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Ultraviolet Inkjet Ink: A Market and Audience Analysis for Kowa American

Haley Smith

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Abstract

My report was commissioned to examine the market strategies and audience approaches implemented in the ultraviolet inkjet ink industry. My research juxtaposes the initiatives of leading ink investors with those of the monomer-producing corporation, Kowa American. My findings emphasize the discrepancies in competitive development between Kowa and similar globally innovative agencies. My research indicates that Kowa must capitalize on industry gaps, conduct environmental research, and minimize financial setbacks to obtain a competitive advantage in the current ink market. Further, Kowa must personalize customers' buying experiences in order to expand its budding product lines and maximize profits.

Executive Summary

Objective. This report was commissioned to examine how the market strategies and audience appeals of competitive ultraviolet inkjet ink investors compare to those relative approaches used by Kowa American Corporation. It urges marketing developers to enhance sales knowledge to trump competition and utilize superior avenues to reach customer channels. Though Kowa provides products that optimize communication, monitoring, and control for industrial ink production, it must expand its market to provide a range of products for company-wide data networks. Its adoption and establishment of inkjet ink technology should be geared towards customer requirements and industry need for the sake of competitive advantage.

Key Findings Summarized. Methods of research for the project include accessing and researching competitive websites in an effort to collect available data for market and audience recommendations. The research draws attention to the different levels of competitive development between Kowa, Sartomer, and globally innovative agencies. Based on my understanding, Kowa is capable of advancing the ultraviolet inkjet ink industry, so long as it is conscious of industry gaps, environmental influences, cost setbacks, and the potential for digital and audience targeting via specific market segment appeals recorded in the recommendations.

Recommendations Summarized. It is recommended that Kowa American Corporation use tailor-made communication solutions for each customer, in an effort to personalize the buying experience and maximize profits. These should be developed on a need-to-need basis.

Conclusions Summarized. In comparing Kowa to competitors, it remains a successful contender in the race to expand the ultraviolet inkjet ink market. While its success is currently compromised by minimal web and audience targeting, Kowa is capable of adjusting its customer marketing strategies to develop technology that will transcend the current competitive platform.

Introduction

Statement of Topic and Approach

Statement of Topic. As a growing industry, inkjet printing has been highlighted as a promising additive method due to its precision, accuracy, low cost, ability to deposit multiple materials contemporaneously, and simple “up and out” scaling. Materials throughput the inks are dependent on the size of the printer and number of jets. Further, it is a well-established tool for commercial and consumer image production, as it has been incorporated into 3D printing methods for prototyping and manufacturing. Recent reports of inkjet-printed materials have been focused mainly on polymer melts and solutions, which are solidified by drying or cooling and require carrier substrates. Hence, the potential to rapidly produce free standing solid dosage forms using UV curable materials has yet to be explored in inkjet printing.

Rationale for Topic Exploration

For Kowa, the kinds of research conducted in this study indicate what should be done to improve the marketing tactics currently adopted and implemented for the ultraviolet curable inkjet inks. Moreover, this includes qualitative observations aimed at enhancing advertising and marketing techniques for the audiences and customer segments of ultraviolet inkjet ink. Inkjet ink competitors, like Arkema’s Sartomer, have been assessed and contrasted with Kowa in order to make fair recommendations for refinement. This study implements a mix of primary and secondary research for market estimates and forecasts that will enhance audience and customer appeals. The secondary research forms the initial phase of the study, while extensive “data” mining and referencing of verified data sources was conducted.

In terms of the topic, independent studies, government and regulatory published material, technical journals, and free data sources were used to consider market drivers, restraints, current

and expected impact, regulatory scenarios, and expected developments based on global material supply and audience demand statistics.

Statement of Approach. My research investigates and analyze UV inkjet printing, which is the fastest growing sector for ultraviolet usage. This market has seen rapid growth in recent years, with the output for UV inkjet-printed products increasing from \$3.9 billion in 2008 to \$6.7 billion in 2012. It is forecast to reach \$15.9 billion in real constant value terms, eliminating effects of inflation and currency exchange fluctuations by 2018 (Smithers). Bearing in mind the benefits of UV inkjet printing, I developed a plan to improve the marketing of globally produced specialty chemicals that contribute to UV ink production, including specialty acrylate, methacrylate, acrylamide, anhydride monomers, and a variety of other materials. I isolated particular market variables to further gauge the pitfalls, strategies, and weaknesses embedded within the international monomer-producing corporation *Kowa American*. As an intern for this company, I was initially motivated by the corporate literature and website data collected from Kowa. After assessing these resources, I developed my project to target the lack of marketing analyses and competitor research for many facets of its international and nationwide exchanges.

Isolation of Variables

In isolating significant factors, I focused exclusively on UV inkjet ink production, which is under developed in many competing agencies. UV was originally taken up in the visual communications sector because it provides good white and lightfast print, suitable for outdoor applications. The print is durable and this and this may eliminate additional protective processes such as coating and lamination, thus lowering the overall cost of the final product versus solvent-based inkjet printing (Smithers). Such evidence prompted me to investigate the growth of this

sector, other applications using UV inkjets that are growing faster, and the fall of the total UV inkjet market in present day. Audience appeals were determined based on these evaluations.

Initial Approach and Forethoughts

I set out to examine UV's competitors and limited my scope to that of Sartomer, the primary competitor of Kowa American on a national level. Yet, advancements by similar competitors were addressed, as they have come to allow subsequent finishing processes to be carried out immediately, with no delay waiting for drying. The curing with high durability and flexibility offers significant technical, economic and environmental advantages for many applications. Thus, ultraviolet curable inkjet inks for Kowa American should, given my investigation, reflect a sharper result than water or solvent based printing. I intend to research how the ink is fixed virtually instantly before it has a chance to spread, which is key for good quality. For Kowa, it is critical to estimate the market for low migration ink systems, where all the ink components remain in the printed ink film. This makes it suitable for packaging where there may be contaminants migrating into the product. Further assessment of UV inkjet printing from the perspective of its environmental advantages and competitor advantages in this realm should be considered, though my approach neglected to incorporate significant research on this variable. Given restrictions to copyright information and paid subscriptions, my research undertaking was limited to the body of knowledge presented.

