Since the last special issue on printers (1993), the Printer Department of Oki Electric Industry Co. Ltd. became independent along with the Facsimile Department, and the subsidiary company, Oki Data Corporation who completely handles from R & D to design, manufacturing and sales, was established. This measure was taken to deal with the gradually emerging differences in business format between the main business of Oki Electric and their printer and facsimile businesses.

While succeeding the superb original technology and global markets accumulated during the time of Oki Electric, Oki Data Corporation is consecutively releasing creative products to the radically changing market strongly conscious of global environmental problems without neglecting the challenges to evolve remarkable technologies.

On this occasion with the release of the special issue on printers, the first time after the establishment of Oki Data Corporation, I would like to present some ideas on the technological aspects of the Oki Data Corporation’s philosophy, as a printer and facsimile specialist manufacturer. Recently I read in the newspaper that Life magazine choose the printing of the Bible by Gutenberg (1445) as the most important event in the last 1000 years.

I thought “precisely”. The greatest desire of a human being is communication, and language was the first tool that humans invented. Language transfer capability by voice, however, was not very high in terms of content and distance. To improve this, symbols (characters) were invented and a concept called printing was born. The British Museum in London and the Gutenberg Museum in Mainz have exhibits on cylindrical print matrix, which already existed in the Mesopotamian Period. Printing as a highly reliable communication media, however, was not implemented until the invention of paper and the appearance of Gutenberg. It is said that paper was invented in China around the first century BC, so it is not an overstatement to say that Gutenberg is the greatest contributor to this millennium (1000 years).

We regard printers and facsimiles as communication tools. Communication tools include the telegraph, telephone, radio, TV and the current PC and Internet. Of all these, printers and facsimiles are highly reliable communication tools because the communication media is paper. Oki Electric has been developing business centered around communication. Their corporate slogan is “People to People Technology”. The slogan of Oki Data Corporation, who places special attention to paper, is “People to People Technology on Paper”.

When we want to communicate with another individual, a line of communication must be set up with that individual. For the line setting, a procedure based on a common rule, which is generally called protocol, is necessary. From the global point of view, we must think of a protocol that is common to all human beings. We think that protocol is “beauty”, which is common among all human beings and has the highest cultural value. Therefore our great interest is how to implement our common protocol, beauty, in printers and facsimiles as communication tools. Printed paper must have a beautiful face and equipment must have beauty that matches with the environment where the equipment is placed.

The Society for Information Display (SID), a group related to image print, has been awarding the Gutenberg Prize, the highest honor to be given to a contributor. Dr. Shigenaga Nakaya of Oki Electric (former Executive Director, now deceased) received this honor in 1989 in recognition of the achievements of his team in developing a heating element array. This is an engine component of a thermal facsimile, a development that later rapidly spread throughout the world.

This array system applied to the light emitting diode (LED) array, which is now the engine of page printers (electrophotographic type), the main product of Oki Data. The difference between an LED system and laser system which many other companies are adapting is that one emits light from fixed array positions and the other moves light emitted from one laser using mirror and lens. The fixing type has obvious advantages. For example, the LED system does not have the fundamental limitations that the laser system is facing, in increasing resolution, reliability, width and speed, in decreasing size, prolonging life and supporting the environment. This advantage is a strong weapon for Oki Data who pursues beauty in both printing quality and appearance.

In the introduction to the last special issue (1993) I wrote about paper and beauty as “Aesthetics on Paper”. I mention it here again because I want to emphasize that the basic philosophy of Oki Data has not changed, but has been reinforced after Oki Data became established as a separate company. The big difference, however, is the market environment. Many of our outlets for products are now through mass market stores. Inkjet printers have spread into homes and color printers are common. High end machines for large office equipment and for artwork specialists are also becoming quite popular. The market has diversified considerably from high end machines to popular machines, from use in networks and for hobbies, and from photographic quality color to artwork.

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From a technological point of view, such a market environment requires the steadfast evolution of fundamental technologies and quick expansion to diversified products at the same time. This means that technological power and more dynamic flexibility are demanded. The increase of products sold through mass market stores and product for home use have naturally caused a radical drop in prices. The major portion of a product cost is usually design, so a cost reduction beyond the level that can be handled by technological aspects is demanded. It is therefore inevitable to turn overseas, such as Southeast Asia, to purchase materials and components, and for assembly. Such a radical change in the environment is recently recognized as a complex market system or complex economic system. That is, an unknown future, rapid change and radical change are very common for complex systems, and must be accepted as a natural phenomena without being upset or thrown into a panic. It is said that the only way to survive in such an environment is through “creation”. This is the very reason why Oki Data Corporation is developing and nurturing original technology and constantly generating creative products.

Even being involved in a complex system where no one knows what will happen in the future, we must not lose sight of the direction that we are supposed to advance towards. To that end our key words are communication and beauty. When we aim at beauty, the contemporary key word is naturally the global environment. Although paper is an indispensable medium to insure the reliability of communication, paper must be conserved as much as possible from the environmental point of view. For printers, it is important to implement performance such that printing quality does not depend on paper quality, including recycled paper. It is also required to minimize the waste of consumables and to develop products with low power consumption.

An environment oriented policy has been the basic policy of Oki Electric, which includes the reinking of ribbons of impact printers. Oki Electric has been tackling environmental issues since the time when environmental issues were not yet central to public concern. Oki Data Corporation succeeded with an environment oriented technology along with such basic technologies as printer engines and paper feed, and we kept nurturing these technologies. Based on such superb original technology, we are releasing creative products to a diversified and globalized market.

Printer and facsimile businesses cannot be conducted by Oki Data Corporation alone, but is conducted as an industrial network with our parent company Oki Electric Industry and many other companies that possess the latest technology. Oki Data Corporation owes our operations to the guidance, support and cooperation of all these individuals. In conclusion I would like to deeply thank them.