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Strategic Product and Business Analysis
Sample Case Studies

KNOW THY CONSUMER

Ripzone USA Sports:
Surf, Snow and Skate (Technical outerwear, clothing and footwear design, manufacturing, and distribution).
Case Study: Know Thy Customer

Consumer Observations:

The first step in consumer observations or ethnographic research, is figuring out who the "consumer/customer" is. Although this would seem straight forward, I have found that it is rarely that simple. Through time and experience, I have also found that customers often "don't know what they want", until you show them. I helped launch the Ripzone USA technical outerwear, clothing, and footwear line in the spring of 1997. We had solid financial backing. We had developed a cutting-edge line of products based on solid ethnographic observations and interviews with consumers, industry insiders, sales professionals in the field, and fitness professionals, and developed cutting edge products based on anticipated customer's needs. We made all the right contacts with the media and press. And yet, even though 1997 was a tremendous success for us, we somehow failed to connect with our customers.

But by 1999, we could be found in hundreds of shops and stores around the U.S., and it was the number two brand in Canada. Even though Ripzone Sports was considered successful by even a conservative account for a startup, Ripzone was still far from a household name. I sponsored our own professional teams. I hosted industry parties and contests. I gave out thousands of stickers and other free products (swag). I attended ALL the top trade shows each year. But still, no great market share change.

Opportunity Insights and New Ideas:

Was it our products, our marketing, or both?
I packed my bags and "literally" visited every shop / outlet in Florida, most on the east coast and many in California. What I found both surprised and disappointed me. As it turns out it was both our products and marketing that were to blame for our business stagnation.
It wasn't that we were not innovative or stylish. It wasn't that we were not radical or respected in the industry. The problem was that we were targeting the wrong customer. The customer as it turned out was not the end user, although in the end they were the ones using our products. The customer was actually the shop owner, and all of the owners had many of the same things in common. They each new what sold at their shops, what the price of each product was worth, what materials should be used in the design, and what innovations, if any each product should have. Besides knowing their marketing, they really knew their products, and all the correct marketing in the world couldn't sell our products if they didn't have the right kind of zipper, or a mesh pocket or tech. Why wasn't this information discovered sooner? I had over 24 sales reps located all over the country. Why didn't one of them figure this out? Simple. Each sales rep only let me know what was important to them from a marketing and sales point of view. Also, each of them, being, and having advanced knowledge of the industry had their own singular and bias based on personal experience. To solve the problem, we ended up retargeting what we considered our "customer", and developed our products based upon broader sales rep feedback, and shop owner interviews, analysis, and input. We were then also able to use this information and technique for our other product development as well.

PRODUCT EVOLUTION

Outsole: Technical outerwear, clothing and footwear design, manufacturing, and distribution.

Consumer Observations: We wanted to make a better athletic shoe, but we were constrained by production costs, retail price points and market placement.
In a nutshell, we were making low cost, heavy, full shell footwear and couldn't compete with high priced, light, high end EVA molded footwear. The "Customers" wanted a moderately priced, highly technical, innovative, light weight athletic shoe that would market between low end, full shell, no brand name, and high end molded, big brand name. The "secondary customers" wanted the same thing but for different reasons. As it turned out, the average life expectancy for a new pair of shoes is less than that of a tank on combat. Much to the chagrin of mom or dad or the end user, after only a few days of wear and tear, most shoes were ripped to shreds. The shop owners knew that a shoe would only hold up for a few days, and the athletes, "users" knew this as well.

Opportunity Insights and New Ideas: Realizing that we could not compete with big brands in the same price point and realizing that making even a sheet EVA outsole would be cost prohibitive, we had to become incredibly innovative and creative. I knew two things for sure. Anything I designed had to make use our existing full shell molds, which were we already developed, and designed and that were owned by our factories in Korea and China. I knew that I had to lengthen the life expectancy of our shoe to compete with higher end footwear. Step one was to gain a full understanding of the molded footwear production process. This was accomplished by both interviews with our factories mold engineers and a careful observation and understanding of both the mold machines and mold materials. Step two was to investigate more precisely how and why shoes were destroyed as they were used, once again observation, study, interviews, and testing. Step three was to investigate the current materials being used in footwear design, and the investigation of possible new materials and composites that might be suited for future development. We found that the area on top of the shoe near the toes, and the area of the lower heel received the most wear and tear, due to the nature of the environment, (road, concrete, sandpaper grips, wood), and trick movements. Although Kevlar was the current "In" material that was being used on high-end footwear, my tests and analysis illustrated that although Kevlar was an incredible material for impact (Bullet proof vests, etc.), it was not very abrasive resistant. I found a synthetic product manufactured by 3M, which was 7 times more abrasive resistant (primary use for this material was in matting), and much less expensive. This solved our materials problem, but not our outsole problem. I then designed a new lightweight rubber full shell, which used our current molds, but eliminated part of the mold grid infrastructure. Instead of the rubber mold grids having a square structure, the new grids were developed using a triangular structure. This gave the grid needed strength, but eliminated the need for access rubber, which was access weight, and reduced the weight of each shoe by an average of 8 oz. and reducing our cost of materials.

