



## APPLICATIONS OF INFORMATION TECHNOLOGY IN UNITED STATES HEALTHCARE

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**ABSTRACT:** Healthcare in the United States is going through some dramatic changes due to both “top down” government efforts and the “bottom up” innovations in health products and applications. With the Affordable Care Act and the HITECH Act the Obama administration is driving changes in healthcare and has spelled out a path to a nationwide health Information Technology (IT) infrastructure. The keys to realizing this health IT infrastructure is the breaking down of data silos and implementing emerging medical data standards into an integrated open IT system. Governments and standards organizations can provide incentives but a partnership between research hospitals and commercial enterprises is needed to build open source systems based on standards like FHIR, CIMI, and the secure Google big table repository called Accumulo. Such a “grass roots” movement can lead the way toward open data interoperability systems that can scale to an international health IT infrastructure. This is the perfect time for IT to have an impact on healthcare that takes full advantage of the worldwide digital communications infrastructure developed by the Telecom industry.

**BIOGRAPHY:** **Jim K. Omura** obtained B.S. (1962) and M.S. (1963) degrees from MIT and a Ph.D. (1966) degree from Stanford, all in Electrical Engineering. After three years with the Stanford Research Institute, Dr. Omura joined the engineering faculty at the University of California at Los Angeles in 1969. His early academic work was on theoretical performance bounds in Information Theory and the application of mathematical programming techniques to Communication Systems. Dr. Omura also worked on optimal designs of Communication Systems with emphasis on Spread Spectrum Communication Systems. During his academic career he published over 100 technical papers and became an IEEE Fellow in 1981.

In 1984 Dr. Omura co-founded Cylink Corporation in Sunnyvale, California. Cylink became a leading supplier of commercial data encryption systems for enterprise networks. Serving as Chairman and CTO of Cylink, Dr. Omura and his engineering team developed the first 1024-bit public-key commercial encryption chip. Cylink had an IPO in February 1996. During this commercial period of his career, Dr. Omura developed over 20 patents and became a member of the National Academy of Engineering in 1997. He is the recipient of the 2005 IEEE Alexander Graham Bell Medal and was inducted into the Silicon Valley Engineering Hall of Fame in 2009.

Before retiring in 2011 Jim Omura served for nine years as a science program officer for the Gordon and Betty Moore Foundation where he managed grants that supported the \$300 million CalTech Commitment, the \$250 million funding for the Thirty Meter Telescope, the Public Library of Science, the Barcode of Life, and many other grants in the Science Program. In 2013 he founded dataFascia Corporation to develop an IT system for the healthcare market.