world's number one global provider of subsea robotics—new networking approaches for robust, high-bandwidth, multi-model subsea communications systems
- semiconductors companies

Endeavour.Partners has also provided broad industry expertise in regard to:

- business strategies on Internet and mobile advertising, including market sizing, opportunity assessment, and business model deployment for various service providers
- business strategies on machine learning as a service, disease management, green hydrogen, carbon nanotubes, and sensors
- comprehensive projection of the medium- and long-term demand for all digital services and devices, and the related attributes driving consumer choice and preference, including projected market share for major players under a variety of alternative scenarios and the implications thereof
- analysis of the full spectrum of the communications sector, from underlying physical infrastructure, through cellular networks, fiber networks, and satellite networks
- standards for smart home products and connectivity

WKD.SMRT, Inc.

Co-founder and Chief Executive Officer

2019–2025

WKD.SMRT delivers superior real-life data for clinical trials in the home. Its solution makes clinical trials faster, easier, lower cost, and lower risk by combining state-of-the-art sensing, machine learning, and computing technologies to deliver data that is more precise, more complete, more objective, and more real-life.

Silverthread, Inc.

Co-founder, former Chairman

2013-present

Silverthread's services and tools help clients diagnose and improve the design architecture of large software systems to improve predictability of project schedules, reduce unnecessary overhead costs, and prevent compounding complexity. The company's clients include large corporations and government entities that own and manage large, complex software systems.

Zero-360

Co-Founder and founding Chairman

2012–2015

Strategic thought leader for this next-generation wearable device and solutions company focused on unique interactions and bio-sensing capabilities. Its particular focus is on how to support behavioral change. Zero-360's cloud platform provided an open and scalable solution that integrated with third-party wellness programs in capturing valuable health and wearable data.

EquuSys

Co-Founder, Chief Technology Officer and Chief Executive Officer

2004-2011

EquuSys is an animal instrumental business that provides real-time, real-world data to enhance the evaluation, diagnosis, rehabilitation, training, and conditioning of elite horses. The company commercialized Michael's patented inventions, including the development of a hardware electronics sensor product and the accompanying software. This included developing novel wireless protocols for high-speed asymmetric data transmission in shared spectrum.

Mercator Partners*Founder and Chairman Emeritus**1998–2009*

This technology strategy consulting firm designed, directed, and delivered training programs in strategy and technology. Its alumni now fill top strategy roles within a number of industry-leading firms, including Google, HTC, Nielsen, Yahoo!, Sony Ericsson, HTC, and Vodafone. Client work focused on building creative new business models and developing effective business strategies on behalf of:

- leading US mobile company—business ecosystems, business strategies, and anticipating likely customers behavior
- major global JV with European and Japanese parents—emerging applications and potential business models
- most successful MVNO in the world—data services, market entry, and partnership development
- several high-tech R&D-intensive businesses across consumer electronics, telecommunications, automotive, and aerospace—how to commercialize highly innovative technologies
- for the number one US communications infrastructure company—customer needs and company strategy for 3G mobile
- leading Japanese consumer electronics and industrial conglomerate—evolution of consumer electronics; monetizing its semiconductor intellectual property; consumer segmentation; creative business models; and product portfolios, pipeline, and positioning
- variety of media companies—business models and content plays in the Internet and mobile service space
- leading European mobile operator—values- and lifestage-based consumer segmentations to increase customer loyalty and reduce costs
- several broadband and IP players—business models and market entry strategies
- several top-tier private equity players, such as The Carlyle Group, Providence Equity, Kohlberg Kravis Roberts, Blackstone, and Berkshire Partners—due diligence and strategic counsel on technology and telecom investments
- UK 3G auctions—assembled a consortium bid (SpectrumCo), and raising >\$4 billion for an innovative business model, with players such as Virgin, Sonera, Nextel, and Tesco, including strategies for sharing spectrum amongst multiple competing uses

GeoPartners Research*Principal**1996–1998*

GeoPartners Research provided technology evaluation and strategy focused on broadband, IP, and next generation wireless technologies on behalf of and in regard to:

- AT&T—overall corporate strategy, including IP, VoIP, local entry, wireless and broadband, including network infrastructure and equipment (including NAT and DNS for VoIP)
- Qualcomm—new technologies, business ventures, and organizational design, including work on Qualcomm's first smartphone and on the design parameters for spectrum sharing on its next generation of data-oriented technologies such as EV-DO and EV-DV
- Ember Networks—the IEEE 802.15.4 and the standardization of the Zigbee protocols, and comparative evaluation of these protocols versus other wireless mesh protocols, with a particular focus on frequency hopping to mitigate interference in unlicensed spectrums

- HP, Northern Telecom (subsequently Nortel Networks), and Intel—business models and building business ecosystems

AT&T (formerly BellSouth International)*Chief of Strategy, One NZ (formerly BellSouth NZ)**1992–1996*

Corporate and business strategy, government relations and industry relations, and R&D, including:

- Chairman of the 3rd Generation Interest Group of the GSM MoU (the largest organization of mobile network operators in the world)—assessed the alternative protocols available for 3G, with particular focus on the use of frequency hopping and other techniques to mitigate interference, the requirements to support global roaming, and to qualify state-of-the-art mobile devices for advanced services
- Chairman of the New Zealand Personal Communications Services working group—assessed the coexistence of various wireless protocols, with a particular focus on their frequency hopping strategies, including, for example, the interaction between DECT and the Japanese Personal Handyphone System (PHS)
- one of the leaders of a global task force evaluating the technologies and business models for satellite networks, including major new networks such as Iridium, Globalstar, and Teledesic
- pioneered the first PDA with digital cellular connectivity (Apple Newton, Nokia Data Card and Nokia 2110) and collaborated with Nokia on the development and testing of the very first modern smartphone, the Nokia Communicator
- built the business from pre-launch through to profitability, which has now become the clear market leader and Vodafone's most successful business worldwide
- designed and drove a path-breaking multi-million-dollar global academic research program on the economics of communications, networks, and technologies in deregulated markets. Fellow participants included Jean-Jacques Laffont, Jean Tirole, Paul David, David Teece, David Gabel, and Glenn Woroch.

Boston Consulting Group*Manager**1991–1993*

Michael focused on technology and telecoms businesses, including Philips Electronics, Telecom NZ, Telstra, and in particular BellSouth International. Responsible for training programs in advanced analytical techniques for strategy development.

Braxton Associates*Manager**1987–1991*

Michael worked on a wide range of strategy projects, focusing on electronics and defense businesses in particular, such as companies involved in command and control systems, aircraft, tanks, submarines, and satellite networks. Also worked on corporate strategy, product development, manufacturing and operational transformation, and market entry. Played a leading role in development and training, focusing in particular on approaches to organizational transformation.

Mars Electronics*Project Manager, Program Manager**1984–1987*

Michael worked as roboticist; cyberneticist; and designer, developer, and program manager for large-scale real-time systems for manufacturing and logistics. Involved in the development of overall business strategy.

Cookson Group*Robotics Engineer, Project Manager**1982–1984*

Michael worked as a robotics engineer and automation manager overseeing and supporting many existing robotic handling and other automation systems. Designed, developed, and deployed additional state-of-the-art robotic and automation systems for manufacturing processes and material handling.

Academic Experience**Massachusetts Institute of Technology***Senior Lecturer–Integrated Design and Management*

Michael was invited to create and teach, as part of Integrated Design Lab I and Integrated Design Lab II (EM.441 and EM.442), courses that present fundamentals of and advanced topics in integrated design and product development process.

Michael developed and taught fundamental concepts, including innovation, emerging technologies, product management, product marketing, basic finance and business models, and pricing and marketing. Developed and taught advanced topics, including competitive analysis and market opportunity identification, funding entrepreneurship, business plan and pitch, and data-driven decision-making.

Senior Lecturer–Engineering Systems Division (now Institute for Data, Systems, and Society)

Michael was responsible for creating, managing, and teaching two capstone leadership courses, the Systems Leadership & Management Lab (SL&M Lab) and Praxis (ESD.39 and ESD.S51).

