

Technology Venturing & Entrepreneurship

# Sony Betamax

Case Analysis



GROUP 2

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# 1. Summary of case report

In 1974 Sony has finished the development of a new video tape recording format named Betamax, which is a small version of Sony's U-Matic video tape format. The U-Matic technology was in these days the world-wide standard for video cassettes but unlike U-Matic, the Betamax format allowed to build cheap and small enough cassettes and recording devices to create a new market, the home video recording market. Sony was practically ready to start manufacturing. But to make Betamax a world wide standard as well, they tried to convince their largest U-Matic manufacturing partners, Matsushita and JVC in Japan and RCA in the USA, to adapt the Betamax technology as well. But against the expectation of Sony, they declined because they were not happy with the fact that the Betamax cassettes could only record one hour of video. Sony started the manufacturing of Betamax devices anyways, but did not OEM nor give licenses because they started, with some dislike, to evolve the Betamax format to support two hours playing time. In the meantime JVC had developed their own format called VHS which has been supporting two hour playing time from the beginning. JVC was preparing itself well, formed lots of alliances and manages to launch VHS before Sony's second version of Betamax hit the market. How should Sony react on JVC's VHS format?

## 2. Related topics and class sessions

### 2.1. Format war (primary subject)

The format war is clearly the main topic related to the Betamax case and is therefore our primary subject. The related class session was about the DoCoMo [9] case .

### 2.2. Customer needs

In order to win the format war, the formats should meet the customer needs. But Sony had a special attitude towards customer needs respectively market research to know the customer needs. They did not do any market research for Betamax.

In class, we discussed the case of Ford Taurus [10], a car aimed to satisfy absolutely all customer needs.

### 2.3. Attacker's advantage

At the time when JVC launched VHS, Betamax was already on the market and had 100% market share. But VHS followed very short after Betamax and already provided the 2-hour playing time customer demanded and cultivated, in contrast to Sony, alliances and OEM.

The advantages of an attacker were introduced with the VLSI/SUN [11] case.

## 3. List of discussion questions

**Question 1:** How did Sony prepare to make Betamax a industry standard?

**Question 2:** Did Sony have advantages from being first-to-market and if so, did Sony use them?

**Question 3:** What had JVC to offer to its possible alliance partners Sony did not have?

## 4. Brief answers

**Question 1:** How did Sony prepare to make Betamax a industry standard?

The strong believe in its own values and capacities made Sony loose sight of the importance of alliances and marketing to enforce a new standard and therefore only trusted in customer's choice for their high quality and renowned products to become a de facto standard.

**Question 2:** Did Sony have advantages from being first-to-market and if so, did Sony use them?

Sony had many advantages from being first-to-market including a technological lead but failed in several or almost all points to make profit out of it.

**Question 3:** What had JVC to offer to its possible alliance partners Sony did not have?

The main asset is that JVC allowed OEM and licensing. Moreover they also provided assistance in manufacturing and marketing.

## 5. Detailed answers

**Question 1:** How did Sony prepare to make Betamax an industry standard?

At the time prior to the introduction of Sony's home video cassette recording (VCR) system Betamax, Akio Morita and Masaru Ibuka successfully created the U-Matic format. It was one of the first video formats using a cassette containing the videotape. U-Matic was considered as an improvement compared to the various open-reel formats of the time. Due to this development in the videotape systems, Sony reached in March 1970 a cross-licensing agreement for video recording patents together with Matsushita, JVC and five other non-Japanese companies. Even though the partners were equal, Sony took the most benefit out of this agreement in terms of profit and revenue. Soon after the establishment of the U-Matic format in professional settings and TV networks, the engineers of Sony started the development of a more compact system for a home version of a VCR.

Sony, as well as other manufacturers, believed in the high potential of a home VCR device. The sale of such a compact system was not anymore limited to professional customers as the preceding U-Matic. Akio Morita, with his deep understanding for innovation and his sense of marketing, instantly perceived the potential. The introduction of such a product would open an entire new market of home users. Sony was aware of the revolutionary character of the product on its hand. But still, the future customer all over the world had first to be convinced about the benefit from the Betamax home video system in their home. All the same Sony strongly believed in its capacity of innovation, research and development. Further more they considered the public to be aware of the high quality and innovativeness of Sony products as well as of their high reputation in the electronics market. Therefore the public would respond positively to the new technology which Sony considered to offer new freedom to the user.

