



US006127945A

United States Patent [19]
Mura-Smith

[11] **Patent Number:** **6,127,945**
[45] **Date of Patent:** **Oct. 3, 2000**

- [54] **MOBILE PERSONAL NAVIGATOR**
- [75] Inventor: **Kiyoko Mura-Smith**, Los Altos, Calif.
- [73] Assignee: **Trimble Navigation Limited**, Sunnyvale, Calif.
- [21] Appl. No.: **08/544,553**
- [22] Filed: **Oct. 18, 1995**
- [51] **Int. Cl.**⁷ **G08G 1/123**
- [52] **U.S. Cl.** **340/988; 340/539; 342/457; 701/300**
- [58] **Field of Search** 340/988, 989, 340/990, 995, 539, 573; 342/457; 364/449.2, 449.3, 449.5, 449.7; 701/207, 208, 209, 211, 213, 215, 300

5,412,573	5/1995	Barnea et al.	340/990
5,434,789	7/1995	Fraker et al.	
5,497,149	3/1996	Fast	340/988
5,546,092	8/1996	Kurokawa et al.	340/988
5,627,547	5/1997	Ramaswamy et al.	342/357
5,642,107	6/1997	Cross	340/990
5,797,091	8/1998	Clise et al.	455/404

Primary Examiner—Brent A. Swarthout
Attorney, Agent, or Firm—Wagner, Murabito & Hao LLP

[57] **ABSTRACT**

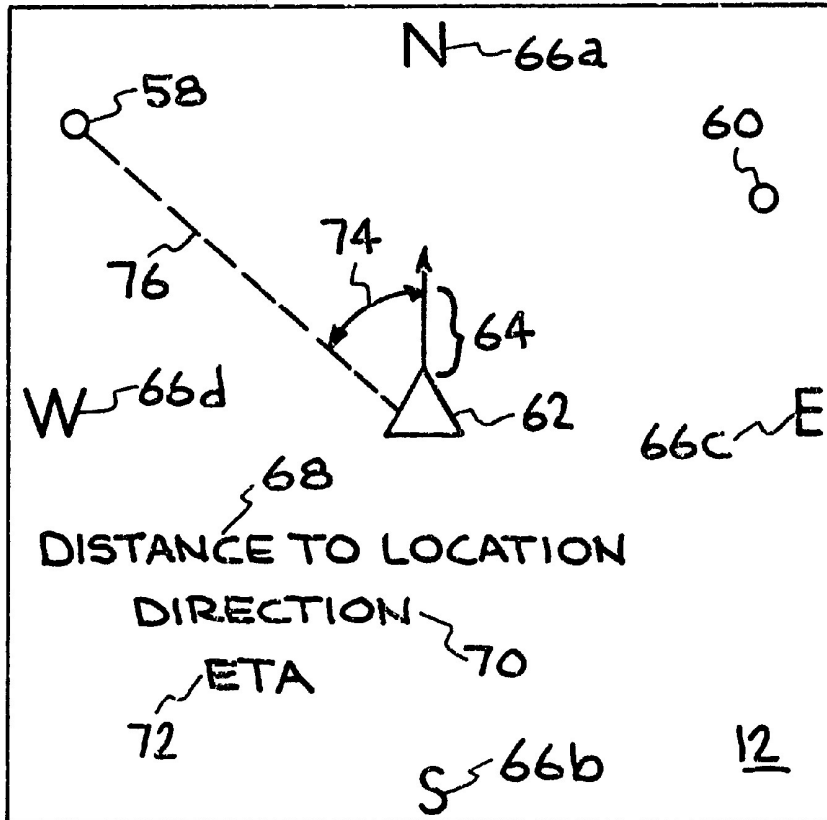
A personal navigation device and method for providing location information. In one embodiment, the present invention is comprised of a portable hand-held unit. The portable unit contains a communication system adapted to receive data at and transmit data from the portable unit. The portable unit also contains a position determining system which determines the geographic location of the portable unit. The position determining system is connected to the communication system. A graphic display located on the portable unit is also connected to the position determining system. The graphic display displays a representation of the current location of the portable unit with respect to a previously selected location. In one embodiment, the representation of the current location also includes a representation of the speed and the heading of the portable unit with respect to the previously selected location.

