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# VIDEO RECORDERS - A "KILLER" TSUNAMI

## **The Downfall of RCA**

by  
Carol Fatuzzo and Ennio Fatuzzo

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*“If RCA had resisted the lure of the computer and avoided the curse of the conglomerate, if it had continued to concentrate, as did its Japanese competitors, on the consumer electronics market, the one that it knew best, then it might have remained the industry’s path definer. Instead, RCA failed and the Japanese quickly ascended as the dominant commercializers of consumer electronics.”*

*(Chandler, A.D. Jr., “Inventing the Electronic Century,” 2001, p.49)*

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Today, it is hard to imagine the downfall of companies like Microsoft, Intel or Amazon. Yet not too long ago, it was just as difficult to imagine the downfall of RCA (Radio Corporation of America), a powerful symbol of the technological revolution that began at the start of the 20<sup>th</sup> century. But now, the name RCA is only a trade-mark. However, once upon a time, RCA was a large and vibrant manufacturing company whose world-class laboratories invented many disruptive new technologies. And the company used these radical innovations to reach great heights of success. With its revolutionary radio and television products, RCA even created a new industry (consumer electronics), and the company perceived itself to be invincible. But business invincibility is not like a diamond – it does not last forever. Whatever happened to RCA?

The drama of “Video Recorders”, as told here, answers that question. It is the final episode in the story of RCA. It is a story about business leadership in the presence of giant

waves of change that irreversibly altered the business landscape. These disruptive waves brought both destruction and opportunity to the companies involved. We call such disruptive changes “Business Tsunamis”. Business Tsunamis can arise from broad forces such as recession, but in the drama described here they are intentionally created from competitive forces such as radical marketing concepts and breakthrough technologies.

The Video Recorder story starts in the early 1950s and continues through the final years of RCA. It overlaps in time with the wild years of RCA’s TV successes and computer failures. This part of the history of RCA highlights issues often arising in today’s challenging corporate environment. It illustrates how the dynamic and competitive nature of a truly global economy can result in the death of a company once considered great. So we tell this story to help today’s business leaders understand the complexities and difficulties of surviving and “riding” the Tsunami of change in today’s disruptive world.

## RCA'S FINAL CHAPTER

Our story starts in the year 1951. David Sarnoff (RCA President and CEO) is celebrating his 45<sup>th</sup> anniversary with RCA, the company that started its life as Marconi-America. In a highly publicized speech to his staff he asked his laboratories to give him three “presents” for his 50<sup>th</sup> anniversary in 1956. One of these “presents” was a “videograph” (video recorder). This was Sarnoff’s “vision” for creating the next major Business Tsunami based on RCA’s disruptive technology inventions. Through challenges like this, Sarnoff had led RCA to success in the past, and this was his approach to the future.

What happened to Sarnoff’s vision? The pursuit of the video recorder eventually led RCA into an all-encompassing battle with the Japanese – a battle that plunged RCA into huge losses and resulted in its ultimate demise. Here is how the story unfolded.

### ***Behind for the First Time***

Sarnoff’s envisioned video recorder was a device that recorded video on magnetic tape and then played it back in some fashion. He believed that with such a product RCA could replace the “old” technology of silver halide film, which was used at that time to record movies and TV shows. When Sarnoff presented this challenge in 1951, one of the powerful RCA laboratories immediately set out to develop the needed technology. However at that time, RCA was in the midst of developing its TV and the computer businesses, so available resources for the video recorder program were limited. Therefore progress on the video recorder was slow. In the past, when business was less competitive, under-resourcing programs hadn’t mattered much to RCA. So management wasn’t concerned.

But the business environment was changing. At the same time that RCA was slowly

pursuing the video recorder, there was another company with a similar goal and a similar approach – something that frequently happens in today’s dynamic world. This small, unknown company in California (Ampex) successfully developed and commercialized the world’s first practical magnetic tape based video recorder in 1954. Ampex had beaten RCA in the technology game – something that had never happened before. And this was the seed of the future “Video Recorder” Tsunami.