Sony believed in their technology, "Betamax will revolutionize television... It will change the concept of prime time so that any time can be prime time." Keeping this believe in mind, Sony met Matsushita and JVC to propose to jointly adopt the Sony VCR standard under development. At the same time Sony also showed their new home VCR to RCA in order to access U.S. market. RCA then stopped their develop-

ment of an own system but didn't adapt the Betamax because recording time was considered too short. In fact, development at Sony was already close to completion and first steps to manufacturing were made. Discovering this Matsushita decided to go with JVC for an own standard.

As far as strategic marketing planning for such a radically new product, as such Betamax was perceived by Sony, was concerned, Akio Morita clearly stated the exclusive trust in the marketing effect of Sony's technical advantage, "We don't believe in market research for a new product unknown to the public...so we never do any. We are the experts." Sony therefore entirely overlooked the impact of social issues. E.g. they were completely unaware of people's demand for full-length feature films. Finally Sony lost all of its advantage of a first mover in the home VCR market.

**Question 2:** Did Sony have advantages from being first-to-market and if so, did Sony use them?

Being the first to market and having all the experience from U-Matic set Sony in a excellent position to dominate the VCR market. Betamax was technologically mature and ready to be used by literally everybody with a TV set and not only by a tech savvy minority. At least this was what Sony believed and indeed the demand for Betamax systems grew quite fast after its introduction. While in the first year Sony produced over 20'000 units it was almost 8 times more, 175'000 units, in the second year. But now the almost solo attempt of Sony to produce Betamax and to conquer the VCR market showed its limits. Sony wasn't able to meet the demands of Betamax systems and the demand outgrew the production[1]. With this, Sony already lost an advantage of a first mover, Sony couldn't flood the market with its product and allowed fast followers take a big share of the market. In the second year after Betamax' introduction, it already lost about 50% of the VCR market to VHS. As the analysis of the key assets (Exhibit 8.1) according to Shapiro & Varian [6] [7] clearly shows the first-movers advantage of Sony's Betamax 1 in the early time of the format war, Sony had the possibility to create the standard. But the same analysis also shows a big deficit in manufacturing capabilities. That weakness was the main reason why Sony was not able to flood the market and fulfill the market's demand.

The fast introduction of VHS didn't only surprise Sony but assigned a new problem to them. Generating a new market needs a lot of time in which customers have to be convinced of their need of the product and why they shouldn't use another product. During the first year of Betamax, Sony could concentrate of introducing the home VCR as a revolution in television and link Betamax to this revolution. A 100% market share was guaranteed and with enough time on their side, a competitor would have had a very hard time to take over some market share. This because of the incompatibility between Betamax and its competitors and the cost of a VCR device of about \$800 in 1975. The switching cost would be high enough [1] to lock-in customers. Unfortunately for Sony, VHS was introduced much earlier than they expected and the market wasn't generated yet. This allowed JVC to capitalize on the technological revolution of home VCR without having to convince customers to switch from Betamax to VHS. Regarding the key assets (Exhibit 8.1) of Shapiro & Varian, both parties, Betamax and VHS had almost the same to control over an installed user base. But as JVC followed really fast, the ability to create a sufficient strong lock-in was not possible for Sony. (See Exhibit 8.2, additional key assets according to Heiskanen [8])

As if it weren't enough, Sony didn't only have to compete with VHS much earlier than they expected, they also had to compete against an opponent that had bigger supply capabilities. JVC, together with its alliance partners could grow faster than Sony.

It has to be noticed that in the beginning this war wasn't fought over the price. Indeed it wasn't until the late 70's that VHS devices were cheaper than Betamax systems. On the other hand, VHS wasn't technologically superior to Betamax. The difference on recording time that existed when VHS was introduced was compensated by Sony within some months. So when only the actual devices are compared, there wasn't a dominant design which could have become a de facto standard at the beginning.

It seems odd, that only the supply capabilities of JVC and its partners decided on the outcome of the format-war. And indeed, there are other facts that played a major role. One of them was the introduction of Betamax 2 the successor of Betamax in 1977. Betamax 2 could record in color and had a recording time of 2-hours. But it wasn't compatible

with Betamax[1]. Sony failed to introduce an evolution of Betamax and started a revolution against its own product. Sony lost all the advantages it gained from being first to market with Betamax.

