## Speed of development determines winner



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While it has been said that the speed of development is important, the speed these days is more accelerating. I suppose transition of development key from hardware to software and service largely influences the speed of development. We used to devote our energy to develop high-quality products with automakers, focusing our business on hardware building. Of course, this is important, but it is also true that we almost come to miss out on the major social trend toward software and service.

I have heard that the interesting application that has been downloaded thousands times through a web market was actually developed by a certain application programmer (maybe a junior high school student or a high school student) in a day based on just his/her casual idea. This is an extreme but pertinent story that indicates the speed in the software business.

The hardware for vehicles is developed on a cycle from two years to four years, but the hardware for computers and smartphones is developed on a shorter cycle from three months to a half year. A company trying to follow the advancement of informatization has to develop hardware and software speedily. But if not, the company will be shaken out from the market.

The products we manufactures, in-vehicle information equipment, are in the difficult position between vehicles and general information equipment. If we can not develop our products more speedily, our products will be superseded by smartphones. On the other hand, if we can not provide the products with the required quality for vehicles, automakers will not continue business relations with us any more. That is, we have to address the two challenges; developing our products speedily while ensuring their quality.

Reconsidering quality concept will be one possible solution. The quality concept I mentioned is regarding an information system and essential vehicle performance, such as running, turning and

stopping. While there is no room for reconsideration of the quality concept regarding the essential vehicle performance, there is room for argument on the information system with automakers.

Failures that interfere with safety driving are out of question, but it is impossible for us to ensure the quality of all of the information transmitted into a vehicle through various communication media. On the other hand, excessive filtering by focusing on the quality reduces the value and the volume of information. We have to prepare some ideas for excuse and solutions to convince a user to accept our quality concept. While it is difficult to upgrade the hardware for improving quality, it is now possible to automatically upgrade the software through communication media. A new idea for upgrading the software without giving the user a feeling of strangeness is important.

First thing to speed up the development is to build up a highly-scalable solid platform. Scalable CPUs and selectable memories are the keys for scalability, and diversity of API is also the key for future software.

In these days when software and service are emphasized extremely, the most important issue is to speed up the development of service function applications. The development of such an application requires ICT of course, but inspiration as well. As you know, Graham Bell and Elisha Gray have applied for respective patents almost the same time (Bell has applied approx. 2 hours earlier). There are a lot of people who have similar ideas all over the world. Winning or losing in the business field depends on how quickly we can start development based on an idea and put them into the world. I expect that everyone in the company cooperates and works well together in developing speedily the service that moves customers.

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