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RCA was behind, and Ampex had protected its technology well with patents. So in 1956, RCA temporarily admitted defeat in the video recorder arena and entered into a cross-license agreement with Ampex that allowed RCA to sell Ampex video recorders. Although they did this for several years, RCA management resented having to “stoop” to this level. They were adamant that RCA be the company to unleash a “Video Recorder” Tsunami and ride it to business success.

### ***The Race to be Different***

The Ampex video recorder was very large and therefore not easily transportable. Thus, it was suitable only for broadcast and professional use, such as in television studios. This left ample room for further inventions and the development of a system truly designed for **home** entertainment. This became RCA’s goal – creating a **consumer video player**.

RCA’s consumer video player efforts started in earnest in the mid 1960s with various groups within RCA pursuing numerous different technology approaches. Each technology approach appeared feasible and each had its own champion or group of champions in Management. Except for one, these separate

efforts held in common the belief that magnetic tape recording (the basis for the Ampex video recorders) was an “obsolete” technology. Making what turned out to be a fatal mistake, RCA’s researchers were desperately searching for their own disruptive video technology, and ignored the evolutionary developments in magnetic tape technology in the outside world.

*Disruptive  
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always win*

They failed to understand that, no matter how elegant, **disruptive technologies do not always win.**

In addition, RCA’s competing video player programs all were jockeying for position and resources, which resulted in a great deal of friction and infighting. Attempting to resolve this, management first chose one video technology for focus, then another, then another, and then back again. These frequent changes in direction and priorities led to confusion and slow progress on all fronts.

### ***Struggles and Turmoil Within***

In the late 1960s Robert Sarnoff (David Sarnoff’s son and hand-picked successor) succeeded his father as President and CEO of RCA. However, he did not have the “vision” and assertive leadership style of his father. This resulted in years of almost continuous organizational restructuring within the company, management indecision, and constant strategic re-direction. These factors, combined with the defocusing effects and costs of numerous unrelated acquisitions (Banquet frozen foods, Random House books, Hertz rental cars, etc.), caused RCA to become a company of erratic change and limited progress in many areas, including that of the consumer video player.

Additionally, unlike his father, Robert tended to delegate major decisions to committees of lower-level staff. A Corporate

staff organization – with the name of “Venture Group” – became responsible for key decisions relating to the consumer video player, including technology choices and product launches. This group had expertise in finance and marketing, but was inexperienced in commercializing technology-based innovations. As a result, again the project’s technical direction frequently was changed and resources increased or decreased as technical problems were encountered and/or management of the Venture Group changed. This led to even more limited progress in most areas and the “death” by attrition of some video technologies that might have been viable.

By 1970, there were only three serious technology contenders left in RCA’s video player arena. Two were truly disruptive technologies (“Holotape” holographic tape and “VideoDisc” capacitance-based video disc). One was an evolutionary technology (“MagTape” magnetic tape in a cassette). The Venture Group “finally” chose a single approach, and “Selectavision I” (based on “Holotape”) was announced to the world as RCA’s soon-to-be marketed consumer video player product. But **management had misjudged the technology readiness.** The product was not yet ready for commercialization. The ensuing delays, accompanied by re-organizations and management changes, soon resulted in a different choice.

In 1971, “Selectavision I” was cancelled, and “Selectavision II” (based on “Magtape”) was announced as the soon-to-be available video player product. The focus on this technology survived until 1974, when RCA made the decision not to market the Magtape system. This decision was partly due to technical and cost challenges. However all of the **program delays had opened the door for foreign competition**, making RCA’s Magtape product less attractive than it once might have been. This was the determining factor in RCA’s decision to cancel the project and was a preview of things to come.

Now there was only one technology left – the capacitance-based, pre-recorded “VideoDisc”. So, based on this technology, in early 1975, RCA announced “Selectavision III” as RCA’s consumer video player system. Unfortunately this announcement came just after Phillips-MCA had announced a video disc system. And, not much later, Teldec (Telefunken-Decca) actually introduced its video disc system in Europe. Now, RCA would not be first to market with a consumer video disc player, and it appeared that they might not even be second. RCA management finally became concerned about competition – European competition. Although aware of Japanese video player developments based on magnetic tape, these were considered either not threats at all or complementary to RCA’s VideoDisc. **A fatal error.**

The late 1970s saw even more management turmoil for RCA, and the development of the VideoDisc suffered. First, in late 1975 Robert Sarnoff was ousted by RCA’s board, and an insider (Anthony Conrad) replaced him as CEO and Chairman of the Board. Conrad was a supporter of the VideoDisc project, but he resigned in 1976 and was replaced by another insider, Edgar Griffiths. Griffiths was **not** a supporter of the VideoDisc, and put the program in a holding pattern. Finally in 1979, after technical advances by the RCA laboratory and increasing competitive entries into the video player arena, Griffiths changed his mind and re-established an accelerated VideoDisc effort.