Sony failed in the first place to close the market for its format competitors. VHS had the possibility to act as a technological pioneer and had not only the advantages of a fast follower, which included a better understanding of customer needs like a 2-hour recording time or how to solve engineering problems but also had some benefits a first mover usually gets. VHS didn't take over the market of Sony but created its own market which even grew faster than Betamax' market.

**Question 3:** What did JVC have to offer to its possible alliance partners that Sony did not?

At the time, VCR's mass market had a promising future. Indeed, everyone with a television set was a potential customer. JVC's parent Matsushita realized it and exploited its skills and experiences in mass production to gain a decisive edge on the VCR market. JVC has a more effective campaign to form an alliance or even a coalition for the manufacturing of VHS against the Beta family [1]. Now we will see how all this could have happened.

On the one hand, Akio Morita and Masaru Ibuka, respectively Sony's president and chairman believed that the design of Beta was good enough to become a standard. They also knew that Sony was approximately two years ahead of their rivals in VCR development. Thus they began the preparations for the Betamax manufacturing before approaching other firms to discuss the prospect of adopting their machine as a standard.

On the other hand, during this period there was a real standardization battle between rival companies. There were six different incompatible formats in competition and three of the majors, Hitachi, Sharp and Zenith didn't have any involvement in home video development.

As said previously, Sony presented the Betamax product to RCA (Radio Corporation of America), and proposed a joint development to JVC and Matsushita. But it didn't go really well and Sony started the mass production without taking into account the respective support of the other partners. Because of all this manufacturing preparations, Sony was less flexible as it would involve expensive changes in the equip-

ment. RCA renounced to develop their own VCR but they also noticed that the design of Beta had an important drawback: playing time was limited to only one hour. So RCA decided to wait for further progress in the technology before getting involved in Sony's market. Matsushita also pointed this con and therefore he refused the cooperation with Morita. Moreover, Sony's chairman was clear about its strategy as he declared in [2]: « Sony is not an OEM manufacturer »; he didn't want other firms to produce Betamax machines.

JVC then realized that a successful machine would have to offer at least two hours of playing time [1]. They adopted a strategy which would form a larger group as possible and also promote licensing and OEM agreements, including exports [1](Exhibit 8.5) & [3]. By the end of spring '75, JVC created an alliance with Hitachi, Mitsubishi, Sharp and Matsushita. JVC proposed an OEM relationship to Matsushita as well but he refused because JVC didn't have enough capacity for his huge distribution network and also because Matsushita would be able to produce VHS machines on his own. JVC provided machines to Hitachi and in January '77 they also began supplying to Sharp and Mitsubishi.

Later on in the end of '76, JVC's strategy headed toward the U.S market and started the negotiations with RCA but they refused because of the small production capacity. Then JVC tried with European firms which would need smaller quantities than RCA. They continued their expansion of the alliance and became really important (see on the Exhibit 8.4).

In February '77 RCA contacted Matsushita and JVC. They wanted to introduce VCR on the U.S. market and they requested a VCR which « could record a football game »[1]. As a football match last at least three hours, this implied to double the playing time from two to four hours. Matsushita agreed on it and in two months his engineers achieved a solution by halving the width of each recording tape and slowing down the recording speed.

So how did JVC succeed in gathering all those partners (Exhibit 8.5)? If we compare the price, the quality or the features of VHS and Betamax we don't notice any big differences over the time. Indeed, the price of both machines was equivalent and there weren't any big differences in the quality neither. Concerning the features it was almost the same as

well: a couple of months after VHS developed their two hours tape recording, Sony had their own one.

The breakthrough was in the strategy they adopted. JVC managers aimed to create a big alliance and encouraged the partners to participate to the project. Compared to Sony, JVC's approach to partners was really « polite and gentle » and promoted adopting as the common VCR standard « the best system we are all working on » more than VHS per se [1, 4]. Indeed the partners could add new features or improve the existing ones, therefore the development was shared among partners. Moreover Matsushita was a big asset for the alliance, he could provide some feedback and he was sort of the project leader when he encouraged the engineers to increase recording time after the meeting with RCA.