For Kowa, the concept of eliminating volatile organic compound emissions, which are found in solvent-based inks, will create a push towards lessening the environmental impact of UV ink production. According to the Smithers Group, UV curing assemblies are quite compact, particularly in the case LED systems. This helps to make compact equipment and reduce harmful outputs in the industry. To create a usable, successful marketing plan and devise

audience assessments for the ultraviolet curable ink market of KOWA American Corporation, I was required to analyze the aforementioned variables based on corresponding findings and suggestions for improvements in the company's market outlook. My research, then, offers insights based on preexisting findings about inkjet printing, where the push toward higher press speed, stability, and quality remains fixed. My approach was centered on critically analyzing the increased interest in solvent-based inks and the delivery of high quality print results with improved efficiencies. Given the heightened interest in specialty inks and the ultraviolet substitute for the industry, potential for Kowa's creation of high quality, differentiated products grounded each aspect of my marketing plan and audience recommendations.

Purpose and Significance

General Purpose. Personally and professionally, my completion of this multifaceted assignment began as a culmination of my academic and intellectual experience as a communications student. However, given my position with Kowa American, my selection of the market analysis project stemmed from my desire to enhance the marketing research that underlies the corporation. Upon completion, I intended to assemble a portfolio of findings and results, create a final product demonstrating my learning acquisition and conclusions, and present the project to a panel of Kowa professionals who will collectively evaluate its quality for further application in the company. This project encouraged me to hone my research, media literacy, planning, self-sufficiency, and audience building for the benefit of a substantial corporation (Kowa and its affiliates). The success and proper development of ultraviolet inkjet ink is contingent upon extensive market research. And, I took it upon myself to design and execute a project that provided Kowa with the information it desperately sought in this realm of monomer-

based products. As a whole, expounding upon such skills has prepared me to apply for a career in marketing, public relations, or human resources in an industry such as Kowa.

General Significance. After completing this research intensive investigation, I feel confident that I am capable of applying my knowledge of the ink market and its variables across many different subject areas and domains to benefit my outside learning experiences, future interviews, further scientific observations, and additional internships with Kowa and its subsidiaries. In particular, my purpose targeted Kowa, as an individual segment. It is for the benefit of my superiors that my passion for Kowa's success drove me to merge my internship knowledge and experience into a capstone proposal that could stimulate inkjet ink market advancements at Kowa American. **Note:** All confidential data was intentionally left out.

Practical Significance. The practical significance of pursuing a research project of this sort was to recognize that the technology that is of interest to Kowa American, which is that of UV inkjet printing, is developing rapidly, from the print heads in use, to inks, to equipment. Higher resolution heads with smaller ink droplets and greater reliability has significantly boosted the achievable quality. Because the print volume of UV inkjet is forecast to rise by 535% (Smithers), the average unit cost of all UV inkjet is declining. Capitalizing on lower average unit value was found to increase reflections of two main factors. It is significant to note that my conclusions yield evidence for price reductions as the sector that will mature with more productive equipment. This would affect the high-value signage that is falling in the overall market. As a whole, a research undertaking of this sort provides tangible market evaluations for Kowa American. It will aid in product advancement and supply the academic research Kowa desperately needs to outshine competitors and further cultivate its ultraviolet inkjet ink industry. For me, as a student and intern, there is great significance in the broad range of advanced

research and population assessment that took place over the course of this project. Theoretically, ethically, and methodologically, the creative nature of my self-selected project strengthened my motivation to learn about a foreign market in a field outside my current discipline. I aimed to cultivate my independent leadership abilities and evoke positive cultural effects on Kowa, all as a result of my devotion to market research and audience analysis at the highest academic level. As a result, my final research compilation now provides a significant baseline for continued research and cultivation of ultraviolet inkjet ink technology for national and global consumers.

Rationale and Preliminary Findings

Background Evidence

Directive marketing does not have a long history as a major channel of distribution in Japan, and substantial growth of direct marketing has occurred, primarily, in recent years. Despite a long-standing tradition of in-person shopping at local “mom and pop” stores or department stores, there has remained a preference for handling merchandise prior to purchase. My report requires extensive analysis of direct marketing and a holistic recognition of firms that have taken advantage of this trend. My primary rationale for validating my findings is that of the sales potential amongst Japanese consumers. To understand direct marketing and related regulatory issues in Japan, it is necessary to have an understanding of Japanese attitudes and beliefs about direct marketing. Henceforth, the lack of understanding of consumer attitudes and beliefs can lead direct marketers to make offers and appeals that are ineffective, or, potentially, offensive, to Japanese business partners. Thus, the purpose of this preliminary research is to compare the attitudes of Japanese and United States consumers toward direct marketing and its regulation. In particular, this research focusses on individual and largescale marketing practices and attitudes toward the current level of regulation of direct marketing.

Understanding Key Differences. A key difference in direct marketing regulation in the United States and Japan is that privacy issues have not risen to the forefront of public attention, largely because of the lack of commercial custom. Thus, to date, there has been little impetus for the Japanese government to become involved in the regulation of mailing list sales and the like. In contrast, in the United States, there have been several attempts to develop legislation to protect consumer privacy. More specifically, these practices include: allowing individuals to remove their names from mailing lists, informing the consumer why information is being collected, and indicating how personal information will be used after it has been collected, as per Maynard and Franke. In recent years, it has become apparent that, if the industry does not regulate itself, it will long-standing problems in the future. Therefore, to a large extent, my report aims to bear in mind critical aspects of the Japanese culture.

Understanding Cultural Significance

Fundamentally, the U.S. and Japanese communication patterns, at the contextual level, can be distinguished as high-context or low-context versions of communication. A high context message is one in which information is already in a specific person, while very little is in the coded, explicit, transmitted part of the message. A low context communication message, then, is just the opposite. My research suggests that cultures differ at their contextual levels, at every stage in the marketing and business industry. And, it must be dually noted that Japan is a high-context culture, when compared with the United States. Thus, Kowa and its affiliates must recognize that high-context cultures are intuitive and contemplative. Japanese executives, like those of Kowa, tend to use indirect and ambiguous messages, while their counterpart uses analytical and action oriented messaging. They tend to use direct, clearly articulated messages, as well as less direct, low-key approaches in which a mood or image is built in an attempt to

build a relationship with the audience. This is appropriate business practice when appealing to a high context culture, and Kowa must capitalize on its knowledge of both industry variations.