But RCA’s years of management vacillation, changing technology approaches and priorities, and program delays had been costly. In the 1960s, RCA was the leader in the developing video player arena, but **Management had misjudged the growing strength of competition.** Now, in the latter part of the 70s, RCA was forced into an intense global race for the technology and market leadership that would ultimately create and unleash the Consumer Video Tsunami. This was a very

different position from the one RCA had enjoyed when it was alone and created and rode the Tsunamis of “Radio” and “TV” to success.

**No Longer Alone**

Now let’s look at the same years (the 60s and the 70s) from a different perspective – the broader global environment. As described above, the video recorder era began in 1954 when Ampex (a U.S. company) was the first to introduce a videotape recorder (VTR). The videotape for this machine used magnetic recording technology and was wound on open reels. This was the system that RCA licensed from Ampex, and it remained the only viable video player format for several years.

However, during the 1960s others joined Ampex and RCA in the open reel VTR arena. Companies including Philips, Sony, NEC, Hitachi, Akai Electric, and Bosch all were developing and/or introducing their own VTR systems. As they gained expertise and experience, all of these companies started pursuing the same goal as RCA: to create a true Video Tsunami by developing a **consumer** video system. And, as we have described, RCA generally discounted the efforts of those who were using “obsolete” magnetic tape recording technology.

But the 1970s saw the commercialization and explosion of a new kind of magnetic tape based VTR – the video **cassette** recorder (VCR), a **development largely un-anticipated by RCA management.** This VCR revolution was started by Sony in 1971 with its introduction of the “U-matic” system. This system used magnetic recording tape in a cassette instead of wound on an open reel. It was smaller, lighter, and less expensive than open reel VTRs. Businesses and educational institutions immediately appreciated U-matic’s advantages and quickly adopted it. But the U-matic system still was not easily transportable or cheap enough to be

*Management had misjudged the growing strength of competition*

widely accepted as a consumer product. So this was not yet the Consumer Video Tsunami.

However the VCR approach (magnetic tapes in a cassette) appeared so promising that the playing field soon became crowded. Most of the VTR players from the 60s actively pursued VCRs and were joined by a host of companies, such as Sanyo, Quasar, Panasonic, Thompson, Avco, and JVC. RCA finally recognized the potential and joined the VCR race with its Selectavision II "Magtape" effort. But the Japanese had a significant head start and a different approach to product commercialization. RCA was too late with too little and withdrew from the race to focus on its more disruptive VideoDisc technology.

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### ***Japan Leading the Race***

Concurrently with developing U-matic, Sony was developing a **consumer** magnetic recording system – "Betamax". Sony offered U.S. marketing rights for this system to RCA, but RCA rejected the offer, convinced that their own video technologies were superior. Therefore, Sony went ahead on its own.

In 1975, the Sony Betamax system was launched. However RCA management wasn't worried. They were convinced that RCA's VideoDisc technology was superior. RCA management also believed that the Betamax system would fail in the market due to its high price. In this belief, they were correct. However, they did not appreciate the Japanese long-term strategy for continuous improvements in quality and steady decreases in manufacturing costs leading ultimately to lower market prices.

***Therefore the real battle had just begun.***

At the same time that Sony was developing U-matic and Betamax, JVC (owned by Matsushita) also was working on a VCR system. JVC's system, like Sony's Betamax, used a magnetic tape and was being designed

specifically for the consumer home market. JVC set specific technical and performance requirements for the product at the beginning of the program, two of which they considered absolutely key to winning the video player "war": 1) the tape should play two hours of program (necessary to record a whole movie) and 2) the tape should be recordable from television as well as from a video camera that JVC would develop and market together with the player. Unlike what happened numerous times in RCA, ***these requirements did not change from the inception of the program until its commercialization*** – despite sometimes limited resources. This new JVC system was called "VHS."

