A Success Story with Unicode
by Tatsuo Kobayashi

In 1995, there was a visitor from the U.S. named Dr. Asmus Freytag to an independent software vendor in Japan, named Justsystem Corporation, founded by a married couple named Ukigawa. That was the beginning of the story. Dr Freytag enthusiastically invited the vice president Hatsuko Ukigawa to join the Unicode Consortium. However, in that era, the position of the Unicode Standard was terribly bad in Japan. There had been a strong negative campaign against the Unicode Standard from rather conservative and nationalistic sectors, saying that Unicode is developed by western companies which know neither Japanese culture nor East Asian Han Ideographs, and the wide spread of the Unicode Standard would destroy the heritage of Japanese culture in the cyberspace. Tatsuo Kobayashi of the product planning staff had been hearing about the negative campaign, and he attacked Dr. Freytag from a negative position. There continued debate for a while. At last, Dr. Freytag said, "It is easy to attack from the outside. However, nothing happens by such action. If you truly want to change the situation, why not jump into the Consortium, and try to change the situation by yourself."

This last word made Hatsuko decide to join the Consortium as the only full member company from Japan, and Tatsuo was assigned as the representative for the Consortium.

At first Tatsuo had nothing to do with the Unicode Technical Committee. However, his joining made the Consortium change a little bit. Before his joining, there was no non-US resident member in the Consortium, so the decisions as the Consortium and as the U.S. National Body, were mixed. After he joined, the decisions of each body were then made independently.

Just after he joined the Committee, another Japanese member, Hideki Hiura, re-joined the Committee. He was working for Sun Microsystems, and was very famous in the Unix community, especially as an expert on internationalization of the X Window system.

With the re-joining of Hideki, Tatsuo's contribution to the Consortium and the Unicode Technical Committee gradually increased. Especially, his knowledge of Han Ideographs as a native speaker, and his inside information about acceptance of the Unicode Standard in the Japanese market were useful for the Consortium.

Before long, Tatsuo was elected as a member of the Unicode Board of Directors. He worked continuously to bi-directionally to inform both the Unicode community of the Japanese market and the Japanese market of the Unicode community. Little by little, his efforts changed the relationship between the Unicode community and the Japanese market for the better. His effort was not only focused on public activity, but was also reflected on the strategy and development of Justsystem's products.

In those days, the Japanese ICT environment was rapidly changing. There began to be a replacement of legacy mainframe computers to Unix based workstations and personal computers. The Internet was rapidly spreading. New technologies such as Java and XML were gaining new developers. In such circumstances, the Japanese legacy character encoding scheme, JIS X 0208, was gradually loosing its share and position. On the contrary, Unicode and/or ISO/IEC 10646 was gaining share with new information and communication technologies, together with platforms such as XML, Java, Linux, Mac-OS X, and Windows.

The Japanese anti-ICT campaign was mainly focused on the lack of numbers of Han Ideographic Characters, which are necessary to write literature. However, upon reviewing both JIS X 0208 and the Unicode Standard, both the pro-side and the con-side found that almost all characters that the con-side claimed were lacking, were already encoded in the Unicode Standard, even though they were not encoded in JIS X 0208.

In such circumstances, Justsystem developed and shipped the first Unicode based Japanese word processor named "Ichitaro" early in 1997 before Microsoft shipped MS-Word based on the Unicode Standard. With Unicode based "Ichitaro", Justsystem gained a high reputation among professionals of Japanese language and literature, professional writers, and some of the conservative nationalists.

In 2000, there were two prominent issues announced in Japan. One was the "Hyogai Kanji Jitaihyou", a recommendation for the standard shapes of Han Characters, out of the range of daily use Han Character Table by the Kokugo Shingikai (the Advisory Council for Japanese Language) conducted by the Ministry of Education, Culture, Sports, Science and Technology. Kazunori Ukigawa, the president of Justsystem, contributed a recommendation as one of the youngest members of Kokugo Shingikai, and Tatsuo assisted Kazunori as a consultant and an expert in this area. The other issue was the release of JIS X 0213 the extended KANJI set beyond JIS X 0208 by Ministry of Economy, Trade and Industry (METI). Unfortunately, JIS X 0213 was developed without reflecting information from the Kokugo Shingikai, accordingly there occurred some inconsistencies in the shapes of Han Characters between Hyougai Kanjihyou and JIS X 0213, resulting from lack of communication among the ministries.

Besides the domestic problems, JIS X0213 had a serious problem in keeping consistency with the international standard ISO/IEC 10646 and/or Unicode Standard. The repertoire was selected very carefully and was well prepared. However, the architecture was still stuck on the Japanese legacy structure called "Shift-JIS". In addition, there are around 200 Han characters which were not included in Unicode. To keep consistency with Unicode, those characters had to be standardized as an additional repertoire in Unicode.

However, there were serious opposition forces within the international standardization community.

From the Japanese side, to include all the 200 characters in the BMP (Basic Multi-Lingual Plane) was preferable, but the space for new characters in the BMP was already very tight, and the right to be assigned in the BMP had to be evenly open for every new character. Accordingly, some of the characters had to encoded in Plane-2 within the UTF-16 architecture.

There was another inconsistency between the JIS architecture and Unicode architecture. Some of the JIS X 0213 characters had to be encoded with the combining character architecture. These problems were very serious for Japanese ICT industries. If they followed the Unicode model, there would be serious inconsistency between their already installed legacy systems and the new Unicode based architecture, accordingly it meant they had to pay huge new development and training costs. But if they stuck to the legacy system, Japanese ICT industry would be left behind global ICT improvement for ever.

Almost all of the Japanese ICT industry decided to stick on claiming that all the characters must be assigned in the BMP. Tatsuo, as the representative of Justsystem to the Unicode Technical Committee, did not take the majority position in Japan. It was more than apparent that the majority in the global ICT area had already changed to Unicode. Also, from the international equal opportunity view, the Japanese claim was too selfish. In the end, the ISO/IEC community and the Unicode community accepted all of JIS X 0213 repertory in the international standard on the condition that some characters should be assigned in Plane-2, and some other characters should be encoded as combining characters.

Before implementing JIS X 0213 characters in commercial products, a domestic issue needed to be settled, which was caused by the inconsistency between JIS X 0213 and the Hyougai Kanjihyo.
METI decided to revise JIS X 0213 to match the Hyougai Kanjihyo, and established a committee to draft the revised edition. Tatsuo joined the committee as an organizer.

In 2004, the revised JIS X 0213 was published. In 2005, Justsystem shipped the new version of Ichitaro with full support of new JIS X 0213, again, earlier than Microsoft's JIS X 0213 support with Windows VISTA.

In 2007, the Unicode Standard 5.0 was published. Kazunori Ukigawa contributed a quote for this issue as did other big names in ICT field such as Sir Tim Berners-Lee, Bill Gates, James Gosling and so on. Kazunori said,

"Justsystems was the first vendor in Japan to implement the Unicode architecture in word processing software. Thus for over a decade Japanese computer users have enjoyed the benefits of Unicode, especially the CJK Unified Ideographs. We are now aggressively launching our new technology 'xfy' on XML and Java – thanks to Unicode, it is already internationalized! Justsystems appreciates the Unicode philosophy and architecture of universality, and welcome the publication of version 5.0."

In 2008, ISO/IEC 10646 Amendment 3 was approved. In this amendment, there are a few new sub-repertories for Japanese language support, proposed by the Japanese National Body. This means that the Japanese market and industry finally decided to throw the domestic coded character set standards away, and catch up with the international standard.