Message Selection. More direct messages that expound on explicit product benefits should be used, and specific cultural appeals must coincide with all sales and marketing initiatives. An implication of these findings for multinational marketers, like Kowa, is that they should strive to create a well-established, well-informed relationship with their Japanese customers. Accordingly, unless a relationship has already been established with a customer, certain marketing efforts that are not culturally appropriate are likely to be counterproductive. Given the interpersonal nature of certain directive communication, combined with the Japanese reluctance in “forward” attempts, marketers must be exceptionally careful not to appear intrusive or rude, in either country setting. Additional clarification and sample evidence will follow.

Clarification. Ultraviolet ink producers, like Kowa, must implement the aforementioned directive approaches by engaging in the following practices.

Kowa must advertise specialty products that meet individual customer requirements. To help justify the high purchase prices of these custom solutions, Kowa could include free, comprehensive support services. Rather than limiting top-tier services to top-tier customers who are willing to pay for them, the same deep level of service should be provided to all customers. By following a “same level of service to all” approach, Kowa can avoid hurting their own profitability and devaluing the provided services. While there are strong margins in the industry, and customers see value in both the customized products and the support services that are available to them, customers make purchasing decisions based on the lowest price. This means that chemical manufacturers, like Kowa, must find new ways to add value and differentiate their offerings. This can be done using the following recommendations and sample approaches:

To compete with visionary companies that are leading the industry, Kowa must combine technology with customer knowledge to develop innovative approaches to selling. The approaches listed below are based on insights from the digital economy to increase revenue.

First, Kowa should offer multiple service levels. Kowa could offer multiple service levels at different price points based on customer need. For example, marketing representatives could start by including essential services with their standard product lines. To lower costs, technology could be used to automate and standardize business processes such as delivery and payment terms. Furthermore, additional layers of services could be included, based on data analytics and assessments. These services could help provide direction. This approach, then, would be rooted in the idea of customer segmentation, and it could be supported by a thorough price analysis, as well as real-time insights into price margins at customer and product level.

Additionally, to accommodate this mindset, chemical companies could unbundle services from their products. To increase directive approaches on the web and in marketing campaigns, Kowa should inform customers they can purchase products online. Digital technologies with artificial intelligence help determine pricing, and analytics could be used to appeal to customer segments and advance product development leads. Henceforth, by developing a separate business unit, Kowa could utilize the previous recommendations to compete in situations with intense competitive pricing pressure. In this way, Kowa could offer low-cost ultraviolet inkjet products without the risk of undermining existing product lines. Thus, they could provide customers who are paying high prices for monomer-based products specialty pricing and unique benefits through directive and individualized marketing approaches covered in this report. By utilizing and analyzing these recommendations, Kowa will be well equipped to grow its market. To solidify this research, specific solutions for improvement are provided in the next section.

Specific Solutions

In order to gain a competitive advantage, find solutions that yield preferred results, engage in directive marketing practices, develop a successful marketing campaign, and increase profit margins, Kowa must first recognize and implement the following strategic initiatives:

- Define why Kowa's product lines are uniquely specialized and beneficial. To gain a competitive advantage, the reason for buying products and services, in terms of the benefits, results, or outcomes that customers will enjoy from purchasing them, must be heavily advertised. This means that slogans, corporate literature, web content, digital marketing efforts, and trade show events must reinforce Kowa's mission and individuality. Focus on the benefits of what makes Kowa's inks and coatings "better."
- Use content and social media marketing to directly engage with prospective customers. By building relationships with customers through social media and digital channels, customer access becomes more expansive. This directive marketing approach enables greater potential to expound upon qualified lead, more channels to sell existing and developing products, and low cost margins for advertising and publicity. Leverage select audiences by recognizing cultural influence and the need for directive marketing content and campaigns in digital and real world business exchanges.
- Kowa's position in the production market for ultraviolet inkjet ink is strong, given its competitive pricing, its experience level, its familiarity, and its one-on-one client relationships. Strong rapport and morale within the company also sets it apart from competitors, and the intimate, classic feel of its establishment keeps customers "coming back for more." However, Kowa must recognize the significance of these attributes in

the grand scheme of its developing marketing campaign. Kowa's superior knowledge of today's digital trends and channels and the ever-changing dynamic of the industry, would, in turn, provide them with insights that could help promote print and digital materials on all social media platforms. Such an awareness would also enable them to adapt to changing corporate circumstances.

- Kowa should advertise its content using email marketing and internet ads, as opposed to print marketing. I recommend that Kowa also develop additional promotions and bundle services. I recommend that Kowa, then, advertise these specials on their website, provide call to action phrasing in their digital and print literature, and incorporate prominent signage to help their presence at trade shows and coatings events.
- In order to create a results-driven, team-oriented environment with a solid marketing base, Kowa must understand the importance of employing flexible communication strategies to a variety of publics and clients. Kowa can improve customer relations and teamwork, which will help to fortify the strategic initiatives and objectives outlined previously. My recommendations for successful directive marketing and campaign management, then, require a comprehensive customer needs assessment, careful audience analysis and constructive appeals, a competitive product analysis, and significant background and competitive research on market trends, outlooks, and campaigns. All marketing approaches should also bear in mind company climate, client relationships, client reactions, and overall success rates of ultraviolet ink products.
- To create the right advertisements for its customer segment and reap the benefits (return on investment) that it seeks, Kowa will want to identify the client profiles that have

proven to be the most satisfied. Because these sources represent a particular demographic, it is important for Kowa to capitalize on a single, common challenge or need that can help to fine tune its sales focus.

