IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

In re Covered Business Method
Patent Review of:
U.S. Patent No. 6,237,095

For: APPARATUS FOR TRANSFER OF
SECURE INFORMATION BETWEEN A
DATA CARRYING MODULE AND AN
ELECTRONIC DEVICE

<u>DECLARATION OF STEPHEN D. BRISTOW</u>

Mail Stop PATENT BOARD
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US Patent and Trademark Office
PO Box 1450
Alexandria, Virginia 22313-1450

I, Stephen D. Bristow, hereby declare and state as follows:

1. I have been retained as a technical consultant on behalf of JPMorgan Chase

    & Co. and JPMorgan Chase Bank, N.A., the petitioner in the present

    proceeding, and I am being compensated at my usual and customary hourly

    rate. The petition names JPMorgan Chase & Co. and JPMorgan Chase

    Bank, N.A. as real parties-in-interest. I have no financial interest in, or

    affiliation with, the petitioner, real parties-in-interest, or the patent owner,

    which I understand to be Maxim Integrated Products, Inc. My

compensation is not dependent upon the outcome of, or my testimony in, the present covered business method patent review or any litigation proceedings.

Background

2. My background, qualifications, and experience relevant to the issues in this proceeding are summarized below. My curriculum vitae as related to the issues in this proceeding is submitted herewith as Exhibit 1016.

3. I am currently Chief Technology Officer of Cloudastructure, an Internet-based video security service, and am currently on retainer to advise, consult with, and maintain Parkinson's disease testers for the Andy Grove Foundation of Los Altos, California.

4. I have a Bachelor of Science degree in Electrical Engineering and Computer Science as a Regent's Scholar from the University of California at Berkeley. I also have a Master of Science degree in Electrical Engineering from the University of Santa Clara, in Santa Clara, California. During my studies, I took courses in integrated circuit design, communications theory, computer architecture, programming languages such as machine language, assembly language, compiled and interpreted language, as well as programming language theory. I have also attended numerous ongoing continuing education and technical training classes

since graduation, which include training in the programming, capabilities, technological limitations, and uses of smart cards by Micro Card Technologies, Inc., a subsidiary of Bull.

5. Beginning in 1973, I had the position of Vice President of Engineering for Atari. At that time, Atari's arcade video games operated on a cash basis, and the company was interested in finding out ways to, and developing the technology to, make it easier for customers to play their video games. Traditional coin-operated games require a large amount of coins, which are bulky and inconvenient for consumers, and need to be periodically emptied and deposited, which can be a burden for arcade operators. Paper currency also has drawbacks, as bill acceptors and change machines at the time had complicated mechanics and electronics, and were expensive. Credit card technologies were also not appropriate, since relatively expensive phone lines would be required for each credit card reader. There was therefore a recognized benefit from having an inexpensive stored-value medium where value could be deposited by the consumer and debited by an arcade machine without communicating with a central authority.

6. Through my work at Atari, I began to follow developments in technologies related to cash cards, including magnetic strip paper cards such as those used for mass transit. In the mid-1980s, I became aware of the

development of integrated-circuit based "smart cards" which provided

persistent storage coupled with a processing capability that could

implement sophisticated security protocols.

7. Around 1986, I began working with my former Atari colleague Christopher

Wright to develop a smart card-based solution for postage-printing stations.

Mr. Wright and I started Wright Technologies to research and implement

this technology. Larger companies at the time used postage-printing

stations to generate U.S. mail postage stamps in-house. This was done

using heavy sealed metal boxes that included mechanical levers to set

postage amounts, which would use mechanicals to set a stamp imprint.

Also included was a mechanical balance calculator, which would

decrement as postage stamps were generated. In order to refill the stored

value, the box would need to be carried to a postal service branch to be

physically opened and configured with additional value. We had the idea

of using the secure storage capability of smart cards in conjunction with an

intelligent printing device in order to generate secure printed postage value.

This work resulted in applications for patents filed by myself and Mr.

Wright, which include issued U.S. Patent Nos. 4,900,904 (the "'904

patent") (Ex. 1018) and 4,864,618 (Ex. 1019), both filed October 17, 1988.

8.   Starting in 1986, we developed working prototypes of a postage terminal that used a smart card to securely store and transmit in an interactive basis financial information between a printing device and a smart card based on user inputs. The smart card stored a running balance and multiple secret "keys" used to secure the transaction with the printing device. A user would enter a desired postage amount into the terminal, which would be transmitted to the smart card. The smart card would then send to a smart printing element within the printing device an encrypted communication that included a request for printing, the amount of the postage to be printed, as well as a challenge number to be used for authentication. The print head would then decrypt the communication and respond to the challenge with the same number encrypted using a different secret key. The smart card would decrypt the response to confirm that the print head is a valid print head. In turn, the print head would send its own encrypted challenge, which the smart card would need to decrypt and re-encrypt using a different secret key. The print head would decrypt the postage amount, and in response print the appropriate amount, and respond with a message indicating the print was successful. Only at this point would the smart card deduct from its balance the amount of the postage.

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