advantages. Hong Kong people tend to have an international mindset, flexible and responsive. ACS is willing to offer the service of customizing our products to meet the precise requirements of our broad base of customers. Very few suppliers are as flexible as we are and so, we are winning customers continuously.

CNA: As an Asian company, do you suffer any setback when competing internationally?

Denny: As an Asian company, it is more difficult to build a brand name than, say, a German company. I have also heard from some German customers that German companies prefer to buy German technologies. I have also heard from some Japanese customers that Japanese companies believe in Japanese goods. I seldom hear Hong Kong people prefer Hong Kong goods.

CNA: Do you think Asia is ready for a more rapid migration to EMV?

Denny: EMV migration would not be fast anywhere in the world but it will indeed be faster in Asia. Many countries in Asia with a big population such as China and India have low credit card circulation. It is less costly to build the smart card-based credit card infrastructure in Asia than to modify and replace the magnetic card systems already built in Europe or in US. There is another factor and that is the rate of payment default. A German friend once told me that smart cards for banks will become popular in the following time order - 1st in Asia, then in Europe and then US. His reason is that the fraud rate is lowest in US. There may be some truth in what he said.

CNA: Is Asia having the biggest potential in terms of market share for your product offerings?

Denny: Our 1st key product is the PC-linked reader. The demand of such readers 1st emerged in Europe. Europe was taken as our key market. Then US became an important market owing to the Common Access Card (CAC) project by the US government. Asia has now become a very important market for us as well. The demand is more diversified and is growing. At the same time, our product range is being expanded to meet the emerging new requirements, eg. contactless readers for ID cards and for payment. By having our operations based in Asia, we also have the advantage of being geographically closer to our Asian customers. Asia has the biggest potential in terms of market share for our product offerings.

CNA: As the world's 1st company to introduce the PC/SC-compliant USB smart card reader, how has this achievement revolutionized the cards industry?

Denny: We introduced this reader to the market as early as 1999 in CeBIT, Hannover, Germany. Microsoft wanted to speed up the use of smart card readers by setting its PCSC standard, while MasterCard and Visa wanted to achieve the same objective by setting their EMV standard. ACS developed and launched the readers early to the market at very affordable prices. We provided the software development kits (SDKs) with demonstration programmes and even their source code for solution houses to try to use the reader with various types of cards. We are easy to work with. We attempt to make a contribution to facilitate the implementation of smart card-based solution, especially PKI solutions.

CNA: Many of ACS' openly available resources such as training, development kits, technical manuals and

materials had helped the industry to grow. Why did you offer these to the public, whereas your competitors would have guarded these so tightly?

Denny: We seldom sell directly to end customers and we work mainly with "middlemen", such as solution houses and distributors. In the smart card industry, there are quite a few of such companies. For example, many card suppliers themselves are solution houses. Thus we deal with card suppliers including some global card suppliers. When dealing with them, we cannot avoid exposing information, be it new or old. Sometimes, we even expose crucial information to a competitor if we believe that the potential return justifies the risks. In the technology business, competitors could be partners and partners could be competitors. As long as a cooperation can make each party stronger than the bulk of other competitors, the cooperation is likely to be worthwhile.

CNA: As the recipient of the Frost & Sullivan's Growth Strategy Leadership Award, tell us more on your strategy to stay ahead and lead with bigger growth in the industry.

Denny: I want to make ACS a successful and long-lasting company. We may appear to be doing poorly in 1 or 2 years but I want ACS to be successful over a long period of time. To be successful in any business, there are always 2 things that a business leader needs to do. 1st is to find the right people and motivate them. 2nd is to give them the right direction (ie. a strategy as you say). If the leader can motivate his people, all of them may work full-heartedly. But if they do the wrong things owing to the wrong direction from the leader, their work will be futile. Another leader may be visionary and has good strategy. However, if he cannot motivate his people, he cannot achieve much. Thus people and strategy are two vital things. I believe that having the right people and respecting them is more important than having the right strategy, as strategies are figured out by people.

It has always been my attempt to find the right people and make them work happily in ACS. As the industry is changing, the
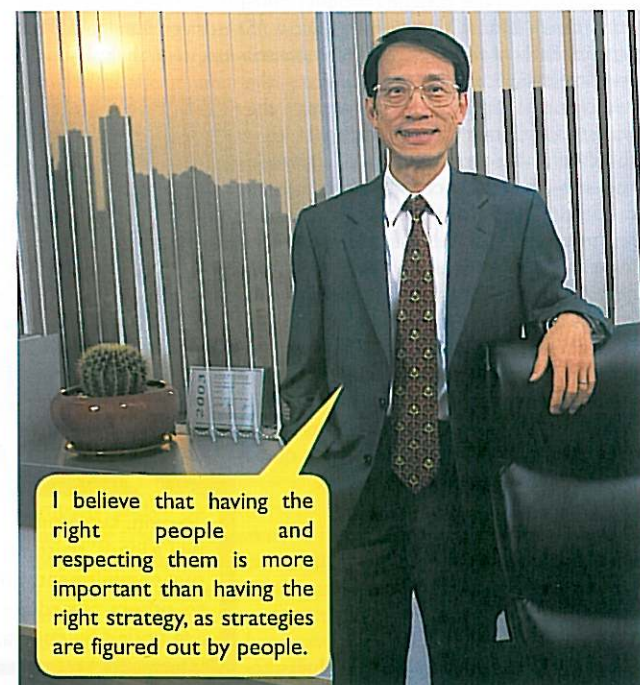
> I believe that having the right people and respecting them is more important than having the right strategy, as strategies are figured out by people.