- In order to develop a strategic, specific plan of action, Kowa must ensure that it has identified its target (through a CNA) and nailed its differentiators (strengths and weaknesses). Kowa must also review the messaging and marketing programs of competitors to make sure they are touching the right customers with a relevant message.
- Kowa needs to consider its company name and branding to ensure it hits home and reflects the niche of the business. These objectives will help Kowa employ its plan of action, resulting in increased sales and a satisfied client base all around.
- In establishing its sales improvement strategies further, Kowa must ensure that marketing ads and efforts appeal to existing customers, too. Kowa builds strong rapport with each customer, and many conduct repeat business. This being said, marketers must ensure that they have identified loyal and top-spending customers. Kowa must then offer them more. This form of customer appreciation is great for differentiating a company in a customer's mind, and it will drive home repeat business and gain referrals.
- Once these strategic initiatives are accounted for, Kowa should stabilize its marketing action plan. To do so, Kowa must begin by familiarizing itself with prospects. Because every stage of the buying cycle is different and deserves a marketing plan of its own, Kowa must be prepared to nurture leads further, close sales, and push for referrals. This

will guarantee success, in terms of properly utilizing approaches for target customers.

All directive marketing efforts, then, should also be exclusively based on overall needs.

- Because Kowa has failed to expand its content marketing to all social media platforms, it must also begin developing relationships with customers online, to remain competitive.
- Once all social media avenues are accounted for, Kowa should make sure that the sales and marketing team has the tools they need to close any deals that arise, either from print marketing or digital marketing. Kowa must think about the timeline that accompanies a typical sale and ways in which to match the outreach efforts for prospects and leads.
- Kowa's business must expand its digital horizons to reach a broader audience, generate greater familiarity and interest, and increase sales and revenue in the process. Kowa must use advertisements on various platforms to create publicity and awareness. It must also compile email addresses and basic information about prospects, tailor a personalized marketing outreach campaign to them, and offer more information when inquiries arise.
- More strategic marketing also requires Kowa to invite prospects to use their originality and well-established rapport to their advantage. Expanding social media while also capitalizing on the successful print advertising already underway will strike a balance between familiarity and innovation for Kowa to drive sales and interest upward.
- These strategies contribute to a largescale plan to grow the business and client base of Kowa American. Kowa's business operations are steady and prolific, yet enhancements must be made in order to maximize profits. These solutions will enable Kowa to capitalize on the budding ink market, while nurturing existing marketing leads.

Critical Review of Literature

In reviewing the existing literature for the ultraviolet ink market, I found many articles in the scientific databases that suggest a lack of development in this field. Though there is significant potential for products of the ultraviolet variety, the competitive market must be refined and expanded. For KOWA, this means that audience appeals and market focus should be geared towards expanding product outlook, buyer likelihood, and advancing developments for the prospective market. Additionally, similar research will need to be conducted on the ink market through accessing corporate records and business and statistical reports. Research on the growing market for conductive inks, its commercialization, and marketing advice for suppliers, such as KOWA, is compiled in the following review of literature. In terms of market analysis, this is a challenging technical field, yet, as the ink industry must move along with its customers, further competitive research will need to be assessed and utilized to appeal to prospective buyers.

Market Outlook

The use of UV curing technology has been implemented in the printing and surface coatings industry for a number of decades. The curing mechanism concept is well established in terms of traditional printing processes, and, in recent years, there has been increased interest in combining UV curing technology and ink-jet printing (Hancock, 2004). This non-impact method uses droplets of ink that are rapidly ejected from small orifices at relatively high speeds to maximize productivity and transcend the traditional printing process. Though it has uniquely low ink wastage, ink-jet printing has primarily been used as an advanced technology for high-cost materials and variable printing data.

The body of research surrounding the UV ink market suggests that it is expected to sustain its popularity in existing industrial sectors. Factual evidence suggests that the publication

and printing industries will continue to be the leading consumers of UV inks in the future and will constitute nearly one-third of the total market revenue by 2020. It is predicted that the UV curable inkjet market, then, will persist in its ability to provide superior adhesion, faster curing, and improved durability properties (Rajput, 2015). Correspondingly, there will be price reductions as the sector matures with more productive equipment, with high-value signage falling as a proportion of the overall market (Smithers Group, 2014).

Competitive Value Propositions

The sluggish curing properties and low-resolution images associated with conventional inks have boosted the demand for instantly curable, high-quality, and eco-friendly UV inks (Paints and Coatings Industry, 2015). In the current scenario, it is known that UV-curable inks have emerged as an ideal alternative to solvent and water-based ink technologies because they improve both quality and speed. Academic literature further suggests that advancements in this market will place inferior alternatives under substantial competitive pressure (Savastano, 2014). Ink suppliers, such as Kowa, must find new ways to meet the needs of users by minimalizing availability concerns and absorbing the cost of raw materials.

Patterns in this research offer insights about innovation in this industry, including significant literature about Nazdar Ink Technologies. For the benefit of Kowa, it should be noted that this corporation has released its 730 Series, which may prompt further competitive research. Nazdar's adaptations provide a flexible UV inkjet ink with market-leading adhesion on a wide range of flexible and rigid substrates (New Inkjet Ink, 2017). Due to its exceptional levels of flexibility and durability on a wide range of substrates, the Nazdar 730 Series is ideal for banners, window graphics, and pressure-sensitive vinyl, and acrylics. Similarly, researchers at The University of Manchester have developed a method of producing water-based and inkjet

printable 2D material inks, which could bring 2D crystal hetero structures from the lab into real-world products (New Inkjet Ink, 2017). Both samples showcase the advanced features that are currently attractive to consumers. Further research should aim to investigate how Kowa's UV-curable inks could compete with existing innovations (Robertson, 2008).

Audience Appeals

Kowa must attempt to achieve its determined goals efficiently by designing, producing, and offering products for exchange while maintaining a thorough understanding of target market needs and the costs of satisfying them (Kotler, 2011). This body of research concludes that marketing efforts directly correlate with customer acquisition, satisfaction, and retention. Therefore, customer appeals should focus on the characteristics of the activities being performed by Kowa, in terms of structure, performance, and interrelationships with customer segments. Product advancements and superiority should, then, elicit greater customer satisfaction. Further research concerning the UV inkjet market and the "perfect competition" that exists within it will aid in the determination of an equilibrium price, or, the minimum a supplier is willing to accept. Current research suggests that setting project costs will minimize the possibility of driving consumers away and maximize performance (Grover, 1999).