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,835,537	5/1989	Manion	340/961
4,857,840	8/1989	Lanchais	340/989
4,963,864	10/1990	Iihoshi et al.	340/995
5,025,261	6/1991	Ohta et al.	342/357
5,113,185	5/1992	Ichikawa	340/995
5,334,974	8/1994	Simms et al.	340/988
5,337,041	8/1994	Friedman	340/573
5,345,244	12/1994	Gildea et al.	342/357

1 Claim, 5 Drawing Sheets



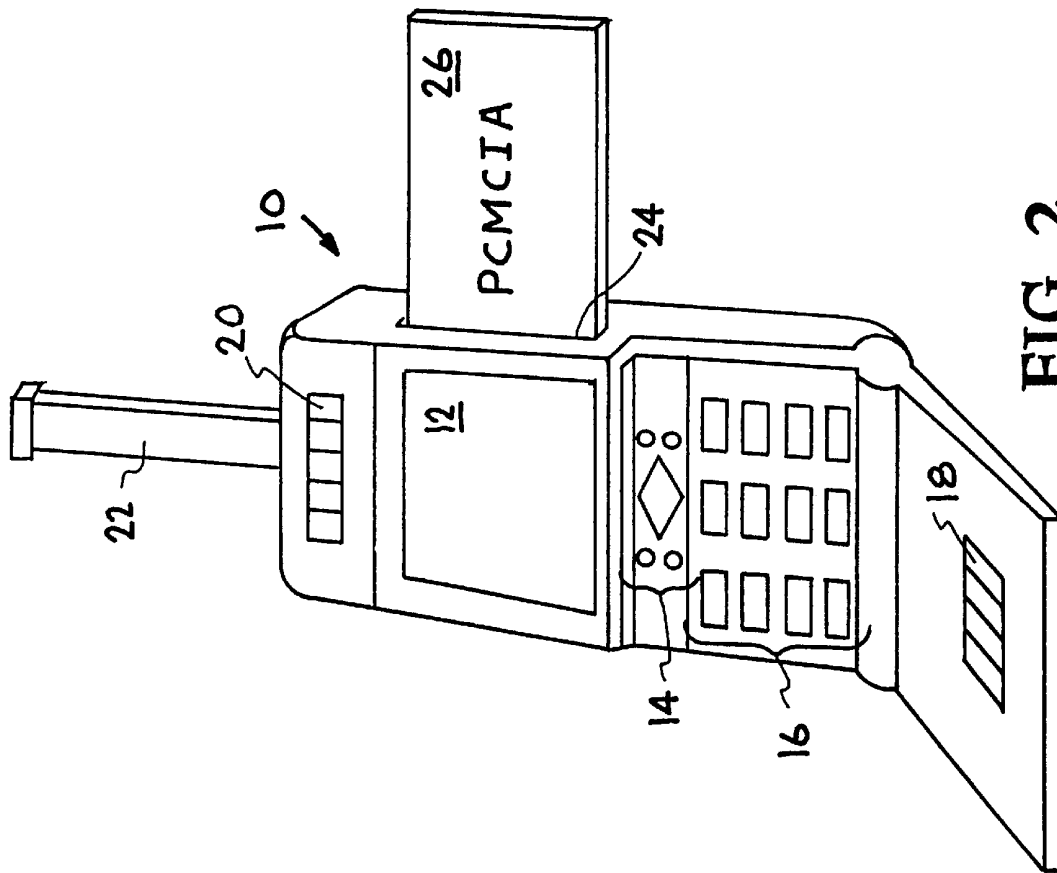


FIG. 2

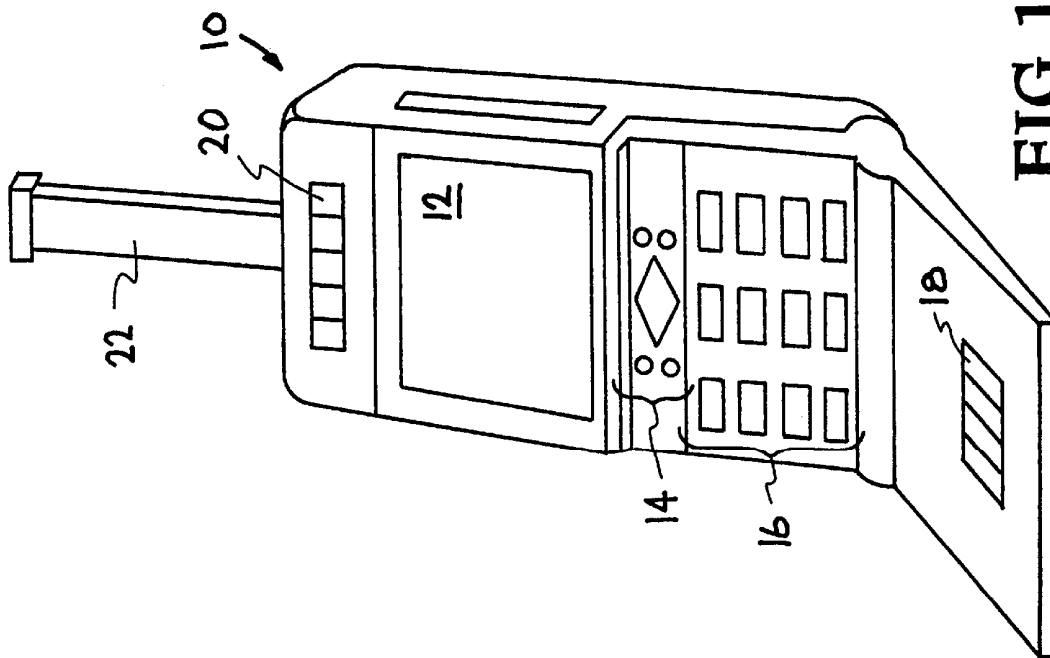


FIG. 1

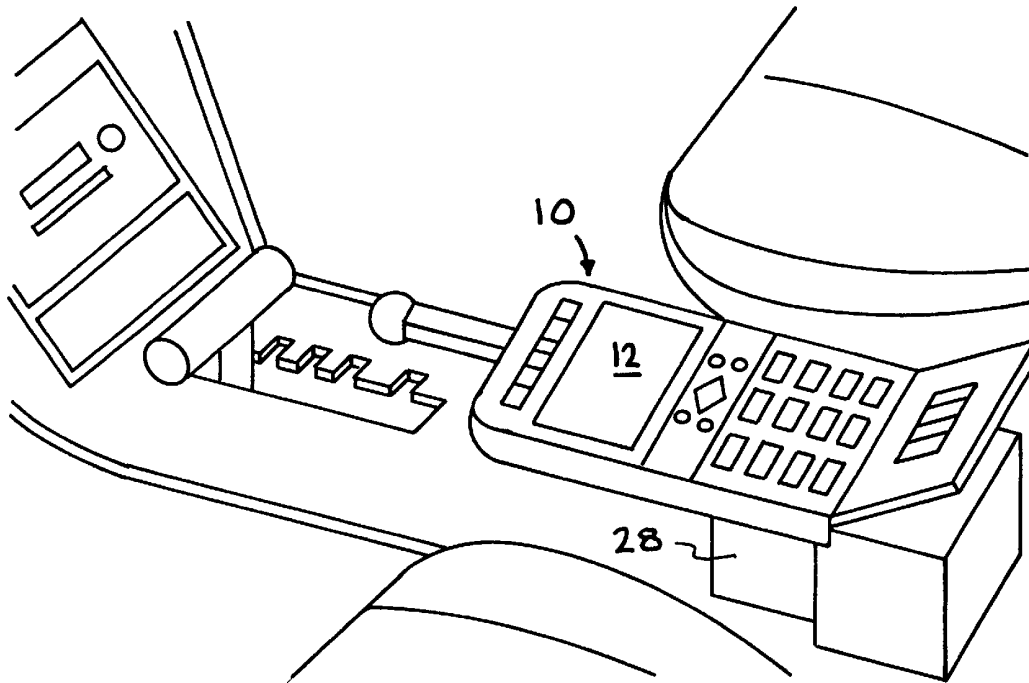