Market introduction of VHS was scheduled for 1976, and it happened essentially on time. Although this was after the 1975 introduction of Betamax by Sony, JVC believed its system had enough advantages to ultimately beat Sony. JVC could have introduced their system earlier without a video camera, but decided to stick to its original goals. In the end, this decision proved to be an important one. In addition, JVC gave licenses to a number of other Japanese hardware manufacturers (Hitachi, its own parent Matsushita, Mitsubishi, and Sharp) for producing VHS hardware. This committed these large companies to supporting the JVC format and provided additional manufacturing capacity.

RCA now had two formidable video competitors, both selling consumer systems based on magnetic recording technology. Although RCA had been aware of both Sony's and JVC's programs early on, these Japanese companies had not been viewed as serious competitors by RCA. In spite of early warning signs, RCA had focused most of its attention on European and American companies pursuing video disc technologies.

However, by 1977 it was clear (even to RCA) that Sony and JVC had successfully created the Consumer Video Tsunami. On the RCA front, things were not going well. Despite promises and product demonstrations for management, the RCA VideoDisc was not yet on the market. At

least some of RCA management believed they must accelerate the VideoDisc program to provide an effective counter-attack to the Japanese. They were convinced this was the only way that RCA could successfully “ride” the Consumer Video Tsunami. However, not all of RCA management agreed, and the new CEO (Griffiths) placed the VideoDisc program on hold pending solutions by the laboratory to what he saw as serious technical shortcomings – more delays and another “nail in the coffin”.

At this point RCA’s Consumer Electronics Division, frustrated by the lack of an RCA-manufactured video player product, **licensed and introduced JVC’s VHS system as an RCA product.** This quickly became an important part of the RCA video business. An interesting question (which we can only speculate about but cannot answer) is whether this action by RCA (supporting the Japanese VHS format) was in part responsible for the later defeat of the RCA VideoDisc system. In any case, one thing is clear. RCA’s technology innovations, even though potentially disruptive, weren’t enough to create the Consumer Video Tsunami. **Factors like technology readiness, timing, resources, and management commitment cannot be ignored.**

**VHS going down the Home Stretch**

Now that the Consumer Video Tsunami had been created, the challenge was to ride this giant wave to business success. For JVC, ultimate success for VHS (and thus failure for Sony’s Betamax) depended on factors **unrelated to the technology.** Almost immediately the VHS format gained great acceptance, penetrating more than 20 percent of the market for consumer video players by early 1977. But then an unexpected event occurred. Sales dropped to almost nothing.

At this point, many companies would have panicked and pulled out of the market, but this

was not JVC’s response. Instead, JVC aggressively pursued their “systems” approach through **consumer education.** They set out to teach the consumers about video cameras, thereby convincing them to purchase the entire system – player and camera. This was a clearly different approach to marketing, and was in a sense a “marketing Tsunami.” And this approach worked, validating JVC’s initial belief that a video camera would be a key to success, and showing that **technologies, no matter how disruptive, are not enough by themselves to ensure success.** In parallel with its consumer education effort, JVC looked for companies in Europe that would license and manufacture VHS recorders. Thomson in France, Thorn in England, and Telefunken in Germany signed on, joining the growing list of companies in Japan. This strategy of gathering a large number of companies “pushing together” for the success of the VHS format was an essential piece of winning the “format war” with Sony. This was another part of riding the Consumer Video Tsunami to success that didn’t depend on technology (whether disruptive or not).

And JVC did win this battle. By 1980, sales for the VHS format had surpassed those of Sony’s Betamax, a huge success for the relatively small team that kept their focus on the same goals for the duration of the program. And there still was no VideoDisc product, although now the RCA program was again active.