The body of marketing research that surrounds advancements in product development suggests that Kowa will have to consider production and distribution costs while also advocating for more locally based production (Kotler, 2011). In order to pursue sustainability, Kowa may want to rate the different potential distribution channels for their commitment to sustainable practices. Kowa's planning, then, should focus on systematic investigation of all competitive marketing activities in individual markets (Rothman, 1964). The end result should target design and development of specific product and marketing strategies and need-based techniques.

Competitor Analysis

On one hand, a 2016 SWOT analysis of Arkema, Inc., a global chemical group, reveals that research and development is one of the key drivers the industry's growth. The company is primarily concerned with operational excellence and innovative improvements to production facilities. This enables the company to work safely and competitively with the smallest environmental footprint possible. Arkema intends to improve their performance by systematically exploring new markets, anticipating technological and market changes, and developing products that meet society's future needs. They plan to introduce disruptive innovations that secure the company's technological positioning, which should be juxtaposed with Kowa's marketing efforts. On the other hand, a significant weakness of the company is its heavy dependence on its suppliers for raw materials. The company purchases raw materials, energy and gas, services, and equipment from a limited number of suppliers and, in some cases, a single supplier. Thus, if the company's key suppliers fail to provide the raw materials required for production, it can have a negative impact on the results of operations (Arkema, 2016).

Based on the SWOT analysis, Kowa should aim to capitalize on this weakness, as drawing from a wide range of sources will maximize market success. Sartomer, a subsidiary of the Arkema group, serves as the leading UV ink competitor for Kowa, yet yields less public records upon which comparisons and recommendations can be based. Substantial gaps in research and access to competitive literature make it difficult to conclude particulars about this supplier. Yet, upon discovering the 2016 Arkema Annual Report, it becomes clear that Sartomer's photocure resins business is inundated with requests for information. Accordingly, their markets change very fast, and seek new recommendations on products all the time. Ultimately, Sartomer's goal is to make it easier to obtain competitive outlooks in order to refine

their selections based on several criteria, including type of product (monomers, oligomers), target application, properties, and attributes (Sartomer, 2016).

Preliminary Suggestions

Kowa should show equivalent concern by devoting time and resources to advanced consumer and competitive investigations. Annual reports and public records for Sartomer supply evidence that its primary concern is that of ensuring the resistance, longevity, and insulation of its coating systems (Arkema, 2016). Sartomer's successful production and marketing of its complete range of specialty acrylate oligomers and monomers for UV curing has fueled the development of its new Sarbio innovation. This is manufactured from renewable raw materials and can be used as a reactive diluent, which serves as a recommendation basis for Kowa. Additionally, Sartomer's 3xtDimension engineered resins provide best in class performance for acrylate based systems to serve just about every industry (Arkema, 2016). These resins span a large range of viscosities offering range of tailor-ability, from formulation flexibility, to drop-in systems, to meeting need specific requirements. Sartomer, then, is an innovation leader, with over five decades of experience in design and development of curable systems. For Kowa, this research base reveals that it must be conscious of competitor advantages by expanding its product line and addressing individual customer segments. For Sartomer, product selections, formulation strategies, and assessments of curing parameters aid in the production of engineered resins that incorporate desired properties (Sartomer, 2016). This creates a unique application spectrum, which becomes attractive to a multitude of audiences.

Gaps in the UV Inkjet Ink Market

Gaps in the research base for the UV inkjet ink industry are primarily based on the body of research surrounding Sartomer, a segment of the Arkema group. As a whole, it is evident that

the company faces strong competition in each of its business lines. In the industrial specialties division, the commoditization of certain products can lead to significant price competition (Arkema, 2016). And, some of the company's competitors are larger and more vertically integrated, which could enable them to benefit from lower production costs for certain products that are also manufactured by Arkema. In the downstream of coating solutions and in high performance materials, the roles that differentiation, innovation, product quality, and related services play are unknown (Sartomer, 2016). Kowa should, in turn, recognize these gaps and uncertainties to better expand their value propositions. Though the economic emergence of certain countries, notably China, has been accompanied by the rise of local competitors and, subsequently, growing competition on certain product lines, great uncertainty still exists in create a competitive position by paving that way for innovative new products, new technologies, and the emergence as a leading competitor in the market (Arkema, 2016).

Methodology

My methods for validating market and customer segment estimates and forecasts for the ultraviolet inkjet ink market are assessed in the following discussion of procedures. As a result of adhering to these practices, I was able to gain significant industry insights, key developments and expectations. My research, then, utilizes validated and authenticated primary and secondary data sources for use in my marketing and audience-oriented recommendations.

My research endeavor began with the development of my thesis and hypotheses. I was required to compare market variables and product lines via accredited scientific and industry-specific literature. This required extensive examination of corporate standards and market analyses conducted on global superiors in the industry, Sartomer, and leading competitive advancements that highlight gaps for Kowa American. Further, I compared current market

strategies and corporate approaches used by Sartomer and outside competitors to compile feedback for Kowa's executives. A presentation of competitor analyses, market strategies, and projections for market success was developed for final dissemination of the research and findings posed in this paper. A breakdown of significant findings and a general market outlook were taken into account, while proposals for product development and continued research were noted as recommendations. Though limitations occurred based on accessibility and expertise, the procedures and methods incorporated into this study supplemented the overall project.

During the formative research stage, in which my goal was to learn as much as possible about how the target audience thinks and behaves in relation to the issue (ultraviolet inkjet ink) being addressed, a host of research methods provides many different data "viewpoints," which I used to conduct exploratory research. The body of research conducted at the beginning of the project reviews previous research involving both quantitative and qualitative data and aided in the initial development of the project strategies to delineate the parameters of this undertaking. As a result, I was able to steer the selection of the target audience, specify the potential behaviors to be promoted, and identify lessons learned and potential pitfalls for the greatest benefit for Kowa American. Though focus groups could have been organized for further exploration, I was able to utilize valuable qualitative data regarding the target audience to provide insights for my superiors that pinpointed the issues and obstacles of the ultraviolet inkjet industry.