SL&M Lab is a semester-long course in which System, Design, and Management (SDM) Fellows work at least one full day per week (~fifteen person-days) on average with the top management of a high-tech business on a relevant real-world systems and management challenge. The host companies set the focus; therefore, project teams work on problems of true concern to the host companies.

The course also focuses on challenges such as team roles, logical thinking and writing, and the use of graphical communication. Assignments can range from high-level systems thinking issues to building a prototype. SDM students take this experience with them as they work with their host companies or continue in their career progression and development.

The SL&M Praxis course is about praxis: practice—application or use of knowledge or skills—as distinguished from theory. The course gives SDM Fellows insights into the realities of decision-making and managerial behavior in large, complex, high-tech, and systems businesses. It provides students with systematic approaches to apply their systems, architecture, technology, and strategy learnings to real-world leadership and management challenges. This course runs during the summer session as a complement to and preparation for the SL&M Lab course.

Senior Lecturer–Bernard M. Gordon-MIT Engineering Leadership Program, School of Engineering

The Bernard M. Gordon-MIT Engineering Leadership Program (<http://web.mit.edu/gordonelp/>) fosters new approaches that prepare the nation's young engineering leaders for productive and effective careers in engineering companies, and continues MIT's rich, innovative tradition of engineering leadership.

Michael taught the capstone undergraduate leadership course, Engineering Leadership (ESD.045).

The Engineering Leadership course exposes students to the models and methods of engineering leadership within the contexts of conceiving, designing, implementing, and operating products, processes, and systems. In particular, taught the Engineering Systems elements of the course, homed within AeroAstro.

Michael taught the Technology & Strategy course (15.905/15.965).

The Technology & Strategy course provides a strategic framework for managing high-tech businesses. It emphasizes the development and application of ways of thinking or mental models that bring clarity to the complex co-evolution of technological innovation, the demand opportunity, business ecosystems, decision-making, and execution within the business.

- These tools help managers anticipate and decide how to respond to the behavior of competitors, complementors, and customers; and decide which technologies to invest in, opportunities to target, or partnerships to pursue.

Principal Investigator–Engineering Systems Division (now Institute for Data, Systems, and Society)

Involved in the research on the improvement of software project outcomes by attacking complexity and technical debt as part of a National Science Foundation (NSF) I-Corps program.

Researcher and Thesis Advisor

Supervises thesis work on related areas, including recent prize-winning work on the future of the smart grid, and theses on a broad range of issues.

Conducts research on how psychology shapes consumers' buying behavior and how product features and specifications influence consumers' choices among products and their liking for products. This culminated in a keynote presentation at MIT in Europe, held in Vienna, Austria and a keynote presentation at MIT in South America, held in Chile in 2023

London Business School

The Business of Artificial Intelligence

Course director for the highly rated flagship online program in how to create business value from Artificial Intelligence.

New Technologies Ventures Program

Manage and teach this unique program that brings MBAs and business students from London Business School together with post-doctoral researchers from University College London.

The goal of this course is to enable would-be entrepreneurs to evaluate novel ideas and inventions and turn them into new technology ventures. Participants, who are business professionals, scientists, engineers, and would-be entrepreneurs, explore how entrepreneurs and investors identify and analyze the feasibility of innovative technical ideas, turn them into products and services, and take these products and services to market, as both start-ups and established businesses. A key element of the program is projecting demand for innovative products and new product features

Professional Affiliations

Freeman of the Worshipful Company of Ironmongers

Recognized as a World Class New Zealander (March 2007)

Member, Board of Advisors, Department of Systems Engineering at the United States Military Academy at West Point, NY

Appointed to U.S. Beachhead Board of New Zealand Trade & Enterprise (NZTE) (July 2006)

Erstwhile Member, Board of Directors, and Co-Chairman, Mobile Cluster for Massachusetts Technology Leadership Council (MassTLC)

Member, Executive Committee, Boston Area Chapter of the Communications Society of the Institute of Electrical and Electronic Engineers (IEEE)

Member, Association for Computing Machinery (ACM, Academy of Management, Strategic Management Society, Institute for Operations Research and the Management Sciences (INFORMS) and Product Development Management Association (PDMA)