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**Too Little, Too Late**

To understand the rest of the story, it helps to look at the events year-by-year:

**1979:** RCA now was in a leadership position in the color TV market, and the company’s financial situation was once again solid. The VideoDisc technical advances gave management confidence that the re-designed system could

*Factors like technology readiness, timing, and management commitment cannot be ignored.*

give RCA total leadership in the consumer video market – surpassing VCRs (including JVC’s VHS system) and defeating any of the other emerging video disc contenders. Therefore the VideoDisc program was re-initiated. RCA management, now recognizing that timing was crucial, established an aggressive (and costly) plan for market introduction.

**1980:** VHS sales were rapidly increasing. GE and IBM announced video disc ventures – GE using JVC’s format, IBM using that of Phillips. RCA’s VideoDisc still was not ready for sale. (Note: GE and IBM systems were never commercialized. These companies were never real contenders in the video disc fight.)

**1981:** Finally the RCA “Selectavision” VideoDisc system was introduced to the market. Unfortunately, **this also was a year of recession.** VideoDisc player sales were minimal in spite of an expensive (more than \$20 million) advertising campaign by RCA. In contrast, the recession did not affect VHS sales, which continued to grow rapidly.

**1982 – 1983:** In the next two years, in spite of a worsening company financial situation, RCA forged ahead with its costly VideoDisc effort. RCA was successful in lining up various VideoDisc “partners” including Zenith and Hitachi for player manufacturing, Walt Disney Productions for programming, CBS for disc production and distribution, and numerous retailers for consumer sales (e.g., Sears, J.C. Penney, Sanyo, Toshiba, Sharp, and Radio Shack). RCA also made numerous price decreases in both players and discs. But all of this did little to stimulate VideoDisc sales. Why? At the same time that RCA was decreasing prices, the prices of VCRs and recording tapes had decreased even more, and the **new business of renting pre-recorded video tapes had emerged.** VHS sales skyrocketed. The consumer had voted decisively for recordability and low cost access to a wide range of video programs. The VHS players were now entrenched. No video disc program survived.

**1984: Twenty years after its start of research on video recorders,** RCA was forced to

admit defeat. RCA’s then Chairman (Thornton Bradshaw) announced that the company would discontinue production of video disk players and take a \$175 million write-off (a huge amount for the times).

**1985:** JVC had achieved its most ambitious goals. VHS had become the world VCR standard, accounting for 80% of global sales of video players. JVC had helped create the Consumer Video Tsunami and had ridden it to success. RCA had missed the window of opportunity, and this “mistake” was deadly.

*RCA had missed the window of opportunity*

### **The End and the Beginning**

The total cost of running the VideoDisc program (more than \$500 million) was a staggering amount for RCA – a company already struggling financially. And the final VideoDisc write-off accelerated the already deteriorating financial situation. RCA did not survive for long. Between 1984 and 1986 parts of the company were divested, but the financial situation continued to worsen. In 1986 this led to the takeover of RCA by GE and the final breakup of the company. Thus the company that was once the leader in consumer electronics was now nothing more than a casualty of the innovative marketing techniques and technological developments of its competitors.

However, while the story ended there for RCA, it had just begun for the video disc. Today, we know it as a DVD (digital video disc). Although the optical technology and the digital format used are different from what was pursued in the RCA era, it is a true “video disc,” and it has largely replaced pre-recorded VHS magnetic tapes. But technology advances and format battles continue, with “high definition video” developing as the next frontier. Sony learned from its Betamax defeat and is riding



the “High Definition” video wave to success with its Blu-ray format. But how long will Sony’s success last? What will happen as TV cable companies offer more choices directly to subscribers through “video-on-demand” and as more options become available to consumers to download movies directly? Who knows? What one can say for sure is that in today’s disruptive business environment, change is the norm.

## LESSONS LEARNED

**A**t the beginning of the era of the video recorder/player, RCA had moved into unfamiliar territory. It had entered a business “game” with new rules played on a highly competitive, global battlefield. Management’s reaction was unfortunate and ultimately fatal. They reacted the way people often do when they walk into a dark room. Their first reaction was to freeze (no action, no decisions). Then they wandered around aimlessly (deciding and reversing decisions frequently). What could or should RCA have done differently, and how can today’s business leaders learn from its successes and failures?