Upon completion, process evaluation helped to keep the project on track and signaled changes that are needed in Kowa's framework for marketing and audience approaches. The most common data collection activity in this phase involved analysis of competitive literature to ensure that the project met my intended purpose. Other quantitative tracking mechanisms, such as industry-specific articles, identified whether Kowa's current customer appeals were satisfying

their target audience. Though current approaches were getting some attention and motivating action, further development of the inkjet ink industry is dependent upon detailed refinement of the advertising, web components, and message constructions used within the marketing realm of the corporation. In an ongoing multi-year project, it may be feasible to assess each market segment for the sake of fine-tuning customer appeals to meet the needs of corporate and competitive audiences. For a shorter-term project, such as mine, the recommendations made in the final segment are geared towards suggestions for future research and immediate, broad-range goals for organizational benefit. Additional competitive research avenues may also be explored.

Avenues for Further Research

Integrating quantitative and qualitative research methods lends depth and clarity to marketing assessments and audience development. This combination of approaches is necessary because of the wide range of data needed to develop effective communications strategies find their way into scientific, corporate communities. However, the potential for problems lies in attempts to combine such divergent research “paradigms.” Another obstacle, which will likely change as ultraviolet inkjet ink marketing is normalized in competitive platforms, is that of combining multiple methods to demonstrate appropriate appeals to widespread customer segments based on scientific and communicative market research. The bulk of my project aimed to merge the two disciplines, though it is difficult to find standing literature that draws the same comparisons that I sought to include in my study.

In all, my research required significant attention to finite scientific details through the lens of a chemist, a customer of Kowa and competitive agencies, and a communicative expert, as audience and market outlooks require knowledge in all three facets for successful expansion and superiority in the ultraviolet inkjet ink market. Though my recommendations for strategic

adherence to gaps in the industry, individualized, need-based appeals, and directive marketing tactics could be far-fetched, given my limited exposure to Kowa and its operations, I am confident that revisions to these dimensions of current inkjet manufacturing are a solid start.

Findings and Discussion

A Critical Analysis

Influence of Biases. In order to fairly and accurately draw recommendations from my research for my senior capstone project, I was required to analyze how my own experiences and background may influence my assessment of the ultraviolet inkjet ink market of the monomer-producing company, Kowa American. In this paper, I demonstrated my ability to apply an ethical framework and promote social justice by evaluating messages using critical and ethical analysis. The outcome of my research could have been influenced by several preexisting biases, including my interest and employment in the proposed company, my exposure to its employees and their opinions, and my limited knowledge of the market of interest.

Market Awareness

Thus, I needed to ensure that my conclusions were not prejudiced, assuming that my previously established attitudes and expectations could convey a positive outlook for Kowa, regardless of what my statistical evidence might prove. This required me to devise market strategies without substantial consideration of Kowa's potential for failure. Because I was more inclined to focus on Kowa's success and less on prospective competitors' advantages and superiority, I needed to exercise caution when assessing qualitative evidence and juxtaposing findings by researching with a standardized, unbiased mentality. This approach aided in the exclusion of partial opinions and unethical judgments of the ultraviolet ink market. Based on my preliminary research and exposure to Kowa and its products, gathering qualitative data, such as

that of socioeconomic presumptions, workplace stereotyping, and other means for exploratory research were considered, given the potential for incomplete, inconsistent, and one-sided results. To aid in my understanding of underlying reasoning, opinions, and motivations of corporations and their representatives, it was necessary maximize my incorporation of qualitative data to gain insight into the largescale problems and pitfalls that inhibit the growth of Kowa American's current ultraviolet ink industry. By recognizing the sources of bias in my research, I was able to consciously and correctly develop hypotheses for the development and expansion of Kowa's market. I was sure to draw conclusions from a widespread pool of comprehensive, well-informed, academic and scientific sources, which I aimed to disclose in this paper.

Disclaimer. For my research to have successfully evaded all biases, I would have needed to exclusively act upon a neutral framework. Yet, because I am partial to Kowa, I was unable to ensure that all assessments made did not strictly "agree" with what I already believe. Without full attention to this detail, I may have discounted opinions and data that disagreed with my views and the perspectives of my employer. Accessing, utilizing, and incorporating sources with different biases into my paper was difficult, and I could not assure that my research engaged with a broad spectrum of opinions and factual evidence. In particular, I was unable to study and integrate findings from competitor sites and literature, given that scholarly articles were more accessible and free of charge. The disclaimer remains that I was incapable of conveying nonconforming opinions within the team or company when analyzing research data. This inhibited my ability to appeal to specialized audiences and ideas from an unrestricted standpoint.

Discussion. The purpose of this study, then, was to assess the market outlook and customer segments for the ultraviolet inkjet ink market in the form of a marketing plan for Kowa American Corporation. The research conducted addresses pitfalls, industry expansion, audience

demands, and strategies for this international, monomer-producing corporation. The study attempted to explain why the business should focus on specific market groups and provides concrete results that identify the significance of the research for the overall benefit of the company. Further, this body of research bears in mind deviations in customer needs and the strengths and weaknesses of existing suppliers to provide accurate recommendations for investment in the ultraviolet ink industry. It addresses the policies enforced within Kowa's international operations in order to develop a plan to improve the marketing of globally produced specialty chemicals, including specialty acrylate, methacrylate, acrylamide, anhydride monomers, and a variety of other materials. Specific background evidence will follow.

Further Rationale for Continued Research

The Chemical Division of Kowa American Corporation, which specializes in supplying raw materials for paints, coatings, adhesives, sealants, inks, personal care products, and pharmaceuticals, prides itself on custom sourcing inquiries for newer and higher purity chemicals, while also customizing their products based on the needs of prospective customers. The company focusses on leading edge technology, flexible machine technology, application software, and traditional optical technology produces a wide range of products designed to enhance the visual experience and provide vision solutions and diagnostics for all users. Thus, my research study presented a situational breakdown of the current operations, markets, and methods of Kowa from a communications perspective for the sake of appealing to market audiences, examining competitor success and value propositions, rectifying gaps in the industry's advancements, and juxtaposing potential with Sartomer.

