

SCSK Automotive Software Business

Date: May 20th, 2015

Speaker: Shoichi Kondou,

Executive Officer,

Automotive Systems Business Div.,

Manufacturing Systems Business Group

In today's presentation, I would first like to describe our achievements in automotive system development. I will then explain how automotive system development has changed, why we see it as a business opportunity, and finally the services that we will offer moving forward.

Firstly, I would like to talk about our achievements with regards to automotive system development. Before our merger, CSK Corporation developed embedded systems. We started from systems that control steel production lines, and with regard to cars, we initially started working on engine control when microprocessors were first used in the 80's, and have continuously developed systems to this day.

We have developed a comprehensive range of products in areas including powertrain control, such as engine and gear control, as well as body control, fleet control, drive safety control— which is expected to grow the most in the future—and telematics, which includes car navigation systems. With our technology and experienced engineers, I think it would be possible that we “rewrite” the entire vehicle.

Next, I would like to talk about our major achievements. We have experience in all technological elements, from firmware development through to cutting-edge base model development. In addition to making these products, we also provide inspection tools to verify them through “fault diagnosis.” What this means is that, when you visited a car dealer in the past, the dealer would hit a car with a hammer to detect faults because vehicles were mechanical. Nowadays, vehicles are electronically controlled, so faults are detected by checking and verifying electronic logs, which is done with these inspection tools that we have been making for more than 10 years.

Some of you may be familiar with the Toyota Production System, which purports that development involves maintaining quality by establishing and following procedures for production. Working closely with our clients, we have applied the same philosophy to software development in order to increase productivity and quality. A standard called “Automotive SPICE” was recently created, and more than 50 engineers in our company have this certification.

Now, I would like to talk about the changes to the environment in the automotive system business. As you all know, vehicles' internal structures are becoming increasingly complex and sophisticated in conjunction with the concepts of advanced driving support and automated driving. Due to this trend, it is said that the scale of development will be more than 10 times greater than the amount described here. Currently, one vehicle requires approximately 10 to 20 million steps. In the future, more than 100 million steps will be required. Simply put, 10 times more human resources will be required.

Basically, development process cannot be handled with human labor alone. The conventional method was to develop everything on microprocessors, from the OS and firmware I mentioned, through to applications. In the future, however, we will classify development into layers and create things like OS and basic software to minimize the range of application development. This is the basic software that are we are working on.

During the mainframe computer era, you may recall that even banks and steel companies customized their own OS for their mainframes, wrote their own utility tools, and developed their own applications. Since then, UNIX and Windows have spread and companies no longer have to make everything themselves, except for the functions they really need. Just the same things are currently occurring in the Automotive System development area. This is how we interpret the changes in the industry.

We are able to recognize these changes based on our knowledge and experience cultivated from our 45 year history through which we have responded to the change from mainframes to UNIX and Windows, and we have been developing automotive software since its inception. As a result, we have been involved in this development for over two years.

We are ready to offer the services that will be needed when the process of automotive system development changes – as I have just described. One of these is standardized OS basic software. Development methods will change accordingly, and we want to offer those development processes as services.

Next, having provided that process, we will offer development tools that automatically generate development tool programs to improve efficiency and quality and automate testing. We will also offer training and certification system services. As I mentioned earlier, as development of microprocessors, ECU, and embedded systems is no longer the work of just one or two people, these processes, tools, and training will become crucial when offering our services for development as a team.

So how can we handle all these changes? Looking back, we have more than 30 years' worth of knowledge and experience with automotive software as well as with the opening of the software environment from the mainframe to the cloud. Cultivating this knowledge and experience leads to our being able to offer the design for these services. Furthermore, we have the infrastructure and resources to provide them. This is how we are able to offer these services.

Let me summarize the details of offerings and earnings models for these services. Services that we had been providing with our staff will be offered as intellectual property and licenses moving forward. BSW will of course be offered on a license basis. Tools and trainings will be offered on the basis of the amount used, which is conversion to service businesses, similar to cloud services and the like.

Our pricing will be set on the basis that they are beneficial to our customers as well as ourselves based on the prices that we currently receive as system integrators. Through this initiative and synergies with our system integration services, I believe that the volume of application development will increase, and we are drafting an overall business plan in conjunction with this earnings model. This concludes my presentation. Thank you for your attention.