TOO MANY COOKS and "technology doesn't always mean innovation".

Archimedes Innovations, LLC.
Counter threat product consulting, providing strategic planning, R&D, product design, engineering, prototyping, and manufacturing).
Case Study: Security Camera Systems Design – "The Night Hawk"

Consumer Observations: An Archimedes' client, Regiscope Digital Imaging wanted to take an 80 year old business to the next level, digital. They also wanted to branch out into new areas of security. For over 80 years they made huge film-based cameras, which took a snap shot record of everything from cashed checks to company personal, but now they wanted to get into digital security. From a product standpoint they basically needed to start from scratch. They needed new materials, new technology, new designs, and new manufacturing. I started my work by interviewing the 3 principals of the company. They each had a clear idea about how their current products currently worked, and were, for the most part, up to date with current technology and terminology. We benchmarked competition and explored manufacturing materials and techniques that might be available. We tested dozens of digital cameras, and they began to write their own proprietary Linux code, specific for their applications. Despite my urging not to do it themselves, Regiscope's internal developers and principals preformed their own observations and

ethnographic site-based research, and fed me individual reports on their findings. I decided that based on both their finances and substantial lack of product manufacturing quantity needs, we would have to use metal. Plastic was out. One prototype turned into three, turned into seven, turned into ten. Each step further took us two steps back as each principal had different ideas about what they wanted in the product. To solve the problem, I developed a research questionnaire protocol, (Business analysis Use Case Interviews) and we waded through all of the miscellaneous, and misleading information. I performed my own ethnographic, ergonomic, and use case research.

Opportunity Insights and New Ideas:

Our initial, "Super Tech." security camera unit:

-Suction cups on base unit.
-All digital lens focus.
-30% tinted anti-glare shields.
-Spring and hinge robot swing style arm.
-Multi function job application.
-Adjustable camera head.

What we discovered:

-Most of the base tables did not accommodate the suction cups, as the surfaces were textured and cluttered.
-The all-digital lens focus was not enough. A manual adjustment was many times needed by the service rep.
-The digital cameras took great pictures in good light or poor light, but not in mixed light. The 30% tint only added to this problem. We increased the tint to 100% in some cases and removed the glare shields altogether in many applications.
-The spring and hinge robot arm was replaced with a simple and more cost-effective gooseneck. Although the new arm was not as attractive, it was much more practical and reliable for the specified work applications.
-Four new models, each model designed for a specific job function, replaced the multi-function job application CAM. Check CAM, ID CAM, Package CAM, Driver CAM.

VIRTUAL PRODUCTS

BCT Partners Incubator at the New Jersey Institute of Technology: I.T. Think Tank.

Consumer Observations:

Sometimes, especially these days, many "products", are virtual. You can't touch them, or hold them, but they are very real. When building a million-dollar state of the art, interactive website, research, planning, and analysis are extremely important. Everything literally builds in steps that are not easily retraced or fixed. I was given the task of information architect and senior business and research analyst. We had to create a highly interactive website, which had the functionality of a software program. In fact, the site was so sophisticated that it acted like and made computations like a program.
Observations and research took on a more virtual form, and involved user testing (actual users' needs, wants, wishes), architecture (building a framework from with to function), Use case scenarios (Writing step by step processes for both the human and computer), and feedback from questionnaire documentation.

Opportunity Insights and New Ideas:

Over a period of many months, in conjunction with clients, users, developers, programmers and designers, we built a successful and highly usable site. I wanted to include this example, because the design process of a virtual product involves some unique characteristics, which may be more difficult to overcome or revised once started. Product

design starts with either a question, “What do we need?” or, an answer, “We need this”. Then the necessary steps can be taken to create that product or service. If steps are skipped along the way, or steps are taken out of order, great innovation may still be possible. In fact, some of the greatest inventions in history were created in just such a way, (accidents or innovations). Virtual products build on very well thought out and meticulously well-placed steps. Any steps skipped or misplaced, or any ambiguous ideas can be financially disastrous, and cripple a project, because of the nature of the virtual process. The time for innovation, creativity and design are in the beginning of the process and work hand in hand with R&D and planning but may be overcome through an agile work process.

-Know yourself, your client & your consumer.
-Know your product(s).
-Why do you exist?
-Why do your products exist?