In my research, I comment on whether or not the results were expected for each set of results, go into greater depth when explaining findings that were unexpected or especially

profound, and I will note any unusual or unanticipated patterns or trends that emerged from my results and explain their meaning in relation to my research topic. This solidifies the significance and purpose of my investigation, given the potential to compare my findings with supported claims from other studies. It became practical to re-visit key sources already cited in my literature review section, so that a formal and complete discussion section could be formulated. Inclusion of this information provided context and background to the reader, such as Kowa's departments that are unfamiliar with marketing tactics or that of my academic peers. The purpose, then, of including such sections will be to provide evidence for my proposed recommendations. As a result, I was able to help improve the current market situation for Kowa American and highlight its best and worst practices. The formal project includes more general claims about possible conclusions arising from the results and the extent to which they may be proved or disproved in subsequent research. As a result, I chose to frame these ideas as new research questions and hypotheses in my recommendations, for the greater benefit of Kowa.

Fundamentally, I came to explain, predict, and understand the phenomena of ink production, ink usage, and ultraviolet harvesting in a manner that challenges and extends existing knowledge within the limits of critical assumptions. For me, the theoretical framework of my research study attempted to explain why there is a lack of significant progress in the ultraviolet ink market. The definitions and references that I accessed supplemented my relevant scholarly literature, providing evidence of existing theory that may be utilized in the field of ink production and monomer advancements. The theoretical framework for my market analysis demonstrates my understanding of theories and concepts that are relevant to the topic of my research paper and that relate to the broader areas of knowledge being considered in the ink market. This included theoretical assumptions about the chemical and physical boundaries of the

market and frameworks that express hypotheses and methods already in use in ultraviolet research. The applicative nature and proposed theoretical significance of my research in this scientific realm helped to determine the meaning and challenges associated with the ink phenomenon. Once completed, I found that my research undertaking provided myself and the Kowa community with knowledge, understanding, and the confidence to act in more informed and effective ways with regard to the market of interest, or, ultraviolet curable inkjet inks.

Explanation of Ethical Implications

Ethically and methodologically, the best way to collect primary data was through qualitative research. As a result of focusing on critical analysis via primary and secondary qualitative research, I was able to gather an in-depth understanding without using questionnaires to aid the statistical representation of the findings in the study. In order to conduct appropriate primary research, I accessed corporate records of the ultraviolet ink markets via Business Source Complete and similar academic resources to compare the market strengths and weaknesses between Kowa's product development and that of similar monomer producing and ink generating suppliers. I compared the markets and records obtained to decide how to better advise Kowa and its executives on the outlook and proposition for ultraviolet ink manufacturing. Because the final project is scientific in nature, I ensured that the data could be verifiable by other researchers. And, because I was researching from a communications perspective, the results were constructed in a manner that permitted review and replication with certainty by experts in the field, such as current Kowa employees. This certified that the information I gathered was accurate and complete. After providing thorough scientific explanations of the raw data, I set out to compile and analyze my audience and market findings.

Limitations. Though my research is grounded with significant evidence for a scientific, corporate audience (Kowa), the scope of my project became limited, at times, due to the necessary validation and supplemental research, on my behalf, to distinguish between competitive advantages in a foreign market. I am not personally familiar with inkjet ink or printing maneuvers, which required me to make sense of the industry and its potential prior to investigating markets and customer segments. Biases aside, I was able to reach my goals by strictly adhering to my proposed purpose and significance and remaining loyal to my research base and minimal understanding. Though this posed obstacles for me, in terms of making comprehensive recommendations, I was able to provide Kowa with a substantial outline of how they might proceed to set themselves apart from competitors. Because I have only interned with the corporation for a few months, there is much that I have yet to be exposed to, in terms of the operations and values of the company, as well. This poses extensive limitations for me, as I will be unable to make in depth observations regarding the communicative nature of the organization. I was able to access the web content and corporate literature that is used to currently target audience, but, I was unable to access telephone or verbal advertising exchanges that take place at shows and events where inks and coatings are sold. Without this insider perspective, my recommendations may fail to address specific, person-to-person practices that could further benefit Kowa and help it to pull ahead in the transformative inkjet industry.

Additionally, my limited knowledge of technological processes that contribute to the competitors' advantages made my recommendations equally skeletal. In essence, an employee of many years with a chemical or engineering background may have been more suited to make comparative competitive analyses of the company and its market strategies. Though I am confident in my abilities to devise marketing plans and audience appeals based on my

background in communications, I started “from scratch” when I began assessing the market as a whole. Because I only scratched the surface of this industry, Kowa can only use my recommendations for generic, baseline adjustments to their marketing and communications departments. At the very least, Kowa should be aware that it must take my critical assessments of its primary competitor and my acknowledgment of industry gaps to expand its technology in a way that focuses on premature components of the ultraviolet inkjet ink market segment. For Kowa, it is critical to recognize the recommendations in the following segment to maximize market potential and invest in the resources and technology necessary to overcome Sartomer.

Conclusion

General Recommendations for Kowa

In conclusion, my analyses play a significant role in the determination of recommendations for Kowa American. However, limitations, biases, and hesitations aside, I offer several conclusion approaches for use in marketing and audience appeals for this company. Based on the bodies of comprehensive research compiled for this investigation, I recommend that Kowa devise characteristics for success. This condition should relate to whether or not the marketing strategy directly attacks the market leaders and strong competitors. Development of strategic guidelines for changing the company make it more difficult for competitors to compete is critical for the success of Kowa and its affiliates. Marketing approaches should develop a significant and sustainable product and service differentiation, compared to that of competitors. Part of the strategy should include a distribution component, or some other impediment, which can secure early market share gains by preventing competitors from retaliating.

According to my research, a framework should be set forth to determine how methods will be used to evaluate the likely success or failure of a specific marketing strategy under

consideration of competitive trends. In order to successfully appeal to the correct market segments and audiences, marketing strategies should directly “attack” the market leaders and strong competitors to maximize product development and minimize competitor advantages.

More specifically, from a consumer-specific perspective, distinctiveness affects how consumers respond to marketing stimuli through the targeting of individual groups. This means that Kowa should engage in targeted advertising featuring minority versus majority sources. This should lead to different types of effects among target and non-target market members, and consumers should be likely to respond similarly to advertisements that feature majority sources. In contrast, appeals featuring minority sources tend to lead to more divergent thoughts and less concrete evaluation of the corporate message. Accordingly, customers who are being targeted on the basis of a more common, non-distinctive feature will be more likely to make judgments on relevant bases that will benefit Kowa in terms of profit and maximum widespread appeals. Moreover, I suggest that the buyer and sellers’ perceptions of their environment have a major influence on how exchange situations are understood.

