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## New Clouds over the Hill

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I believe many of our Japanese readers have heard of “Saka no Ue no Kumo” or “Clouds over the Hill”, a historical novel by Ryotaro Shiba. It was turned into a television drama by the NHK, and many people have likely read the novels as well. In “Clouds over the Hill”, Japan is just emerging from feudal times, and if Japan can only climb its way to the top, then it can become a modern state like Europe and America. The title refers to this yearning and longing, which is compared to a length of clouds hanging just out of reach over a hill.

At the beginning of the Meiji era, Japan was a very small country. The only real industries were agriculture, and the only real human resources with potential were families of former samurai and their three hundred year history as the literate class. The Russo-Japanese War was the first time that such a small and remote little country would take on the European civilization in a blood-stained confrontation. Aware of the danger of becoming a colony if they did not fight, the Japanese people gathered all of their knowledge and strength, grasped for good luck, and used all possible diplomatic knowledge to lead the war to victory. People fighting their own fights in the modern business world can relate to the trial-filled battles of the Akiyama brothers in the “Clouds over the Hill” story. That is one reason why this novel is read and supported by so many business men.

The Japanese manufacturing industry recovered after the loss of World War II, and for many years showed overwhelming force in the global market. The Japanese manufacturing industry had all sorts of products, from raw materials to applications, but it also had high technological strength and every possible key technology. With this technology, the Japanese manufacturing industry was able to achieve amazing developments. However, the modern manufacturing industry faces many difficulties. First, there is the question of who will take over as the next generation of skilled workers when the babyboomers begin to retire en masse, a problem that we can call the “skilled worker crisis”. This is not a problem that is limited to the manufacturing industry, but it is a common problem for many industries where it is difficult to turn tacit knowledge into explicit knowledge.

The next problem is global competition. In the 1980’s, Japan saw great economic growth primarily through exports to North America. This was as

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much due to Japan's superior technology as it was due to the weak Japanese yen. Forgetting that, the Japanese people perhaps became a bit overconfident. Later, guided by the strong Japanese yen after the Plaza agreement, many Japanese manufacturers struggled with exports and began adopting the strategy of shifting production bases abroad. However, the global competition did not just come from the strong Japanese yen. This problem we can call "development of global networks for products".

There are likely no companies that actually produce every single part necessary to complete a finished consumer product in-house. Before completing a finished consumer product, companies must work through a supply chain (network) made up of many other manufacturing companies. The problem comes from whether your company is a part of this supply chain, or if it has been left out of the chain before you realized it. Networks are not only constructed within national markets, but also within international markets. Products developed for overseas must be aware of global standards lest it one day becomes a product that is only valid within Japan. This would result in the company suddenly being removed from the global network.

The "new clouds" that will help us in the manufacturing industry overcome the "skilled worker crisis" and find victory in the global competition may be just as far as those seen by the Akiyama brothers. However, Japanese people from that time accomplished near miraculous success. Today, there is no reason why we cannot draw close to our "new clouds". To accomplish this, we must continue challenging ourselves with technological developments.

This Technical Report contains results of Sanyo Denki's technological developments. In 2010, Sanyo Denki achieved results such as the development of cooling fans designed to have the industry's top level of low power consumption, development of the voltage dip compensator with an energy conservation function, development of the PV inverter in overseas markets, and development of the stepping motor with high waterproof performance.

By continuing these types of technological developments in the future, we hope to draw a bit closer to our "New Clouds over the Hill" and make efforts that would cause even our ancestors from the Meiji era to recognize that their descendants are fighting hard.