According to the seven key assets from Shapiro and Varian [6][7] (Exhibit 8.1.), the difference is clear for the manufacturing capabilities and first mover advantage. We notice that even though Sony was first in the market, the manufacturing capabilities of JVC surpassed Betamax's market. Now if we apply our scenario on Heiskanen's Additional Key assets (Exhibit 8.2), we can discern two interesting points. The first one is the ability to control network externalities: indeed VHS is in advanced compared to Betamax in the sense that they propose more features and services than Sony. Secondly, the JVC's strength of the alliance is obviously far beyond Sony's and this was one of the main key point in this format war!

Finally, JVC was more flexible and was more willing to hear the opinions and proposition of the partners. Thus the product was more adapted to everybody's need and the alliance was growing consistently. JVC managers also allowed OEM and licensing, where Sony didn't. Later on, Akio Morita and Masaru Ibuka, Sony's president and chairman respectively, acknowledged that they made a « mistake » and « should have worked harder to get more companies together in a 'family' to support the Betamax format »[5].

## 6. Recommendations

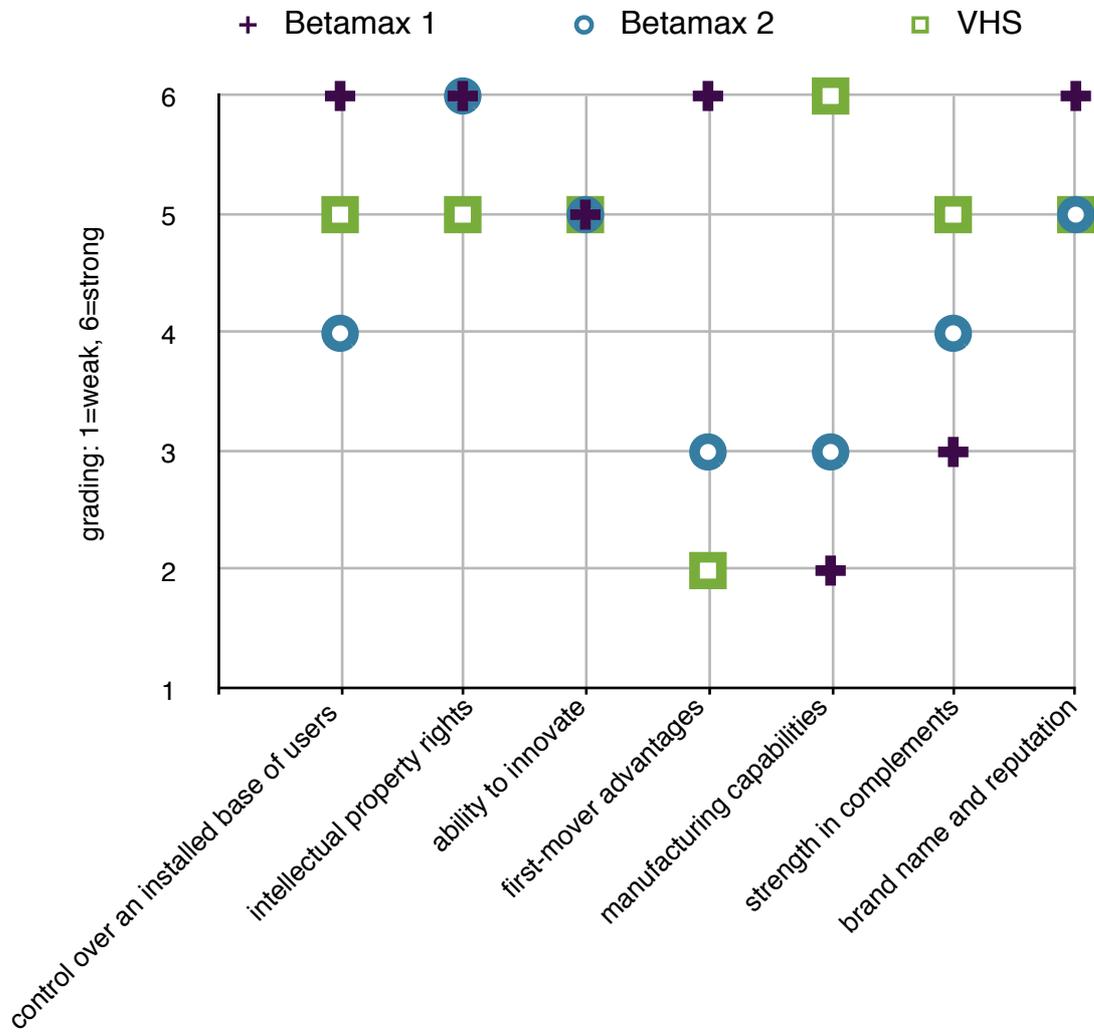
- Customer needs aren't always what one can expect. By blindly believe in their expertise, Sony missed the demands and lost the time margin advantage of being the first to market. Market research should be part of every product evaluation.
- Being leader in a related sector (U-Matic) made Sony believe, that they have enough bargaining power in negotiations with competitors. Sony should have started the hearings as equal peers to gain trust from its competitors.
- After the decision of doing the job alone, Sony would have had to ensure the capacities to supply the demand. Alliances and OEM may be a solution.
- By asking 100\$ more per device for licensing Betamax than JVC did for VHS[1], Sony prevented themselves from having partners that helped to flood the market. Sony should have focused more on gaining market share than on making profit.
- Introducing Betamax 2, which wasn't compatible with Betamax destroyed all advantages of having a market share with Betamax. The introduction of new products that compete with own products should be evolutionary and by no means revolutionary.

