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5
6   IN THE UNITED STATES DISTRICT COURT

7   FOR THE CENTRAL DISTRICT OF CALIFORNIA

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9   BLACKBERRY LIMITED, a   )
     Canadian corporation,   )
10   )
)
11   Plaintiff,   )   CASE NO. 2:18-cv-01844
)   GW(KSx)
12   v.   )
)   **DECLARATION OF CRAIG**
13   FACEBOOK, INC., a Delaware   )   **ROSENBERG, PH.D.**
     corporation, WHATSAPP INC., a   )   **REGARDING CLAIM**
14   Delaware corporation, and   )   **CONSTRUCTION**
     INSTAGRAM, INC., a Delaware   )
15   corporation, and INSTAGRAM,   )
     LLC, a Delaware limited liability)
16   company   )
)
17   )
                Defendants.   )
18   )
)
19   BLACKBERRY LIMITED, a   )
     Canadian corporation,   )
20   )
)   CASE NO. 2:18-cv-02693
21   Plaintiff,   )   GW(KSx)
)
22   v.   )
)
23   SNAP INC., a Delaware corporation)
)
24   Defendant.   )
25   )
)
26   )
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I, Craig Rosenberg, declare as follows:

I.   **Introduction**

1. My name is Craig Rosenberg.

2. I have been retained by counsel for Plaintiff BlackBerry Limited ("BlackBerry") as an expert in this litigation to provide opinions concerning certain claim terms in U.S. Patent Nos. 8,301,713 ('713 Patent) and U.S. Patent No. 9,349,120 ('120 Patent).

3. I am being compensated at my standard billing rate of $475 per hour for time spent on this matter.

4. My compensation is in no way dependent on the outcome of this investigation.

II.   **Background And Qualifications**

5. I am an independent consultant. The opinions stated in this declaration are my own and based on my personal knowledge and professional judgment. In forming my opinions, I have relied on my knowledge and experience in designing, developing and deploying a wide range of software application and graphical user interfaces, and on the documents and information referenced in this declaration.

6. I hold a Bachelor of Science in Industrial Engineering, a Master of Science in Human Factors, and a Ph.D. in Human Factors from the University of Washington School of Engineering. For 30 years, I have worked in the areas of human factors, user interface design, software development, software architecture, systems engineering, and modeling and simulation across a wide variety of application areas, including aerospace, communications, entertainment, and healthcare.

7. I graduated from the University of Washington in 1988 with a B.S. in Industrial Engineering. After graduation, I continued my studies at the University of Washington. In 1990, I obtained an M.S. in Human Factors. In 1994, I graduated

-1-   Case Nos. 2:18-cv-01844 & 2:18-cv-02693 GW(KSx)

with a Ph.D. in Human Factors. In the course of my doctoral studies, I worked as an Associate Assistant Human Factors Professor at the University of Washington Industrial Engineering Department. My duties included teaching, writing research proposals, designing and conducting funded human factors experiments for the National Science Foundation, as well as hiring and supervising students. While studying at the University of Washington, I also worked as a human factors researcher and designed and performed advanced human factors experiments relating to virtual environments and interface design, stereoscopic displays, and advanced visualization research, which was funded by the National Science Foundation. My duties included user interface design, systems design, software development, graphics programming, experimental design, as well as hardware and software interfacing.

8.   I have published twenty-one research papers in professional journals and proceedings relating to user interface design, computer graphics, and the design of spatial, stereographic, and auditory displays. I also authored a book chapter on augmented reality displays in the book "Virtual Environments and Advanced Interface Design" (Oxford University Press, 1995). In addition, I created one of the first spatial musical instruments called the MIDIBIRD that utilized the MIDI protocol, two six-dimensional spatial trackers, a music synthesizer, and a computer graphics workstation to create an advanced and novel musical instrument.

9.   My Ph.D. dissertation was titled "Evaluating Alternative Controllers using the MIDI Protocol for Human-Computer Interaction." This research explored the use of programming a musical keyboard to be used as a human-computer interaction device for controlling computer graphics.

10.   For the past 21 years, I have served as a consultant for Global Technica, Sunny Day Software, Stanley Associates, Techrizon, CDI Corporation,

ROSENBERG DECLARATION ON CLAIM CONSTRUCTION ('713 AND '120 PATENTS)

1 and the Barr Group. In this capacity, I have provided advanced engineering services

2 for many companies.

3   11.   I consulted for the Boeing Company for over 16 years as a senior

4 human factors engineer, user interface designer, and software architect for a wide

5 range of advanced commercial and military programs. Many of the projects that I

6 have been involved with include advanced software development, user interface

7 design, agent-based software, and modeling and simulations in the areas of missile

8 defense, homeland security, battle command management, computer aided design,

9 networking and communications, air traffic control, location-based services, and

10 Unmanned Aerial Vehicle ("UAV") command and control. Additionally, I was the

11 lead system architect developing advanced air traffic controller workstations and air

12 traffic control analysis applications, toolsets, and trade study simulations for Boeing

13 Air Traffic Management.

14   12.   I was also the architect of the Boeing Human Agent Model. The Boeing

15 Human Agent Model is an advanced model for the simulation of human sensory,

16 cognitive, and motor performance as applied to the roles of air traffic controllers,

17 pilots, and UAV operators. In another project, I was the lead human factors engineer

18 and user interface designer for Boeing's main vector and raster computer aided

19 drafting and editing system that produces the maintenance manuals, shop floor

20 illustrations, and service bulletins for aircraft produced by the Boeing Commercial

21 Aircraft Company. Additional responsibilities in my time as a consultant include

22 system engineering, requirements analysis, functional specification, use case

23 development, user stories, application prototyping, modeling and simulation, object-

24 oriented software architecture, graphical user interface analysis and design, as well

25 as UML, C++, C#, and Java software development.

26   13.   In 1995 and 1996, I was hired as the lead human factors engineer and

27 user interface designer for the first two-way pager produced by AT&T. Prior to this

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technology, people could receive pages but had no way to respond utilizing their

pager. This new technology allowed users to use a small handheld device to receive

and send canned or custom text messages, access and update an address book, and

access and update a personal calendar. This high-profile project involved designing

the entire feature set, user interface/user interaction design and specification, as well

as all graphical design and graphical design standards.

14. From 1999–2001, I was the lead human factors engineer and user

interface designer for a company called Eyematic Interfaces that was responsible for

all user interface design and development activities associated with real-time mobile

handheld 3D facial tracking, animation, avatar creation and editing software for a

product for Mattel. My work involved user interface design, human factors analysis,

requirements gathering and analysis, and functional specifications.

15. I was the lead user interface designer for a company called

ObjectSpeed that developed a portable handheld telephone for use in homes and

businesses that had many of the same capabilities that we take for granted in mobile

cellular phones. This portable multifunction device supported voice, email, chat,

video conferencing, internet radio, streaming media, Microsoft Outlook integration,

photo taking and sharing, etc. The ObjectSpeed device was specifically designed

and developed as a portable handheld device.

16. I am the founder, inventor, user interface designer, and software

architect of WhereWuz. WhereWuz is a company that produces advanced mobile

software running on GPS-enabled smartphones and handheld devices. WhereWuz

allows users to record exactly where they have been and query this data in unique

ways for subsequent retrieval based on time or location. WhereWuz was specifically

designed and developed to run on small handheld devices.

17. I am the co-founder of a medical technology company called Healium.

Healium developed advanced wearable and handheld user interface technology to

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