

Personal navigation devices



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1. Why have Personal Navigation Devices become popular? What technologies are required to facilitate the success of PNDs?

Personal Navigation Devices have become popular because they assist drivers in getting from one location to the next. They can also show the driver if the route that they are taking has congestion or toll roads and an alternate route if one is available. Also, as many cities continue to expand and grow landmarks may not be the same for someone that has visited the same area years ago, as well as almost every major city in the United States has road construction going on to improve on our infrastructure.

This can cause problems for travelers that are not familiar with the area, and the use of a PND would show alternate routes for the traveler. Many executive travelers use the PND over a smartphone that has mapping and navigation capabilities for many reasons. The “ routing experience could be disturbed by incoming calls, texts or e-mails.” (Dubey, 2012) Other reasons are most cell phone providers no longer offer unlimited data, so using the smartphone would burn up data on the plan, and the navigation is limited to areas where your provider has coverage.

This is not good for a person that would be doing international traveling, where using a PND you only have to pack the device and place it in the rental car once you are at your location. The technology that PND uses is called Global Positioning System (GPS) that uses signals from the 27 earth orbiting satellites. “ The orbits are arranged so that at any time, anywhere on Earth, there are at least four satellites “ visible” in the sky.” (Brian, Harris, 2013) A PND, or sometimes referred to as a GPS receiver, will attempt to

receive a signal from at least four or more of these satellites, then using a mathematical principal called trilateration will determine its current location.

2. Who are some of the leaders in PNDs? What are the likely factors that will contribute to winning in this marketplace? The leaders in this industry are Garmin with about 50% of the market, followed by TomTom who has about 25% of the market. For the manufacturers to be successful in the market place they are going to have to be innovative and come up with ways to compete with smartphones. Many people only use their smartphones as they do not travel to far from their residence or workplace.

3. What will be a likely future for PNDs? I believe that the future for PNDs is going to decline as the use of smartphones, mobile computers, and tablets are becoming more affordable and have more functionality than the PNDs. “ Currently there are an estimated 114 million PNDs in use worldwide, but that number is expected to remain relatively flat over the next few years while turn-by-turn navigation systems on smartphones are expected to increase and overtake sales of PNDs by 2013.” (Personalgps. wordpress. com, 2013)

As the wireless carriers are expanding their networks to cover larger areas, and the smartphone manufacturers are making the phones so that they can be used on virtually any network in the world the use of PND is becoming obsolete. There are a select few that will continue to need to use PNDs, such as truck drivers. Others that may need to use these devices would be hikers, or personnel that travel to locations where there is no wireless providers, such as scientists in the rainforests.

4. Apply as many TCOs to Personal Navigation Devices as possible. Garmin is the parent company of a group of companies that develops GPS technologies for aviation, consumer, marine, and military uses. In order to protect their assets and intellectual property the majority of their processes are patented. They have also licensed their software and applications, with the exception of XM Patent. With 50% of the market they are very competent in various fields that relate to GPS and make many devices such as the iQue line of PDA-GPS receivers as well as sonar fish finders with GPS.