## 7. Lessons learned

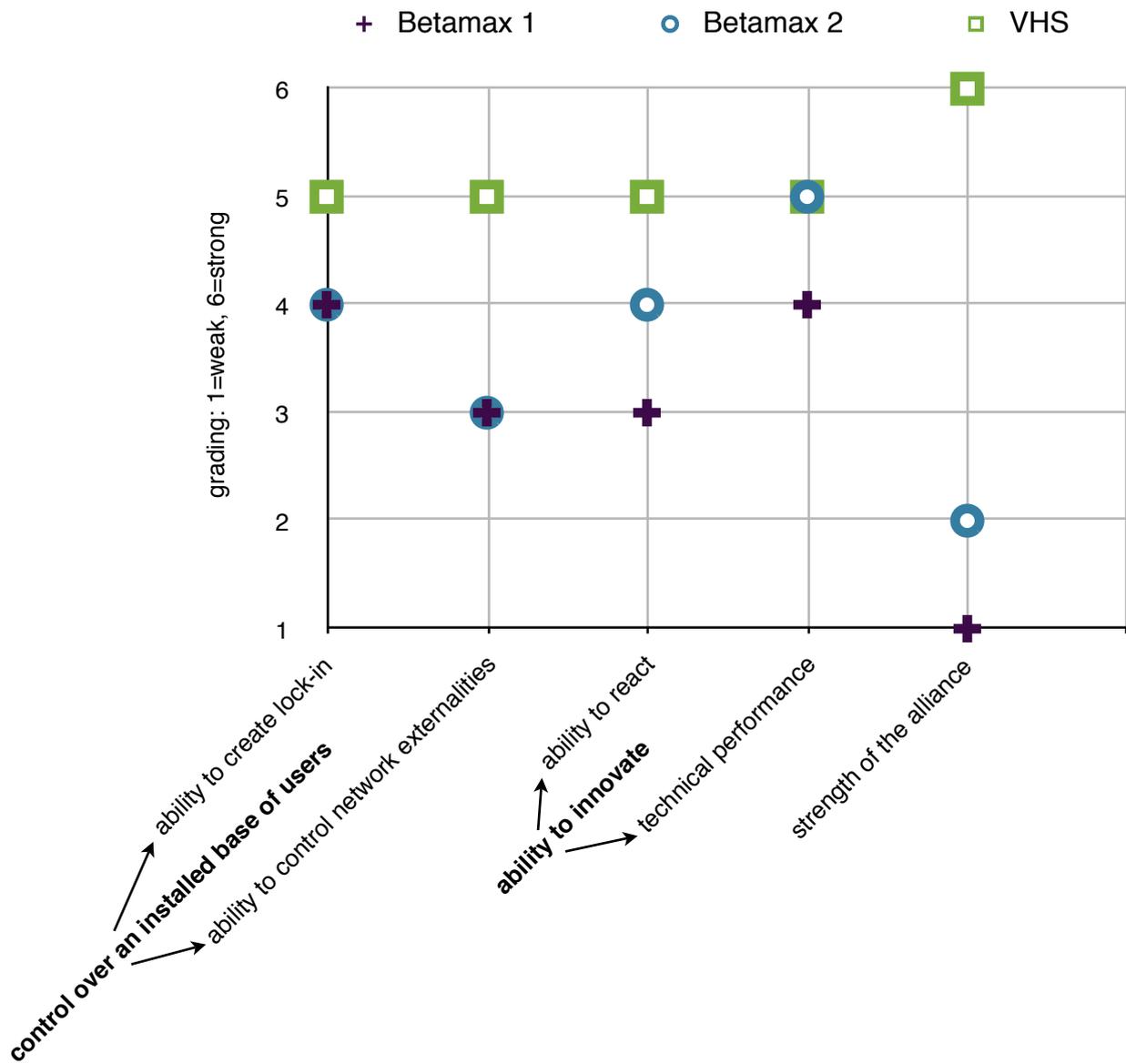
- When creating a new market, it is important to close the market for competitors especially if the product is revolutionary.
- Supply the demand for a product is essential, foremost when the market is being created. Alliances and OEM are alternatives that have to be considered from the beginning.
- Small technical distinction or difference in price demand a strong focus on complementary assets. Otherwise customers won't see the benefit of choosing one product over another.
- Experiences from similar products but different customer sectors have to be taken into account with attention as the customer-orientation plays a leading role when creating a market.

