

Foreword

Issues on Information Technology



Takamitsu Tsuchimoto
President

Fujitsu Ten engages in the car electronics enterprise, and the entire car electronics industry is increasingly involved with IT. Accompanied by digitalization, the evolution of the Internet and cellular phones, and growing needs for entertainment, audio visual communication (AVC) now deserves to be expressed as infotainment (information + entertainment). The ECU of motoronics (motor + electronics) is composed of high-performance computers and advanced software systems. The intelligent transportation system (ITS) focuses on communication between the inside and outside of vehicles, and a high degree of information processing.

Basic technologies to support IT consist of processing technology, recording technology including media, and communication technology. These basic technologies have grown while being powered by the engine of the growing market fields of each era.

Processing technology depends on semiconductor technology. Meanwhile, it attracts attention to what arises next to focus on semiconductors for their development. Semiconductor technology has recently shifted from personal computers to a wide variety of digital devices and embedded computers for mobile devices, and low power and downsizing combined with high performance have accelerated at a rapid pace. Car microcomputers must be developed further in the future.

Recording technology has evolved most in the past 10 years. In the audio-visual field, recording media has changed from cassette tapes to CD, MD, and DVD. In the field of PC, hard disc drives (HDD) have made remarkable progress. For car electronics, the future development of in-vehicle HDD and semiconductor memory is anticipated, and collaboration with the evolution of communication technology such as music distribution services and network navigation is crucial.

Communication technology has made the most spectacular progress in the past few years with the prevalence of the Internet and cellular phones. Not to mention the importance of broadband cellular phones and digital broadcasting for vehicle use, it is the key how comprehensive communication infrastructure is to be strengthened. In that sense, technological development for extremely large capacity is longed for,

such as dense wavelength division multiplex (DWDM).

I consider the following as the three keys in our involvement with basic technologies.

- (1) Constantly ascertain both sensitively and calmly what type of growing market field the basic technologies are aiming for through drastic advancement.
- (2) Employ new technologies at the optimum timing. If the timing is too early, the risk is unsatisfactory quality and cost. If it is too late, the risk is to lose competitiveness and be forced to withdraw from the business. We caution ourselves that the car electronics industry should not end up being counted in Olympiad while the IT industry is counted in Dog Year.
- (3) Make a strong appeal to technology suppliers that the in-vehicle product market is fully attractive and promising, so that research and development are to be enhanced for this field. I think it necessary to take risks and lead by envisioning the future of vehicle devices.

Our vital IT technologies are human machine interface (HMI) and system integration, as well as basic technologies. The fundamental technologies of HMI are common to those of non-vehicle electronics and it is important to employ them appropriately. The development of HMI exclusive to vehicle electronics has become more significant. Display, voice and sensing technologies, and agent functions are important. Along with the improvement of service levels achieved by the high performance of computers and advanced and sophisticated HMI, complex digital circuits and complex large-scale software have been accelerated at remarkably high speed. It is required to further pursue simplification of the extremely complicated systems, i.e. systematic approaches in system construction such as hierarchization, standardization, and modulization, and easy response to productivity, reliability, and changes of software, including description in high level languages and the enrichment of simulations.

The automobile industry has been through M&A and reorganization to fight for survival, which results in more harsh competition. The environment surrounding car electronics manufacturers, including ourselves, is increasingly severe. Quality and cost are major preconditions for survival. However, I fully acknowledge that they are not sufficient alone. By improving IT-related technologies and offering new ideas and suggestions of originality, in addition to collaboration with both affiliates and non-affiliates, we aim to become a company highly reputed by our customers.



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