Do you & your product:
-Fill the gap?
-Create the market?
-Compete with existing market?

Anticipate “X” Factors
-Competition
-Price
-Technological Changes
-Remote Logistics
-Relationship Changes
-Legal Restrictions
-Environmental

Objective evaluation of your resources
-Financial
-Technology
-Materials
-Team
-External
-Facilities
-Equipment
-Relationships
-Network

-Both Internal and External Communication.
-Flexibility of organization and members.
-Coordination across the organization.
-Management approval and enthusiasm.
-Proper funding and investment from start to finish.
-Internal Incentives for change.

-Clear goals, and vision with targeted deadlines.
-Objective and realistic goals and deadlines.
-Proper management and reinforcement of goals.
-Follow through and tracking of plan throughout process.
-Willingness by ALL to accomplish Strategic Plan.

OYSTER 2003

SUMMARY: An Idea that I had prior to either “The Cloud” or “Smart phone, ipads or “dummy Terminals”.

A computer network architecture including a distributed network of server(s) providing host services, a plurality of “Remote terminals” / “Generic terminals” or thin clients, which are low in cost, a means of communicating between (client(s) / customer(s) / user(s)) and server(s), and transmitting tasks from user(s) to worldwide centralized server(s) for processing.

BACKGROUND:

In the early days of computing, computers were very expensive and relatively low in power. For this reason, it was essential to maximize use of the computers and share the available resources with a large number of users. Components were slow and expensive which led to the use of “dumb terminals” connected to mainframe computers permitting the user to communicate with the mainframe in a time-share fashion. All application programs were stored on the mainframe either in primary or secondary storage. As time passed computers became more powerful and less costly. The reduction in cost led to improved terminals that handled some of the processing tasks such as handling the editor and similar tasks that could be executed in a limited power system. Minicomputers came to the market providing additional lower cost hardware and expanding the role of computers in other environments where cost was an issue. By the later 1970’s personal computers were introduced to the market giving users total control over both the hardware and software. Computing became affordable and applications of computers exploded. As the personal computer developed, more and more people had access to computing resources. By the mid 1980’s personal computers were being assembled into networks allowing the users to access information hosted by other systems. Online systems such as Compu Serve, Prodigy, America Online, Delphi, etc. became available and new services such as electronic mail flourished.

Universities were sharing resources through the Internet. Internet use was expensive and difficult requiring the user to be proficient in both Unix and networking in order to access remote resources. During the 1980’s additional developments occurred relating the computer networking, hypertext, developments in databases and database languages and object-oriented programming. Other developments of interest were directed to artificial intelligence, distributed processing, parallel processing and by the late 1980’s web browsing. Resources such as those available on the Internet needed a graphical user interface similar to Apple’s Macintosh. In 1984 the leading operating system in use in personal computers was Microsoft DOS which was an archaic command line interface which was difficult to use and highly inefficient. The Macintosh provided a GUI Graphical User Interface and was much simpler to user permitting users to accomplish sophisticated tasks with very few, very intuitive actions. Tim Bernes Lee produced an equivalent user interface for accessing the internet combining a graphic user interface and a new file format called the HTML Hyper Text Markup Language. Producers of content stored their files as HTML documents and users with browsers could view the documents without having knowledge of Unix, TCI/IP and other networking details. A simple mouse click transferred the user from one document to a related document using collective resources available through the network. In the early 1990’s Internet use exploded with the birth of the World Wide Web. The client server architecture started to overtake mainframes, minicomputers, and local area networks are the preferred method of sharing resources. New languages were developed such as JAVA providing machine independence and transparent operation. Microsoft migrated from a large base of DOS users to a larger base of Windows users in 1995 when they provided the first product from Microsoft that lived up to public expectations, Windows 95. With Microsoft onboard with the Macintosh like GUI the transition was complete from command line interfaces of the 1970’s being replaced with GUI’s of the 1980’s. Millions of users began using the World Wide Web accessing it through the Browser.

UNIQUE INVENTION/INNOVATION CHARACTERISTICS:

Communication Protocol. Specificity in means of communication is not fundamentally important and the means of transporting communication however is open (wireless – via cable or satellite, etc.).