FIG. 3

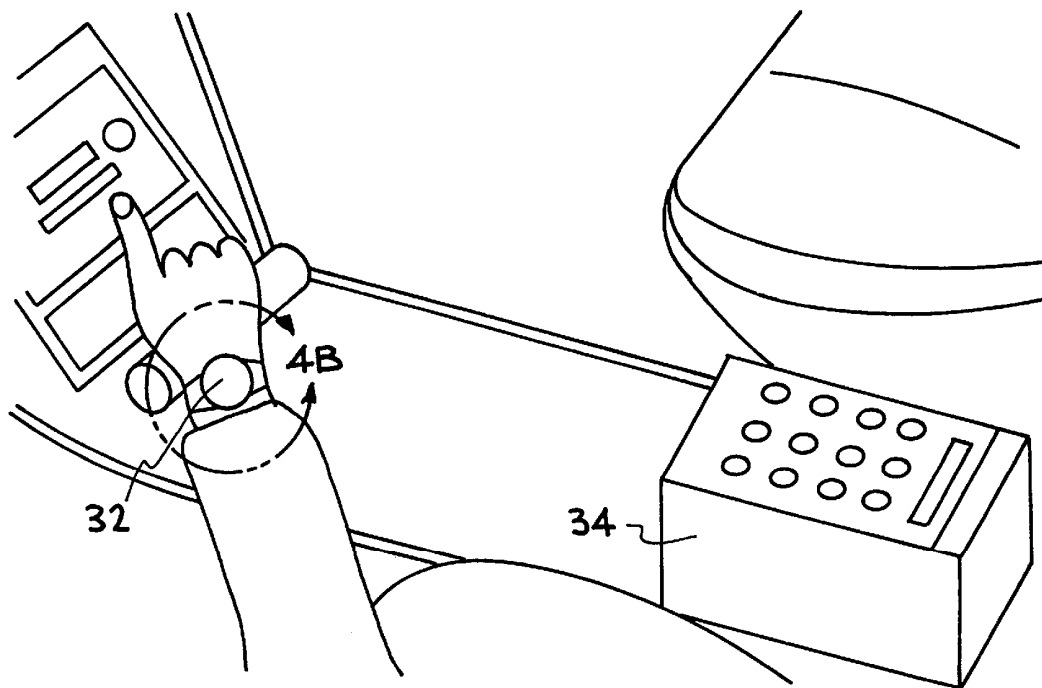


FIG. 4 A

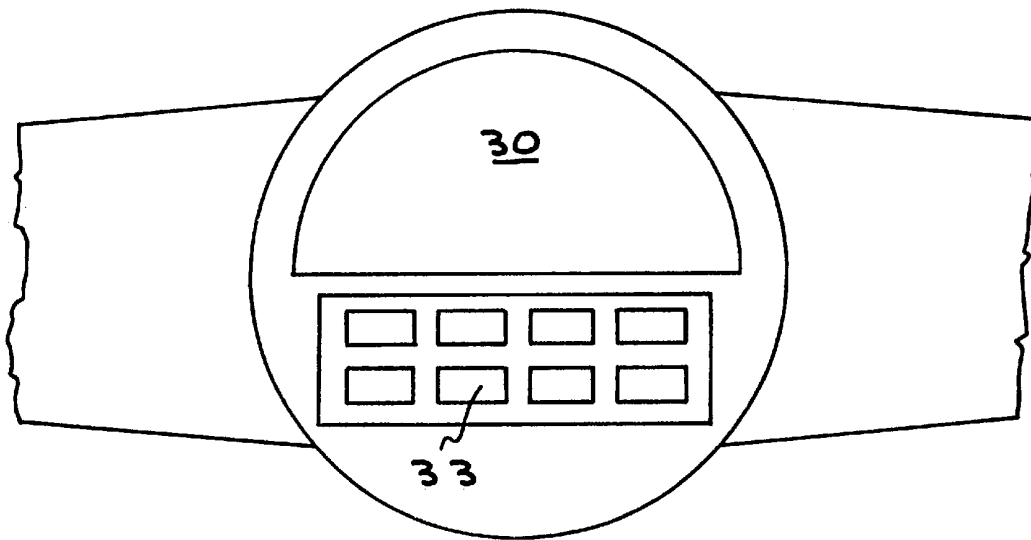


FIG. 4B

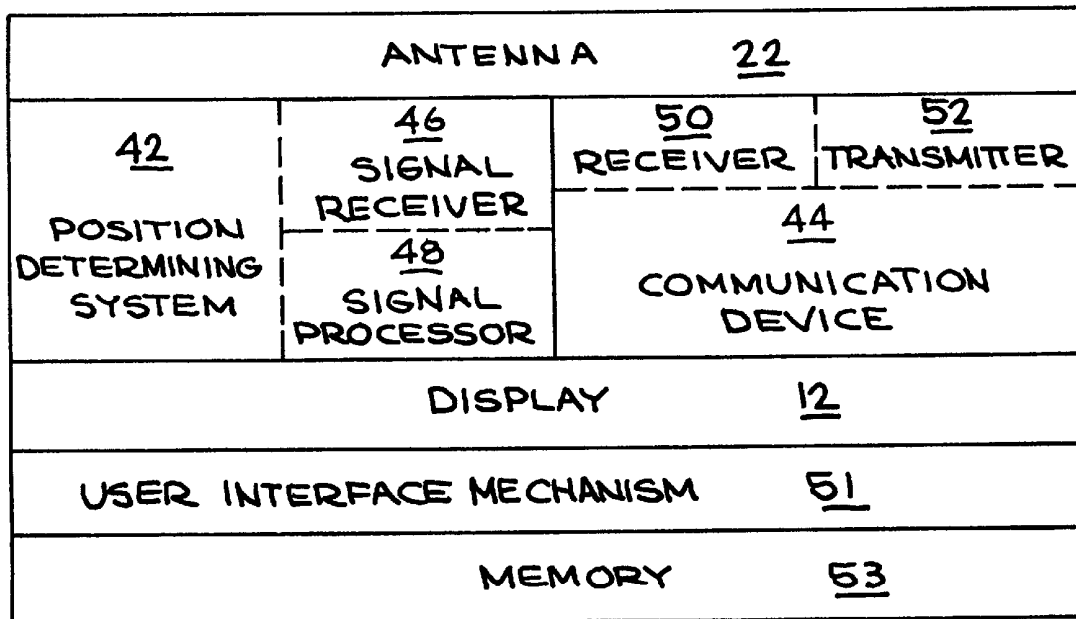


