Dr. Chang-Gyu Hwang, President & CEO of Samsung Electronics Semiconductor Business, presents future prospects of the evolving semiconductor industry in his talk : "Semiconductor Inspiration for Ubiquitous Era"

ABSTRACT

Digital convergence, ubiquitous... Modern IT industry is progressing rapidly, and new words are being created everyday. Samsung Electronics stands in the very center of this highly competitive IT market. Besides the popular cellular phones or flat screen TV, Samsung has also kept world's No.1 position for thirteen years in memory industry which lead to recent joining of 10-billion-net-profit club despite its 30-year-late entry in semiconductor market.

Semiconductor is being evolved as a driving force in creating new electronic devices (e.g. Flash-type MP3 player, portable game console, tablet PC, etc.), even determining product release schedule while it has been considered only as a component of electronic equipment.

Semiconductor industry, evolved around PC-oriented products, will grow more rapidly as its application diversifies to mobile devices, digital consumer electronics, etc.. The segmentation of usage, multiplication of function, and minimization of products allow the industry to expand more dynamically.

Recent development of 16-Gigabit NAND Flash Memory using 50-nm technology marks a major turning point in the use of memory for data storage which would lead to a surging demand and a modern-day "Flash Rush" replacing other storage mediums, especially those used in mobile products. The thumbnail-sized chip holds 16.4 billion functional transistors each measuring one two-thousandth of the thickness of a human hair. A memory card made of this chip can store either 200 years of an average daily newspaper, 8000 MP3 music files (680 hours) or 20 DVD resolution movies.

This year's introduction of 16-Gigabit NAND Flash Memory continues Samsung success in doubling memory density for each of the past six consecutive years. Whereas PC era was driven by Moore's Law, new digital and mobile era is being replaced by Samsung's New Memory Growth Model.

The concept of digital convergence in semiconductor technology including Multi-Chip Package, System in Package, and Fusion Semiconductors has been introduced, and active research on semiconductor using new material is being carried out. Samsung plans to further strengthen its competitiveness through synergy between Memory and System LSI firmly establishing itself as a true leader in the digital era.