

Technology Venturing & Entrepreneurship

Sony Betamax

Case Report



GROUP 2

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1. Introduction

It is a beautiful October afternoon in 1976, the sun is trying to warm-up the cold air around the Sony headquarters in Japan. Akio Morita, one of the founders and chairman of Sony, is sitting in his office planning the future of electronic entertainment systems. The phone rings and he answers it in an unemotional way. The man calling is his friend and head of the Betamax project, the new video tape format they had developed and introduced in 1975. The advisor tells him that to their surprise, JVC has introduced their competing video tape format VHS to the market this noon and that VHS supported already a twice as long playing and recording time as Sony's Betamax. Nobody, including Akio Morita had expected that JVC, which is a company controlled by Matsushita, is already this far in development of VHS. Akio Morita hangs up the phone and begins to reflect on the impact the VHS format of JVC could have on their plans for Betamax.

2. What happened before

When Sony developed the Beta format, their goal was to make it an industry standard. In fact Beta was only a miniaturization of Sony's U-matic format, which was in these days the world-wide standard of video tapes. Still Sony knew that they could not make Beta a standard by moving alone, especially because they had not the manufacturing capacity to cover world demand. Therefore they tried to convince Matsushita and JVC, its main producing partners for U-matic in Japan, to adopt the Beta format. They approached as well RCA (Radio Corporation of America) for adapting Beta to cover the U.S.. Before talking to RCA, Matsushita and JVC, the Betamax management team had already set everything in place to start off producing the first Video Cassette Recorders (VCR) and tapes in the Betamax format. The fact that Sony had manufacturing ready to launch, set RCA, Matsushita and JVC under pressure because this way Sony signaled that they would continue to foster the Beta format and even start production, with or without the support of its partners.

The first meeting in September 1974 between Sony and RCA, the presentation of Betamax and the inflicted pressure of Sony did have its effect. RCA cancelled its own ongoing development program of a VCR format because they had to acknowledge that Sony was way ahead in technology. However, RCA decided not to adapt yet Betamax because their own market studies in the U.S had shown that a minimum playing time of 2 hours was necessary for commercial success, whereas the Betamax prototype only offered 1 hour playing time. The management of RCA

decided to wait until the technology was mature enough for the U.S. market. However, Sony did not plan to change the Beta format to support 2-hour playing time because the only way to do this was to trade-off video quality.

In December 1974 Sony demonstrated Betamax to Matsushita and JVC and were rather surprised that Matsushita was unhappy too with the 1-hour playing time and thus decided not to adapt Betamax. At this point Sony managers came to the conclusion that they will have to adapt the Beta format to support 2-hour playing time to be able to convince its main strategic partners RCA, Matsushita and JVC. What Sony did not know yet, was that JVC, which was mainly controlled by Matsushita, was developing a VCR format too. And since both RCA and Matsushita demanded for a 2-hour playing time, which was from the beginning on a goal for JVC's format called VHS (Video Home System), they were pretty confident to proceed their work on VHS.

3. About Sony

3.1. Company history

By 1974 Sony was a world wide operating company, known for its products in transistor radios, tape recorders and TVs. Sony was known for its drive in developing new markets in consumer electronics.

Rising from the Ashes

In September 1945, Masaru Ibuka returned to Tokyo with the idea to rebuild post-war Japan with engineering know-how. The company, then under the name of Tokyo Tsushin Kenyujo (Totsuken) rose like a phoenix from the ashes and attracted a lot of talented engineers mainly because they were unemployed because of the war. The only problem back then was that they didn't know what to produce yet. In an early stage of the company, they started to repair damaged radios. The business prospered well and Totsuken's reputation in public increased substantially. During this time Akio Morita, an old friend of Masaru Ibuka, read about his friend's firm and joined Totsuken. As armament factories had closed down after the second world war, there was a surplus of electricity and together with the desire to produce everyday life products, the bias for the further development of Totsuken was determined: electronic everyday life products. One



Figure 1: Totsuken's rice cooker

of the first items introduced to the market was an electric rice cooker. As the rice cooker produced mostly undercooked or overcooked rice, the success stayed away and the cooker was the first memorable failure of Totsuken.

On May 7, 1946 more than 20 management and staff members attended the inauguration ceremony which officially established Tokyo Tsushin Kogyo (Totsuko). The idea of Ibuka and his engineers was to create new markets. To do so, they had an initial capital of 190,000 Yen (528 USD or 4461 USD in 2006) but no machinery and only a little scientific equipment. Their main resource was the engineering know-how. Raw materials for their products were found in the war ruins of



Figure 2: Totsuko's cushion

Tokyo. In the first year of Totsuko they tried to make money by selling an electrical heated cushion which they self considered so dangerous, that they didn't dare to put their company's name on it. By the end of 1946 Totsuko moved to Shinagwa in a building that had been used by Nippon Carburetor Co. Ltd. as a warehouse. This is the same location where Sony Corporation still resides today.