## 8. Exhibits

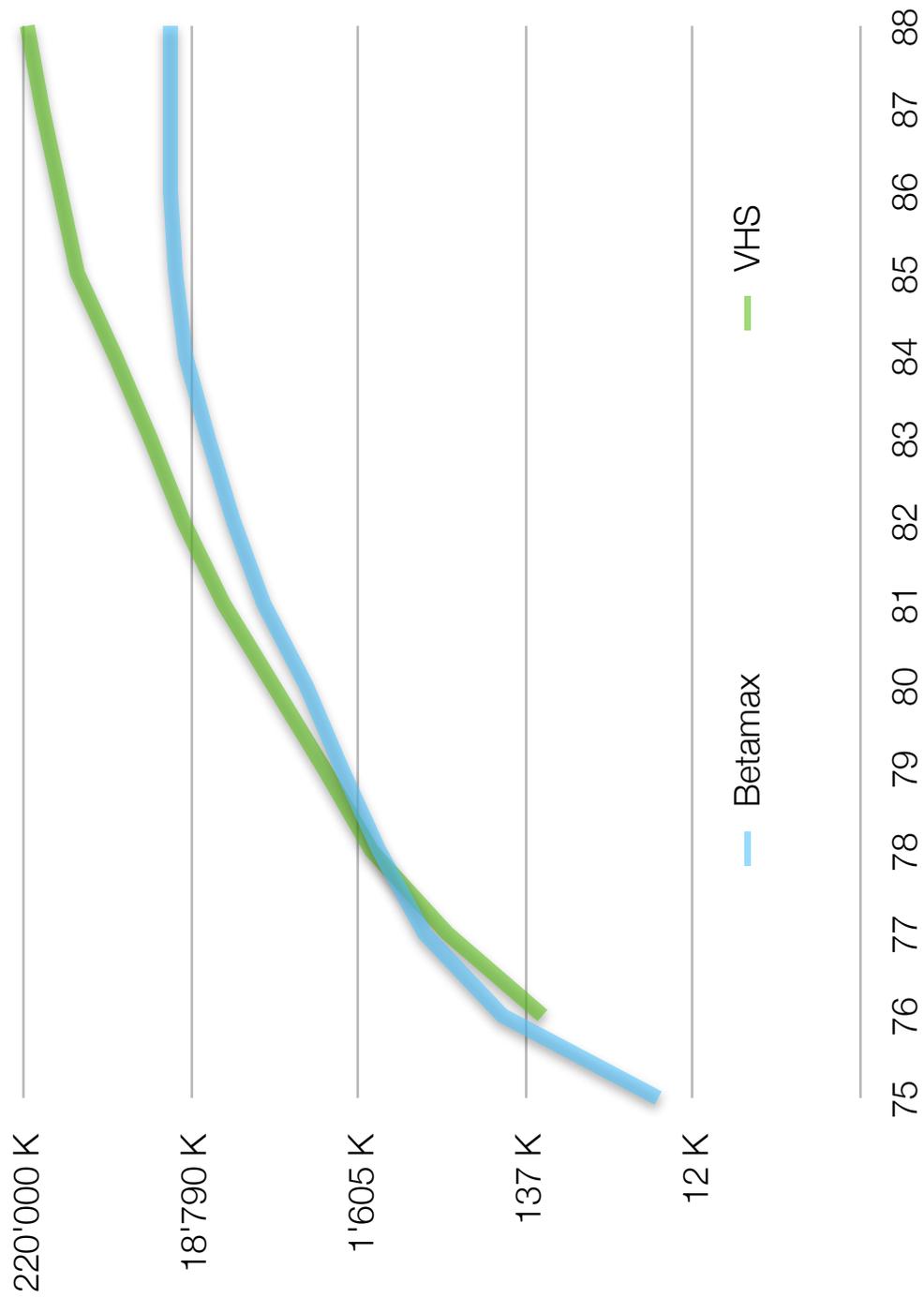
### 8.1. Seven Key assets by Shapiro & Varian [6] [7]