Different perceptions are likely to co-exist within a market, which could lead distributors to have different approaches to management and marketing. A number of theories propose somewhat different views about the key dimensions that determine the environment, but, for the purpose of this project, I chose to emphasize the workability of the ultraviolet inkjet ink market. Kowa must recognize that the functioning of markets depends on the number of actors, the asset specificity demanded by producing and exchanging technologies in this segment, and the uncertainty of market outlooks, given its budding expansion. Though continued research and expertise in the field could provide a more complex view of the environment and the scope of the industry, my recommendations aim to primarily hone Kowa’s focus and provide immediate

avenues for change within the company. The characteristics of the environment should be perceived by management, and their meaning should be learned through experience from channels research, the industrial buyer-seller tradition, system assessment, and the resource dependency perspectives of the ultraviolet ink market. Further, I suggest a network approach where competitors in the industry examine the technological climate by accessing competitive literature and drawing comparisons to claims and advancements of others.

Corporations like Kowa should take a newfound, pluralistic approach to their markets to determine why more than one marketing approach can be used in a given industry. To further understand what might influence their competitive success, it is important to discuss the relationship between buyers' offer propositions, the buyers' need structures, and the perceptions each party has of its counterparts. It is essential for Kowa to integrate the seller and buyer in an effort to reflect the reality of marketplace and link perceptions of value to customer segments. By further customizing a unique offer proposition specific to each, Kowa will be triumphant in the competitive ultraviolet inkjet ink industry.

From a communications perspective, I feel that Kowa could enhance its website to appeal to multiple audiences in a variety of information-specific formats. Larger organizations, such as Kowa, have consistently been found to adopt innovations earlier than smaller ones, according to my competitive research. Organizational innovation, then, is not limited by cost or technological means in the case of Kowa American. As a result, investment in a thorough, well-designed web page may provide enough information to meet the complex wants and needs of multiple audiences. As I have already discussed, multiple audiences may introduce conflicting interests and concerns, and, with Kowa's weak marketing base, it may be difficult to anticipate responses to these discrepancies. To maximize competitiveness, enhance its image, strengthen its ties to

current audiences, and reach out to new audiences, Kowa should recognize the size and diversity of audience as a predictor for its financial and technology success. And, the inclusion of a multi-level, highly structured website could fill the gaps of the industry. Because ultraviolet inkjet ink has faced many obstacles and is still a relatively moldable concept, access to information quickly and accurately will minimize the opportunity for competitive advantage by recognizing and capitalizing on gaps in the market. Customer segments should be assessed on a need-to-need basis, and audience approaches should be geared towards individual adaptations as well. Website consideration and audience targeting via digital means would enable Kowa to squelch competitive resources and utilize proposed marketing approaches to their fullest potential.

Final Recommendations

- Grow and develop social media advertising
- Embrace new opportunities for generating leads
- Build and strengthen relationships on digital platforms
- Generate directive advertisements to promote product lines
- Generate publicity through strategic marketing campaigns
- Develop multimedia content that attracts prospects

The success of Kowa's marketing strategies is contingent upon expansive social media use, strong internal and external collaborations and advertising, well established relationships, and multimedia content that satisfies new and existing target audiences and customer segments. Kowa's success will require application of strategic initiatives and objectives, as well as the careful execution of marketing variables. I urge Kowa to invest in marketing campaigns and advertisements in order to reap the benefits of a widespread audience pool, greater publicity, and maximum targeting of prospective buyers through digital media and directive collaborations.

References

- Arkema SA SWOT Analysis. (2016). Arkema SA SWOT Analysis, 1-9.
- Faculty of Engineering: The International Journal of Pharmaceuticals. (2017 Aug 30). 3D printing of tablets using inkjet with UV photoinitiation. Retrieved from <http://www.sciencedirect.com.proxy.ohiolink.edu>.
- Grover, V., & Ramanlal, P. (1999). Six Myths of Information and Markets: Information Technology Networks, Electronic Commerce, and the Battle for Consumer Surplus. *MIS Quarterly*, 23(4), 465-495.
- Hancock, A. (2004). Challenges of UV curable ink-jet printing inks: A formulator's perspective.
- Kotler, P. (2011). Reinventing Marketing to Manage the Environmental Imperative. *Journal of Marketing*, 75(4), 132-135. Retrieved from <http://www.jstor.org/stable/41228615>.
- New Inkjet Ink from Nazdar Ink Technologies offers excellent adhesion. (2017). *Paintindia*, 67(3), 138-139. *Pigment & Resin Technology*, 33(5), 280-286.
- Paint and Coatings Industry. UV-Curable inks market expected to reach \$3.5 billion by 2020. (2015). *Paint & Coatings Industry*, 31(12), 12-14.
- Peterson, I. (1998). Rethinking ink. *Science News*, 153(25), 396-397. Retrieved from <http://www.jstor.org/stable/4010368>.
- Podhajny, R. M. (2002). UV-Curable jet inks, are we there yet? *Paper, Film & Foil Converter*, 76(11), 20.
- Rajput, N. (2015). UV curable inks market expected to increase to \$3.5 Billion worldwide by 2020. *Ink World*, 21(6), 13.
- Robertson, M. (2008). Think big. *American Printer*, 125(8), 16.
- Rothman, F. (1964). Intensive Competitive Marketing. *Journal of Marketing*, 28(3), 10-17.

Savastano, D. (2014). As technology evolves, the ink industry adapts. *Ink World*, 20(2), 6.

Sartomer Annual Report. (2016). EMEA Arkema Report, 1-43. Retrieved from

<http://emea.sartomer.com/export/shared/.content/media/downloads/corporate-documentations/2016-arkema-annual-report.pdf>.

Smithers Group. (2014). Briefing: the market of UV inkjet printing. Retrieved from

<http://www.smitherspira.com/resources/2014/>.

Taylor, C., Franke, G., & Maynard, M. (2000). Attitudes toward Direct Marketing and Its

Regulation: A Comparison of the United States and Japan. *Journal of Public Policy & Marketing*, 19(2), 228-237.