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Taylor et al.

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(54) **SYSTEM AND METHOD FOR UPDATING AN ACCESS POINT MODEL**

(56) **References Cited**

U.S. PATENT DOCUMENTS

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6,289,318 B1 * 9/2001 Barber G06Q 30/02 705/14.16
6,766,947 B2 7/2004 Wan et al.
(Continued)

FOREIGN PATENT DOCUMENTS

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WO 2008014255 A2 1/2008
WO 2010107817 A1 9/2010
(Continued)

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OTHER PUBLICATIONS

Nye, Carolyn. Email Marketing for the Holidays, Part 2: Implementation. Practical E-Commerce. Sep. 17, 2013, [online], [retrieved on Nov. 15, 2016]. Retrieved from the internet <URL: <http://www.practicalecommerce.com/articles/58641-Email-Marketing-for-the-Holidays-Part-2-Implementaton>>.

(Continued)

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(57) **ABSTRACT**

Aspects of the disclosure relate to generating or updating an access point model. The model may be generated based in part on access point model data, e.g., collected scan information from devices that travel through an indoor space. The wireless access point model may include an indoor map of a location or building. At some point, it may be determined that the access point model data may not meet a predetermined quality threshold. For example, the data may be outdated or inaccurate. A request is generated and transmitted to a client device within a predetermined distance of the access point associated with the access point model. In response to the request, the device travels to the indoor space associated with the access point to collect scan information. The scan information is used to update or otherwise modify the access point model.

21 Claims, 5 Drawing Sheets