## 8.2. Additional Key assets by Heiskanen [8]



### 8.3. Cumulative Production per Year (Logarithmic) from [1]



## 8.4. VCR Industry Chronology (1974-1978) from [1]

### *Year/Month*

- 1974/9 Sony proposes to Matsushita and JVC that they jointly adopt the Sony VCR under development, although development was largely completed and Sony already had begun setting its manufacturing dies and making other production preparations.
- Sony also shows the Betamax prototype to RCA, in the hope of persuading the U.S. firm to adopt it. (RCA subsequently abandons an attempt to develop its own VCR but rejects the Betamax because of its short 1-hour recording and playing time.)
- Toshiba and Sanyo introduce their own VCR, the V-Code I, with 30-minute and 1-hour tapes.
- /12 Sony shows the Betamax prototype to Matsushita and JVC, but still receives no commitment from them.
- 1975/4 Sony introduces the Betamax SL-6300 in Japan, priced at 229,800 yen (ca. \$800); 1-hour recording time.
- JVC announces to Matsushita that it has a competing VCR under development, the VHS.
- /7 Hitachi approaches Sony as a potential licensee of the Betamax, but is rebuffed as Sony prefers to wait for Matsushita and modify the Betamax for 2 hours.
- /9 Matsushita introduces its own VCR model, the VX-100, with 1-hour tape. JVC also completes a VHS prototype and demonstrates this to Matsushita and later to other firms.
- /12 Hitachi adopts the VHS format.
- 1976/1 JVC asks Sharp and Mitsubishi Electric to adopt the VHS format; they agree by fall 1976.
- /2 Sony introduces the Betamax (SL-7200) in the U.S.
- /3 Hitachi, acting on behalf of JVC, asks Toshiba and Sanyo to join the VHS group.
- Sony again approaches Matsushita and asks that it adopt the Betamax and Matsushita shows the VHS prototype to Sony for the first time.
- /4 Toshiba and Sanyo introduce the V-Code II with a 2-hour tape.

- /5        **Matsushita introduces the VX-2000, with a 100-minute tape.**  
**JVC begins manufacturing preparations for the VHS.**
- /6        **Sony and JVC each ask the Ministry of International**  
/7        **Trade and Industry (MITI) to back their standards. MITI proposes that**
- /8        **JVC adopt the Betamax, or that the two firms negotiate on a standard, adopt one or the other or a combination, but these suggestions fail to be accepted.**
- /10       **JVC introduces the VHS for commercial sale in Japan with a 2-hour tape.**
- /12       **Hitachi begins marketing VHS machines supplied by JVC.**
- 1977/1   **Sharp begins marketing VHS machines supplied by JVC.**  
**Matsushita publicly adopts the VHS format.**
- /2        **Sanyo, Toshiba, and Zenith adopt the Betamax format.**
- /3        **Sony introduces a 2-hour color version of the Betamax (SL-8100), although it is not compatible with the 1-hour Betamax.**  
**Matsushita introduces a 4-hour version of the VHS for export to RCA, Magnavox, Sylvania, GE, and Curtis.**
- /4        **Pioneer and Aiwa adopt the Betamax format.**
- /8        **Sanyo reaches an agreement with Sears-Roebuck to supply it with Betamax machines.**
- /10       **The VHS group settles on a European standard, followed by export agreements to several European distributors.**
- /11       **NEC adopts the Betamax format.**
- 1978/1   **Hitachi begins in-house production of the VHS**
- /5        **Mitsubishi begins in-house production of the VHS for export**