Sony – A new Brand

In this new home Totsuko started to develop its first tape recorder which eventually led to a first prototype in September 1949. In March 1950, they introduced Japan's first magnetic-coated, paper-based recording tape, "Soni-Tape" which was followed in July of the same year by Japan's first magnetic tape recorder called G-Type. By 1953 Totsuko was the first Japanese enterprise to license the transistor patent from Bell Laboratories and produced the first PNP transistor in Japan. By February 1955, Totsuko decided to create a new brand that allowed to enter American markets. This is when the name Sony first appeared. Only seven months later Totsuko introduced its first transistor radio, TR-55. This was the beginning of a long chain of pocket sized Sony transistor radios. Three years after the introduction of the TR-55, Totsuko decided to change its name to Sony.

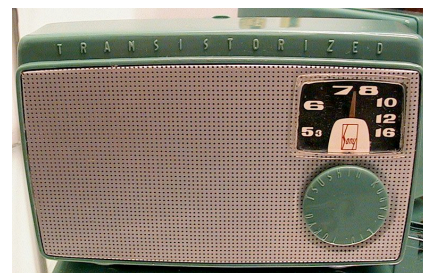


Figure 3: TR-55

From Audio To Video

After the success of transistor radios during the fifties, the arise of the television during the sixties hardened the leading position of Sony in consumer electronics.

In May 1960 Sony introduced the world's first direct-view portable TV, the TV8-301¹, which was followed by the world's smallest and lightest all-transistor TV, TV5-303, in May 1962. Sony entered the video-tape recorder (VTR) market in 1963 with the world's first compact transistor VTR, the PV-100, followed by the world's first home-use open reel VTR (CV-2000) in August 1965. At the end of the sixties Sony introduced the Trinitron color TV line (KV-1310). In march 1972 the U-



Figure 4: The Betamax recorder



Figure 5: TV8-301

Matic video cassette recorder (VO-1700) was introduced. It was among the first video formats to contain the videotape inside a cassette, as opposed to the various open-reel formats of the time. The preliminary peak of Sony's tape recorders is the ½ inch Betamax recorder, SL-6300, and the corresponding tapes which were introduced in May 1975.

3.2. General marketing strategy

From the beginning Sony was an innovative company with the desire not only to introduce new products but to create entire new markets. Most of the marketing therefore focussed on introducing this markets, generate the desire for their products and make it uncomely to switch to competitors products. Sony had the attitude that it decided what the people needed and what are the standards. In addition, Sony continuously introduced new versions of their products (transistor radio, television) and steadily expanded its knowledge and core competencies. Together with a strong branding, which was introduced with the decision to use Sony as the company's name and the good reputation that has its roots in the high regard earned in Japan by providing work and services in the hard years after the war. Sony was able to convince customers that Sony products, even if newly introduced, stand for best quality with desired functionality. Sony more and more focussed on the aspect, that just writing Sony on a product will lead to a market success.

A famous citation of Akio Morita reflects perfectly Sony's attitude those days: "We don't believe in market research for a new product unknown to the public... so we never do any. We are the experts."

4. About JVC

4.1. Company history

JVC is an international corporation manufacturing electronic devices. It was established in Yokohama, Japan in 1927. JVC stands for Victor Company of Japan, limited and was a subsidiaries of the Victor Talking Machine Company from the USA. However, in 1929 the majority of the JVC ownership was sold to RCA. But since 1953, Matsushita is the principal owner of JVC.

One of the principal characters of JVC is Kenjiro Takayanagi, known as the "father of TV". In 1926 he was the first in the world who successfully projected an image onto the screen of a cathode ray tube. He joined JVC after the World War II and was involved in the development and the commercialization of color TVs.

JVC has always been an innovative brand and they developed many products which were entirely new in Japan. For example in 1939 they manufactured Japan's first TV and later on in 1954 the first EP record and stereo record player which has been improved as a 45/45 stereo record system in 1956. Some time later in 1960, they introduced the 21CT-11B: JVC's first color TV set and in 1963 the KV-200, the world's smallest 2-head professional VCR on the market. In 1971 JVC presented a new technology called CD-4, a 4-channel stereo recorder. And finally, JVC came up with its Vertical Helical System, also known as Video Home System or VHS.

5. Betamax versus VHS

5.1. The format war begins

After the 1974 meetings with RCA, Matsushita and JVC, Sony started to develop the second Betamax format which would support 2-hour playing time. Because Sony had all the manufacturing for the first Beta version already in place and running, they decided to keep on going with it but to decline any further licensing requests of other partners until the revised Beta format was ready. They started the production of the first 1-hour Betamax VCR named SL-6300 in April 1975, however, they did not deliver OEM machines to other interested companies for the

simple reason that this did not match their strategy. To quote Akio Morita: “Sony is not an OEM manufacturer.”.