There are no simple answers. Despite attempts to do so, one cannot use case studies of business events such as those just chronicled to develop a generally applicable “formula” for corporate success in a rapidly changing world. The dynamic complexity of managing and growing a company in today’s disruptive business environment makes it necessary for each company to develop its own specific plan for survival and change. However RCA’s experiences provide invaluable **lessons** applicable to the management of change and Business Tsunamis in general.

### ***The burden of the past***

It is easy for a company to become a slave of its past and continually pursue business as it always did. But strategies and business methodologies that once were successful may not be applicable

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when the business environment has changed significantly. From the successes of radio and TV, RCA’s leadership had developed three basic beliefs. Their strategy for the video player battle was based on these beliefs, but these “old” approaches to business no longer worked.

The first belief was that “vision” is the only necessary ingredient to create successful Tsunami-based businesses.” After all, the radio was an idea not requested by the consumer and not identified by market research. Instead, the need was created and “pushed” onto consumers by RCA. But this “friendly” Radio Tsunami, created by Sarnoff’s vision, did not destroy existing businesses. It created a new market where the consumer had no pre-conditioned expectations. So, there was time to make and correct mistakes. Pursuing David Sarnoff’s vision of a “videograph” (video player) in the same way led to a negative outcome for RCA. In the 20 years it took to realize this video player vision, the business environment had changed dramatically, but RCA had not.

The second belief was that disruptive technologies will always win – no matter what. This was true in the case of radio, and RCA leadership believed it was true in the case of TV. Therefore, they were convinced that their disruptive technology would win in spite of the Japanese successes with VCRs. But it was too late. By the time RCA had commercialized its VideoDisc product, the consumers had made their choice (VHS), and competition was entrenched. The timing and the market were not right for another new consumer video technology – no matter how disruptive.

The third belief (closely related to the second) was that when the technology is good enough, business success comes despite mistakes and corporate inefficiencies. Indeed,

during RCA's rise to prominence its new product commercialization skills were lacking, development cost overruns often were large, program delays were the norm, and sales forecasts were grossly off the mark. In spite of all this, in these early days, RCA's disruptive new products eventually were introduced and provided great successes for the company. Excellence in operational skills was not important when RCA was "a lone pioneer." It was with this mindset that RCA leadership approached the video player battle. However, now there was capable competition that had "changed the rules." Creating a Business Tsunami was no longer enough. Riding that

*However, now there was capable competition that had "changed the rules".*

Tsunami more skillfully than others had become

a requirement for success, and RCA did not recognize this until it was too late.

**Understanding Competition**

As mentioned above, when RCA was the pioneer and dominant market leader (as it was during the development of radio and TV), competitive understanding was not a requirement for its business success. However, by the time of the video player episode, things had changed. A number of other companies, not all U.S. based, had developed the technology capability to be serious contenders in the consumer video arena. During the early 1970s, although RCA leadership had started to appreciate the importance of knowing about competitive activities, their focus was on threats from the U.S. and Europe. They totally discounted Japan.

It was only in the mid-70s that RCA was forced to recognize the substantial threat from Japan, and that awareness came only because Sony and JVC had commercialized consumer video products, and they (RCA) had not. At that point (mid 1970s), RCA acknowledged the technical

capabilities of Japan but did not appreciate the additional threats posed by Japanese *business* methodologies and strategies. RCA had competitive awareness, but did not yet have competitive understanding.

Japanese "hi-tech" firms, on the other hand, had a more detailed understanding of American industry. They used this understanding to develop a new approach to business. They saw that they would be unable, at least in the short term, to "out-invent" the United States with respect to disruptive technologies. However, they believed that if they could build exceptional competence in the engineering and manufacturing arenas, they could be competitive with products based on existing technologies. Their assessment was that the advantages these competencies would provide them in time-to-market (elapsed time from the inception of work on a product to the actual product launch), in cost, and in quality would allow them to compete and win against the West.

JVC's success with VHS is a clear example of the effectiveness of this "Japanese" approach. JVC focused on improving an existing technology (magnetic tape recording) and making the engineering and manufacturing innovations necessary for its product to be competitive. Conversely, RCA management chose to develop a disruptive technology (VideoDisc), even though they knew it would take longer, cost more and most likely would have performance/quality issues in the beginning. RCA was not the first, and won't be the last, to underestimate the importance of market presence, quality, and cost.