Personal Identifier ID for each users portable buffering card. A certain amount of memory is required for terminal operation, buffering and some storage. The Personal ID card is essentially the user identifier and contains all information about the user, user server location and files, unique operating environment, command keyboard keys, screen identifier and universal translator information. The card is programmed with user information and preferences. If the card is lost, damaged or stolen, it can be terminated and a new card can be programmed and given to the user, much in the way a credit card or cell phone can be replaced, only without the loss of data or sensitive information. This card not only functions as the remote terminals brain, but also is used to control other remote hardware, such as a printer. Example: The user is working on a document on board an airplane in route to Japan and needs a printed document of her file for a meeting when she lands in the UK. She can either print a document on the airplane's public server printer, or have the file sent and printed to the UK location. This is made possible by her unique personal card Identifier. *None of her data is stored on the OYSTER™ Remote. The data is stored on her hard drive (computer), which resides at the OYSTER™ Main server site. This identifier would also serve as monetary exchange system, virtually eliminating the chance of identity theft and internet crime, as all purchasing info stems from the Oyster™ Server. Just as a bank retains all individual client's private information, once a client is in the system, she no longer has to use credit card, pay pal or other forms of payment. All data is protected at the server as in a bank. In essence Oyster™ is the only needed liaison between a bank and all companies and or individuals, which shall be paid.

Remote Terminal.
The terminal is essentially a display unit with keyboard. It has the capability of communicating remotely with the server with information provided by use of the Personal ID Buffering Card. If the remote terminal is lost, damaged or stolen, it can be easily replaced without loss of data, files or any personal or critical information (As if buying and activating a new cell phone, but all data remains intact). The dummy terminal (Device manufactured by a key alliance LG, Nokia, Sony, etc.) is purchased by the user, (customer) upon purchase of the Oyster™ system and services package. Analogy: Essentially the dummy terminal and keyboard act like a camera and keyboard on a very long wireless wire. The user sees the application she is using by way of the monitor, and inputs commands with the keyboard, but the unit isn't processing the data, only instructing the worldwide server's computer to process the commands and make actions. The user sees this happening by way of the monitor.

The Software, Computer and Operating Systems are Services not Products. The customer, client or user never purchases or installs either an operating system or software. The operating system resides at the server site. The software, other services, and the client, or (user) accesses applications, services, programs, communicate and store data by paying monthly service fees, much like cable or cell phone companies do. Example: A client uses CAD software on a daily basis but needs two other programs to tackle a one- or two-time specific project. Instead of having to purchase, load and de-bug new software, the programs are available as a service and as part of the clients' service fees. All software or media on demand, anytime, anywhere in the world, on any generic or non-generic Oyster™ Terminal. No viruses, automatic updates, up to date state of the art software and hardware, and no replacing broken or outdated computers.

Non-Platform Specific.
Since the user is actually viewing the actions being remotely preformed on the remote server computer, the terminal is non-platform specific. This means that it does not matter if the user requires DOS, Windows, OS, or Unix. The terminal is a porthole for whatever platform the user requires and works within. Example: A user has experience with the Macintosh computer platform and (OS X) operating system. Another user has experience with the Dell computer platform and (Windows) operating system. The terminal revises keyboard commands and interactions, which have been dictated by the users unique Identifier and updates the terminal accordingly.

Non-Application Specific.

Since the user is actually viewing the actions being remotely preformed on the remote server computer, the terminal is non-application specific. This means that it does not matter if the user requires DOS, Windows, OS, or Unix applications. The terminal is a porthole for whatever platform the user requires and works within the specifications of the user's unique key identifier. Example: The user has experience with Macintosh software applications and programs but requires software applications only made for Windows. The terminal revises keyboard commands which have been dictated by the users unique Identifier and updates the terminal accordingly. The software remains usable to both users and works seamlessly without requiring switching platforms or applications.

Communication Protocol. Specificity in means of communication is not fundamentally important at this time, as innovations in data transfer and transferring data at faster rates advances daily. The means of transporting communication is also open (wireless – via cable or satellite, etc.).

KEY ALLIANCES AND LICENSING

Key Alliances.
The key to Oyster™ services is a strategic alliance with other companies in communication, software, hardware, and media content. Oyster™ does not manufacture the Oyster™ Terminal, key alliances manufacturer the Oyster™ Terminal. Other non-alliance companies manufacture other generic versions of the terminal. Example: Apple™ manufactures the Ipod™ and offers it's Itunes™ as a service on it's own Apple™/Itunes™ web site. Other companies manufacture digital music players, which are also compatible with the Ipod™. Key Alliances. The key to Oyster™ services is a strategic alliance with other companies in communication, software, hardware, and media content. Oyster™ does not produce software; media content, or create communication. It does provide and maintain software, provide media content and provide communication. Oyster™ creates it own proprietary communication software, maintains and stores data, and creates new applications for all technology that it supports.

Unique Technological Innovations.
The system incorporates a number of technologies specifically developed for Oyster. Some of which are: -Piezoelectric keypad, which generates energy back into the battery. -Bud earpiece, which charges directly from the terminal, and require no external battery. -Proximity key/card device tool and identifier. -Universal key pad which displays language/keys, platform and system specific information. -Non-specific platform universal interface filter software. -Individual/corporate secure storage remote site.