Is ge global research developing a portable solar-powered ultrasound device?

Is GE Global Research Developing a Portable Solar-Powered Ultrasound Device? As the recipient of a new NIH grant, GE (NYSE: GE) Healthcare should create and design new innovative features as a way to differentiate its products in the nascent point-of-care portable ultrasound marketplace. Reasons why GE Healthcare should pursue a risk-taking strategy, such as developing a portable solar-powered ultrasound device and background information supportive of this strategy is offered in the following analysis.

AnalysisThe recent announcement that GE has been awarded a $1. 2 Million NIH-funded grant to develop a low-cost transducer for portable ultrasound systems is noteworthy — but not nearly as important as its recently settled patent litigation with SonoSite, Inc (NASDAQ: SONO). that occurred just two weeks ago (http://www. sonosite. com/news/2009/10/sonosite-announces-global-patent-settlement-with-ge/). With the filing of its first US patent on 28 June 1996 — (which ultimately issued on 3 Mar 1998 as US Patent 5, 722, 412), SonoSite, Inc.

ought to establish itself as an innovative market leader and developer of light-weight (less than ten pounds) portable ultrasound machines. However, since the issuance of this initial patent (http://www. freepatentsonline. com/XEF5722412. html), only 94 other issued design and / or utility patents have cited the ‘ 412 patent as relevant prior art — which seems relatively few compared with the total number of other patent-related documents associated with other competing medial imaging modalities, such as a computerized axial tomography (CAT) or computerized tomography (CT) scan and Magnetic Resonance Imaging (MRI) scan.

For example, using the http://www. freepatentsonline. com website search engine, a quick search resulted in a large number of documents being found that contained the following keywords or phrases: The number of references for the words “ CT Scan”, “ CAT Scan”, “ Computed Tomography”, and “ Computed Tomography Scan” was in the range of 63, 234 and 26, 721. Likewise, “ Magnetic Resonance Imaging”, “ Magnetic Resonance Imaging Scan”, “ Magnetic Resonance Imaging Scan”, “ MRI”, and “ MRI Scan” produced between 84, 646 and 24, 879 references. Finally, the range was between 781, 590 and 14, 909 references for keywords and phrases like, “ US Scan”, “ Ultrasound device” , “ Ultrasound Imaging” , “ Ultrasound Scan”, “ Ultrasound transducer”, “ Ultrasound machine”, and “ Ultrasound transducer probe”.

Some of these documents may be related to research and development, non-human medical imaging, or be counted more than once in different categories for the same imaging modality — nonetheless, the fact that GE was willing and agreed to pay SonoSite, Inc. “$21 million (front payment) and make ongoing royalty payments on US sales and production of hand-carried ultrasound systems weighing less than ten pounds in exchange for a perpetual nontransferable worldwide license to the ‘ 412 patent family” as part of the settlement agreement is crucial to understanding just how important winning this fight was (and could be) for the long-term survival of GE Healthcare and its ultrasound products. Background: Given the facts that patent litigation is not cheap, that there are 16 other competitors and 26 competing ultrasound products (ten of which are compact) in this space, and the fact that GE has already expended so much valuable time and resources

in pursuing this litigation, it appears that GE had to find a way to gain control and access to this critical ‘ 412 patent family — (even if those patent rights are going to expire in 2016) — or miss an important window of opportunity. Perhaps, during the last 10-15 years, GE was so busy making and shipping out ore expensive imaging equipment (like CT scanners and MRI machines) as fast as it could that it didn’t bother to take a careful look and analysis of the smaller ultrasound market and new upstart businesses, like SonoSite, Inc.

And why should it? As its pre-1996 stock price quickly rose from (less than $10 per share) to just over $60 per share (early 2001), it was more focused on the increasing competition, market share, the economy, and other factors to worry about “ smaller potatoes”. However, by mid-late 2001, this all changed, and GE saw its stock prices steadily falling and yesterday it traded between $14-15 per share — after having recovered from a low of $6. 66 per share (six months ago). Reasons: If the long-term survival of GE Healthcare portable ultrasound products has anything to do with the just settled patent litigation, then one should consider the next three questions and the following possible reasons: (a) Has the company already developed a portable solar-powered ultrasound device? (b) If it has not done so, then why would it not consider developing a device? c) How does the company intend to use its newly received grant and leverage itself in order to become more competitive in the nascent point-of-care ultrasound marketplace? First, by reducing the cost of the ultrasound transducer, GE will have an opportunity to make this technology affordable and expand ultrasound imaging to other areas around the world — in particular the rural and local villages in different

countries located near the equator, as part of its new healthimagination business strategy and pilot projects in India (http://www.

gereports. om/taking-healthymagination-to-community-clinics-in-india/). One non-profit organization, Imaging The World has already initiated “ pilot programs to provide portable ultrasound imaging in rural areas, such as Belize and Uganda”. The images that are obtained are then uploaded to the Internet for remote interpretation by healthcare professionals and thus rapidly improves and facilitates the delivery of healthcare services. GE Healthcare, along with several other industry partners, academic institutions, government agencies, and health care individuals are involved in these activities — http://imagingtheworld. rg/.

Secondly, the world population living in the area from 10 degrees to 40 degrees North of the equator (the 10/40 Window) and extending from North Africa to China consists of approximately 2 billion people (http://en. wikipedia. org/wiki/10/40_Window) — many of whom have unmet healthcare needs that could be addressed by using a low-cost ultrasound portable medical device. One of the major limitations with developing a portable low-cost ultrasound device is it’s need for a reliable, dependable, cheap, readily available source of energy to run and efficiently operate the device. In this area of the world, given the availability of sunlight, this could be harnessed and used to generate plenty of energy for portable hand-held, small devices.

Therefore, while GE Healthcare is pursuing the development of a low-cost ultrasound transducer, it seems plausible that it should consider how it can incorporate known existing solar-based technology into its portable

ultrasound device — which should be quite feasible. Although, GE already has a GE Energy division that makes solar powered systems — there are other smaller niche companies (i. e. Advanced Energy Group, Conroe TX) that have also developed solar-powered systems that could potentially be adapted for use with an ultrasound device.

http://www. solar4power. com/solar-power-devices. html Thirdly, the number of images needed to perform a prenatal ultrasound screening exam during early-mid pregnancy can be based upon a pre-defined protocol that optimizes the evaluation of certain fetal anatomic structures (i.

e. skull, fetal heart activity, spine, chest, abdomen, fetal position) and produces a quality (albeit, limited) diagnostic examination. The total size of these image files and the time needed to upload them to the Internet are typically much smaller compared to the MRI or CT scan image dataset files. Finally, in rural and remote communities of the world, there’s a growing number of cellular telephones users and subscribers (~ 2-3 billion) who critically depend upon portable electronic devices as a primary means of daily communication. Given the size and emergence of these large global communication network spreads and the potential to use Google (NASDAQ: GOOG)Wave (http://en.

wikipedia. rg/wiki/Google_Wave) to seamlessly translate different languages on the fly, inter-connect, and communicate with remote areas of the world — it may be just a matter of time before we start seeing images that have been created and sent using a solar-powered portable ultrasound device, a regular cellular telephone, and the Internet. http://en. wikipedia.

org/wiki/Mobile_phone#cite_note-1 Perhaps, a solar-powered ultrasound device is much closer to being a reality than we think. The original publication of this article on the Internet was 9 Nov 2009 at the following website: https://councils. glgroup. com/news/Analyses. mvc/Details/44623