However JVC didn't rely just on a well-engineered product. The company also used innovative new marketing concepts (bundling the video player with a video camera, renting rather than selling pre-recorded tapes, and consumer education) to increase the attractiveness of VHS to the consumer. RCA's focus on competing only with technology left it surprised and unprepared to deal with these marketing innovations. Ultimately, RCA's lack of

appreciation for the power of innovative new business practices and methodologies and disruptive marketing (NOT disruptive technology) had fatal consequences. RCA did not understand that ***not all Business Tsunamis are created by technology.***

**Resources**

A Business Tsunami growth strategy is costly. It's true that revolutionary ideas may be difficult to create, but usually they are not expensive.

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However an idea alone is far from sufficient to create a business success. Creating and unleashing a Business Tsunami based on a disruptive innovation requires a clear vision for the challenges ahead and a well-defined path to follow. But in a highly

competitive environment such as the one that developed in the video arena that is not enough. Success also requires good financial management, enough resources to make timely progress, and adequate cash reserves to cope with the unexpected. Underestimating resource needs and/or under-resourcing efforts is likely to lead to failure as RCA learned the hard way.

RCA entered the video player battle in earnest just after having "wasted" a quarter of a billion dollars on its failed adventure with computers. Cash reserves were inadequate for an aggressive video player effort, but RCA felt it had no choice. Management believed if the video player program was delayed until the company could completely recover financially, they would be too far behind their competitors to be successful. Perhaps they were correct in their assessment of the situation, but the way they "managed" the video player program made the situation worse. As we have described, the multiple changes in technology and product focus led to costly delays (both competitive and financial), but the resource drain didn't stop there. Extensive marketing campaigns made

necessary by the competitive battle with VHS further depleted RCA's resources. When RCA finally withdrew from the market, its financial situation was beyond repair. Could RCA have minimized the financial losses by focusing on one technology/product to shorten the time-to-market? Maybe. Would that have been enough to "save" RCA? Probably not, but it would have been worth trying.

But what if RCA had concentrated all of its resources on ***one*** technical approach from the beginning? Then RCA's video player could have arrived first to the market – despite all of the management mistakes made. The technical approach might not have been the most disruptive, but in the end, timeliness might have allowed RCA to win the race and regain dominance in the developing consumer video industry. We will never know.

**The Innovation**

In this video recorder story, there were many potential Tsunami-generating inventions originated by several competing companies. As we chronicled, some of those inventions were commercialized, but others were not. Some of those innovations created Business Tsunamis, some did not. Some of the players involved won in the business arena and others ended up in defeat. Now, by looking at these events through the lens of time, several important concepts relating to disruptive innovations can be summarized.

- ***Inventing a Disruptive Technology isn't enough to create a Business Tsunami.*** No matter how revolutionary a new invention is, if it cannot be developed into a manufacturable product in a timely fashion, it will not create a Tsunami.
- ***Not all Business Tsunamis are created by Technology.*** Tsunamis based on disruptive marketing and/or business practice innovations or a combination of smaller innovations can be just as deadly as their technical cousins.

- **Just creating a Business Tsunami doesn't always lead to business success.** Although a disruptive innovation may create a Business Tsunami, benefiting from that Tsunami requires effectively applying a number of operational business skills.
- **The choice of which innovation to pursue when attempting to create a Business Tsunami through technology is critical.** But should management choose the most disruptive technology in hopes of producing the best product? Or should they choose an existing technology to produce a product as quickly as possible? A difficult decision.

Why is the choice of which technology innovation to pursue so critical? If the product does not excite the customer the business will not be successful. On the other hand, if the product takes too long to develop and scale-up to manufacturing, there is likely to be strong competition in the market to contend with. In other words, the choice often boils down to: **What is most important – product sophistication or timeliness of market introduction?** The RCA saga illustrates the dilemma.