strategy may need to be changed. The right people will find a new and right strategy to cope with the change. Thus my simple answer to your question is that my strategy is constantly to find the right people and make them happy working in ACS.

CNA: Being the 1st to offer a card reader based on a single-Application Specific Integrated Circuit (ASIC) solution with EMV Level 1 certification, how has the market reacted to this product?

Denny: We had this reader certified for EMV Level 1 compliance more than 3 years ago. However, the customers insisting on EMV Level 1 standard compliance are mainly those targetting banking projects. Most PC-linked readers are used for logical access control to PC or for internet security applications. Customers aiming for such applications normally do not require such a certification. Overall, the market has reacted less warmly than we had expected. Nevertheless, as the EMV migration takes off, EMV Level 1 standard would become mandatory.

CNA: With a diversified offering range of smart cards, card readers, terminals, chip sets, development kits, OSes, applications and consultancy services, which of the above contributes the most to your revenue, and why?

Denny: Our main products are smart card readers for contact and contactless cards. Our terminals are also smart card readers that are just more sophisticated than the basic smart card readers. Chip sets are the core chips of smart card readers. The SDKs, the demonstration application and "consultancy services" are used to help customers learn and use our readers. Thus we are primarily a smart card reader company and such readers account for some 50% of our total sales revenue.

We focused our attention on card readers 1st. Then we integrated our readers with technologies from others such as with a fingerprint scanner or dynamic password generator. We also supply different modules with a mix of such technologies. For example, we are providing electronic modules incorporating a contactless card reader and a fingerprint scanner to manufacturers of safes and locks. In this sense we have diversified but we did so naturally.

The OS is a different animal. ACS is serving a niche market, which most global suppliers are not interested in. Most of them de-emphasized the proprietary COS faster than the market wants. We developed the 1st COS named ACOS1 as early as 1996. We have been selling OSes even though we have never promoted it aggressively. We do have reliable COS products, well-proven in the field and sold at competitive prices. We recently started to put more resources on this product line and will introduce new COS products to the market in early 2005.

CNA: Your mission is to become a leading technology provider to enable smart card-based solutions in the worldwide market. How far have you achieved this mission?

Denny: When we say ACS is "to enable smart card-based solutions", I am conveying the message that we are not a total solutions provider. Rather, we facilitate the implementation of such solutions by providing the needed components, such as readers and then cards, and the knowledge to use them. We have

supplied products to customers in over 60 countries. Some customers further spread-out our products. We offer development kits, training and technical support to solution houses and have facilitated the implementation of numerous projects in the world.

CNA: As a veteran in the cards industry, what would be your advice to those young aspirants who intend to enter this ever-changing and challenging cards industry?

Denny: If a young aspirant wants to get into the IT or technology industry, the cards industry is not a bad choice at all. This industry is growing owing to widening applications. Chip cards were initially used mainly as memory cards for pay phones and then as GSM cards for mobile phones. Then applications were extended to cover banking, healthcare and pay TV. ID cards including national ID cards using chips will expand most drastically. As the cards are getting cheaper, they are more affordable and the increase in quantity outpaces the decrease in price. Since the number of cards issued in a country is closely linked to its population, the Asian market will in particular grow the fastest. People tend to learn more in an ever-changing industry. The experience gained in the cards industry will equip young aspirants for further career pursuit in this industry or in other IT or technology industry.

CNA: What is your vision for ACS in the coming 3-5 years?

Denny: The culture of ACS will remain the same 3 years, 5 years or 20 years from now. We will try to make our customers happy by providing them good quality products and by delivering our commitments. If we want to provide good products, we must focus on our core competence. We will continue to focus on our reader business. If we take all readers together, the world market is about US$2 billion. The POS terminals for banks take up three-quarters of this market ie. US$1.5 billion. The remaining reader market will be US$0.5 billion including the PC-linked reader with a market size of some US$0.1 billion and many other types of readers of market US$0.4 billion. In the next 3-5 years we will focus on this US$0.5 billion market which will be expanding itself. We want to be a major player in this market. We do not exclude other product areas but would only get into them if we find the right partners and if the new business has a synergy with the reader business.