

# Medical Imaging Futures -- Confluence of Biology, Technology, and Economics

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## **Abstract**

*Medical Imaging is experiencing a Perfect Storm-like scenario due to the impact of several external forces. These forces will shape its future during the 21st Century in several fundamental ways. The deciphering of the human genome is enabling the migration of the imaging function to much earlier stages of the disease process. On the technology front, Moore's Law and other factors are enabling far greater role for computers and visualization than before. Included in this are technologies which acquire three dimensional image data from larger patient populations and hence challenge the ability of a human to review and diagnose. Finally, medical imaging is one of the culprits for the continuous inflationary pressures on health care costs. This*

*talk is an attempt to describe these influences and to project likely scenarios that may arise.*

## **Author Biography**

*Kai E. Thomenius is a Chief Technologist in the Imaging Technologies Organization at General Electric's Global Research facility in Niskayuna, NY. His focus is on Ultrasound and Biomedical Engineering. Previously, he has held senior R&D roles in several imaging companies, and is also an Adjunct Professor in ECSE Department at Rensselaer Polytechnic Institute where he teaches a course in general imaging. Dr. Thomenius' academic background is in electrical engineering with a minor in physiology; all of his degrees are from Rutgers University. He is a Fellow of the American Institute of Ultrasound in Medicine. Dr. Thomenius' current research interests are in miniaturization of scanners and in fusion of different imaging modalities.*