In the early stages of the black-and-white television effort, RCA leaders had to decide which of three possible products to develop and commercialize. Two of these were based on existing technologies and would have been relatively simple to develop. The third was a more complex product that required new electronic technologies. David Sarnoff chose the electronic product although he knew that it would be more difficult and costly to develop. In the case of black and white television, this turned out to be a good decision. This

sophisticated product had significant performance advantages over competitive products in development, thus providing a higher barrier to entry for emerging competition. This was a case when cost and timing of product introduction were not critical issues for success, but performance was.

However this approach did not work in the case of video players. As we have described, RCA management chose product sophistication (VideoDisc), in spite of the fact that the technology wasn't totally developed. However, by this time RCA was in a race with foreign competition, and the timing of market introduction was of paramount importance. If RCA had understood this, they might have made a different technology choice or they might have managed the program differently. But they misjudged the importance of

time-to-market. **Even a product based on the best "disruptive technology," when introduced too late into the market place, loses its commercial impact.**

## WHAT MIGHT HAVE BEEN

In its best years, RCA's level of disruptive innovation was unparalleled. From the company's beginnings in radio through its dominance in color television, innovation was the driving force and the key to success. This innovation provided unquestionable success in the beginning, when RCA was alone in the market and had time to correct its mistakes. However, this pursuit of disruptive innovation led to failure later on, when RCA had a large business to manage and competition "changed the rules" of business. Factors such as timing, understanding customer requirements, and

*Inventing a Disruptive Technology isn't enough*

*Not all Business Tsunamis are created by Technology*

*Just creating a Business Tsunami doesn't always lead to business success*

*The choice of which innovation to pursue is critical*

short term financial performance had become increasingly important. In this new environment, RCA's "old" practices and its unwavering belief in the superiority of its technologies were not enough.

Of course it is easy to identify RCA's "mistakes" in hindsight. But one also must understand that, given the complexity of the changing business environment and the intertwined forces affecting any company's business, there is never just one correct way to proceed. There are always alternative choices. So, what might have been?

What if (in the mid 70s) RCA leadership had "awakened" to the knowledge that Sony and JVC had unleashed the Consumer Video Tsunami, and that that killer wave was aimed directly at VideoDisc. How could they have reacted differently? Was that too late or could RCA have survived? Let us suppose that RCA had: 1) immediately stopped its VideoDisc project; 2) wholeheartedly joined forces with Sony (instead of JVC) to expedite the sales of Betamax in the U.S. in order to pre-empt VHS; 3) rapidly sold its unrelated businesses (the Robert Sarnoff acquisitions of the early 70s) to raise cash; and 4) directed the considerable research talents of the RCA Laboratories toward inventing new optical disc technologies for next generation audio and video applications. Maybe RCA would have survived, on its own or in partnership with Sony. Maybe RCA would have regained its consumer video industry leadership with CDs and DVDs. There is no way to know.

Let's play the "what if" game one more time and ask what David Sarnoff might have done if he had been in charge of the company during the video player battle. First, there would have been no question about who was making the important decisions – never a committee, always Mr. Sarnoff himself. And these decisions would have been clear and consistent. But with all of the different technical possibilities, what would he have chosen for RCA's video player? We are willing to bet that David Sarnoff would have picked (early on) holographic technology ("Holotape") since it

was the most "elegant." And he would have immediately stopped all other efforts and concentrated resources in this one technical direction. By doing this, RCA might have had a marketable video player product at about the same time as Sony and JVC introduced their video recorders.

Which product would have won: Betamax? VHS? Holotape? Or could all three products have co-existed? Most likely, the consumer initially would have had the choice between the system with the highest image quality (RCA's) and either the Sony or JVC system (both with lower image quality but with the capability of recording and playing back the videos). So what would the consumer have chosen? That race would have been too close to call. Thus, despite its "mistakes", RCA might have won – again.

So, in the end, one must keep in mind that despite precautions and foresight, in today's dynamic and chaotic environment no company is safe from disruptive change. So, a company's best chance for survival is a leadership team capable of:

### ***"Riding the Tsunami of Change"***

#### **References**

1. One of the authors (EF) worked for both RCA and its British parent, Marconi Co. As an "insider" (although he was not present when all of the episodes narrated in this article took place), he was exposed to some of the detailed history of the events described here and presents a different perspective than may be found elsewhere.
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