In the meanwhile JVC developed its VHS standard further and already began to sign licensing and OEM contracts with companies that were previously refused by Sony. Somewhere in this period Sony did find out too that JVC was working on its own standard but they did not know how far their development was.

In March 1976, when the second Betamax format version to support 2-hour playing time was ready, Sony again approached Matsushita and JVC to support the Betamax standard. Sony had shortly before received the favor of Japan’s Ministry of International Trade and Industry (MITI), who decided for Betamax and against VHS because Sony had already a product in place. Still Matsushita, JVC and its partners decided to stick to their own VHS format. However, some big companies like Toshiba and Sanyo did choose Sony’s Betamax.

Now, in October 1976, JVC launches commercial sale of VHS in Japan with a 2-hour tape. At this point Sony has already produced and sold approximately 200'000 pieces of its 1-hour Betamax SL-6300 VCRs, and thus holds a VCR market share of 100%. The launch of VHS is the public begin of the format war.

5.2. Technology comparison

Comparing the technologies at this time of 1976 shows that Betamax has the advantage of better video quality whereas VHS has twice the playing time. Although Betamax and VHS were both technological descendants of U-matic, they differed in just as much to be incompatible. Both technologies consisted of plastic cas-



Figure 6: Betamax (above) and VHS

settes containing two spools holding a magnetic tape. The magnetic tape had for both standards a width of 1/2 inch (12.7mm). To read from or write to the tape it was therefore passed over a playback or recording head in the VCR. The VHS cassettes were larger than the ones from Betamax, but because of that VHS could hold more magnetic tape and were therefore able to provide longer playing time. However, this was not the main reason why VHS could offer 2-hours cassettes.

6. Back to Akio Morita

Thus, only a few months before Christmas in 1976, JVC is one step ahead of Sony in terms of playing time, however Sony had 100% market share, still a better quality standard and the new revised Betamax format in its pipeline almost ready for production.

So Akio Morita asks himself what he has to do to counter the market entry of VHS. He leans back in his seat and in his mind fast forwards to the up-coming launch of the 2-hours Betamax version which is planned for March next year, and how this event would again changes the situation in the ongoing format war. Somehow he has a bad feeling in his stomach, but maybe this is just because of the Sushi that he had for lunch.

7. Exhibits

7.1. Technical terms

PNP transistor

Transistors are semiconducting devices normally used either to amplify current or as electronically controlled switch. They are among the fundamental parts to build any kind of electronic device, i.e. calculator, computer, remote control, etc. The PNP transistor is one of the two standard transistor types. The other type would be a NPN transistor.

Cathode ray tube

The cathode ray tube (CRT) is the technology used for the CRT monitors, i.e. the old heavy TV monitors used during decades. The CRT contains the evacuated glass tube, a fluorescent screen at one end of the tube and an electron gun at the other end.

EP record

EP stands for extended play and complements the single record and album record as a classification of the amount of music recorded on a CD. A single record has up to 10 minutes, the EP record around 10-25 minutes and the album record can hold 25-80 minutes.

7.2. Matsushita

Matsushita was founded in 1918 by Konosuke Matsushita and registered as company in 1935. It represents one of Japan's biggest electronic devices manufacturer. In Europe, the company is rather known by its brand names. e.g. Panasonic, Technics.

8. References

8.1. Text content

All web sources listed below were last visited January 14, 2008.

Sony's history & Betamax

1. <http://www.sony.net/SonyInfo/CorporateInfo/History/index.html>
2. <http://www.sony.net/Fun/SH/>
3. <http://en.wikipedia.org/wiki/sony>
4. <http://en.wikipedia.org/wiki/betamax>
5. <http://www.mrbetamax.com/>

JVC's history & VHS

6. <http://www.jvc.com/company/index.jsp>
7. <http://en.wikipedia.org/wiki/JVC>
8. <http://en.wikipedia.org/wiki/VHS>

About the format war

9. <http://www.mediacollege.com/video/format/compare/betamax-vhs.html>
10. <http://www.sony.net/Fun/SH/1-14/h1.html>
11. <http://www.guardian.co.uk/technology/2003/jan/25/comment.comment>
12. http://en.wikipedia.org/wiki/Videotape_format_war.
13. Michael A. Cusumano, Yiorgos Mylonadis and Richard S. Rosenbloom, *Strategic Maneuvring and Mass-Market Dynamics: The Triumph of VHS over Beta*, in "The Business History Review", Vol. 66, No. 1, Spring 1992, on pp. 51-94.

8.2. Images

Figures 1 - 5: <http://www.sony.net/SonyInfo/CorporateInfo/History/index.html>

Figure 6: <http://en.wikipedia.org/wiki/Betamax>