Sources: Primarily Nihon Keizai Shimbunsha, ed., *Gekitotsu: Soni tai Matsushita: bideo ni kakeru soryokusen* [Crash! Sony versus Matsushita: the all-out war waged on video] (Tokyo, 1978) and Sony Corporation, "Table of Sony VTR History," unpublished memorandum, 16 Aug. 1977.

## 8.5. Group Alignments (1983-1984) from [1]

Note: Suppliers indicated by initials (J = JVC, Ma = Matsushita, H = Hitachi, Mi = Mitsubishi, T = Tokyo Sanyo, S = Sony, To = Toshiba, Sa = Sanyo, P = Philips, G = Grundig)

<i>Japan</i>	<i>U.S.</i>	<i>Europe</i>
	VHS GROUP (40)	
JVC	Magnavox (Ma)	Blaupunkt (Ma)
Matsushita	Sylvania (Ma)	Zaba (J)
Hitachi	Curtis Mathes (Ma)	Nordmende (J)
Mitsubishi	J.C. Penny (Ma)	Telefunken (J)
Sharp	GE (Ma)	SEL (J)
Tokyo Sanyo	RCA (H)	Thorn-EMI (J)
Brother (Mi)	Sears (H)	Thomson-Brandt (J)
Ricoh (H)	Zenith (J)*	Granada (H)
Tokyo Juki (H)		Hangard (H)
Canon (Ma)		Sarolla (H)
Asahi Optical (H)		Fisher (T)
Olympus (Ma)		Luxer (Mi)
Nikon (Ma)		
Akai Trio (J)		
Sansui (J)		
Clarion (J)		
Teac (J)		
Japan Columbia (H)		
Funai		
	BETA GROUP (12)	
Sony	Zenith (S)*	Kneckerman (Sa)
Sanyo	Sears (Sa)	Fisher (Sa)
Toshiba		Rank (To)
NEC		
General (To)		
Aiwa		
Pioneer (S)		
	V-2000 (7)	
		Philips
		Grundig
		Siemens (G)
		ITT (G)
		Loewe Opta (G)
		Korting (P)
		B&O (P)

\*In spring 1984, Zenith switched from the Beta group to VHS.  
Source: Nomura Management School, "VTR Sangyo noto"; and JVC, Public Relations Dept.

## 9. References

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

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[2] Quoted in *TV Digest*, 16 february 1976

[3] Nyak and Ketteringham, *Breakthroughs!*, 1986, Rawson Associates NY; No-mura Management School, "VTR Sangyo Noto"; and "Innovations Spur Boom in VCR Sales", in The New York Times, 11 December 1984.

[4] Kokichi Matsuno, message to employees in taking over as JVC President in 1975, and Shizuo Takano, JVC's Video Department manager, both quoted in Nayak and Ketteringham, *Breakthourghs!*

[5] Akio Morita, *Made in Japan*, (New york, 1986)

[6] Carl Shapiro, Hal R. Varian, *The Art of Standards Wars*, in "California Management Review", Vol. 41, No. 2, Winter 1999, on pp. 8-32.

[7] Carl Shapiro, Hal R. Varian, *Information Rules: A Strategic Guide to the Network Economy*, Harward Business School Press; 1st edition; November 1998.

[8] Ilkka Heiskanen, *Strategies in Standard Wars*, Helsinki University of Technology, Institute of Strategy and International Business.

[9] C. Belmont, A. Hietaniemi, G. Mezzour, P. Skoczylas, C. Trefois; *DoCoMo Case Study*; 22. 02. 2007

[10] M. E. Griffith, J. W. Judge; *Ford Motor Company: The Taurus*.

[11] VLSI case seen in the course *Technology Strategy and Entrepreneurship* by C. Tucci, fall 2007.