FIG. 5

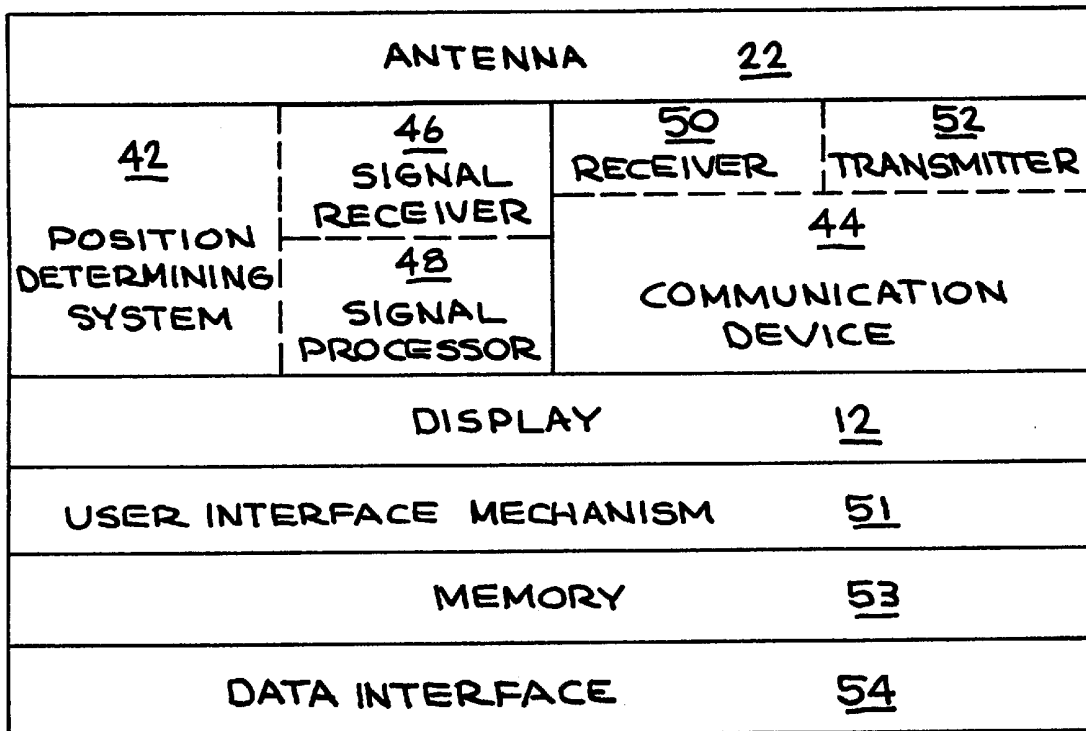


FIG. 6

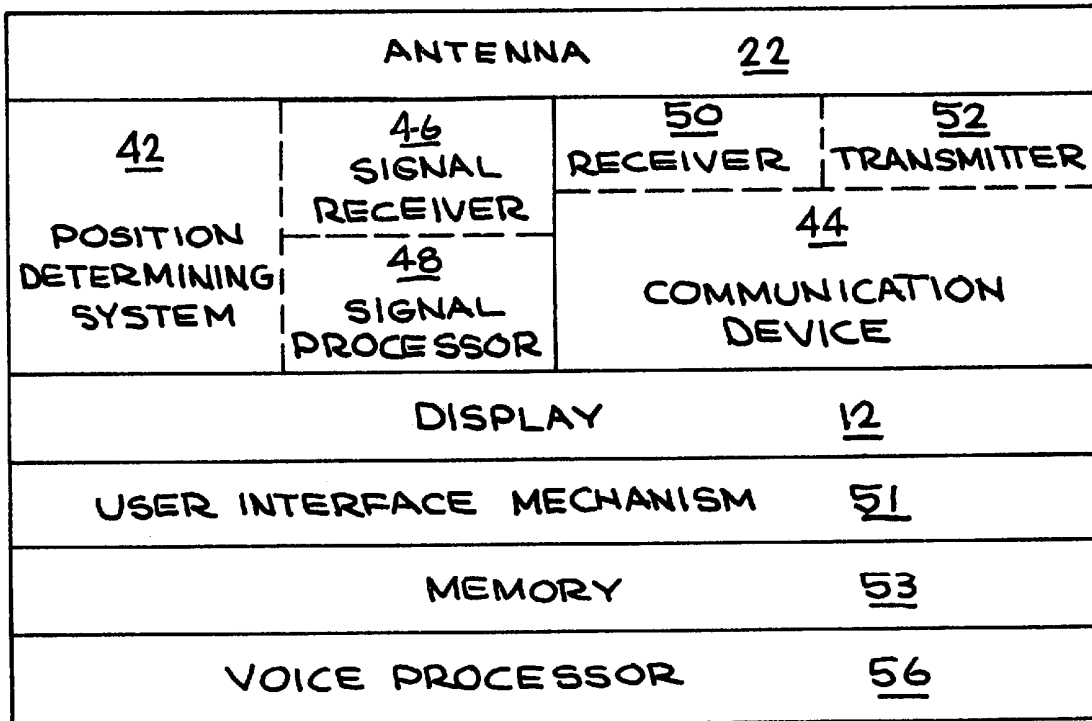


FIG. 7

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.