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## INFORMATION SEGMENTS FOR THE PROMOTION OF PROTECTIVE MASKS: DESIGN, MARKETING, PR

Since the beginning of 2020, the issue of personal protection against the dangerous disease COVID-19 has been relevant. One of the simpler precautions recommended by WHO for the general public is wearing a mask. The surge in demand for protective masks has led to severe shortages and higher prices for them. The purpose of this study is to analyze the Kazakhstani market of protective masks using the example of ECOS, which since 2013 has been producing filtering half masks that comply with the register of imported and demanded goods with protection class FFP1, FFP2 and FFP3. Also study their design and the presence of the company in the media, since the success of any company depends on how well the brand is recognized in society. The main direction of scientific research is design, PR, marketing. Any product is based on a design concept, which is as important and necessary as PR when launching new products. PR as an effective tool for marketing communications is getting stronger as information noise grows, competition intensifies and media fragmentation increases. The media act as an intermediary between the company and the end consumer, and indirectly influence the end consumer. The research methodology is based on the methods of collecting primary information and their processing. The value of this work is that students will learn to analyze the design according to key quality criteria and evaluate the product according to its main aspects. Further research in this direction can greatly help designers, PR specialists and others when developing a concept and strategy for the development of new products.

**Key words:** design, PR, media, mask, respirator, design quality criteria.

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### Қорғаныс маскаларын алға жылжытудың ақпараттық сегменттері: дизайн, маркетинг, PR

2020 жылдың басынан бастап COVID-19 қауіпті ауруы алдында жеке қорғаныс мәселесі өзекті болып отыр. ДДҰ халыққа ұсынған қарапайым сақтық шараларының бірі – маска кию. Қорғаныс маскаларына сұраныстың күрт артуы қатаң тапшылыққа және олардың бағасының өсуіне әкелді. Бұл зерттеудің мақсаты – 2013 жылдан бастап FFP1, FFP2 және FFP3 қорғау сыныбы бар импортталған және сұранысқа ие тауарлардың тізіліміне сәйкес келетін фильтрлік маскаларды шығаратын ECOS компаниясының үлгісінде қазақстандық қорғаныс маскалары нарығын талдау. Сондай-ақ, олардың дизайнын және компанияның бұқаралық ақпарат құралдарында болуын қарастыру, өйткені кез келген компанияның жетістігі брендтің қоғамда қаншалықты танымал болуына байланысты. Ғылыми зерттеудің негізгі бағыты – дизайн, PR, маркетинг. Кез келген өнім дизайн тұжырымдамасына негізделген, ол жаңа өнімді шығару кезінде PR сияқты маңызды және қажет. PR маркетингтік коммуникацияның тиімді құралы ретінде ақпараттық шу өсіп, бәсекелестік күшейіп, бұқаралық ақпарат құралдарының бөлінуі өскен сайын күшейе түсуде. БАҚ компания мен түпкілікті тұтынушы арасында делдал ретінде әрекет етеді және түпкілікті тұтынушыға жанама әсер етеді. Зерттеу әдістемесі бастапқы ақпаратты жинау және оларды өңдеу әдістеріне негізделген. Бұл жұмыстың құндылығы – студенттер дизайнды сапаның негізгі критерийлері бойынша талдауға және өнімді оның негізгі аспектілері бойынша бағалауға үйренеді. Осы бағыттағы қосымша зерттеулер дизайнерлерге, PR-ға және басқаларға жаңа өнімді дамыту тұжырымдамасы мен стратегиясын жасауға көп көмектеседі.

**Түйін сөздер:** дизайн, PR, БАҚ, маска, респиратор, дизайн сапасының өлшемдері.

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### **Информационные сегменты продвижения защитных масок: дизайн, маркетинг, PR**

С начала 2020 года актуальным стал вопрос индивидуальной защиты для предотвращения опасного заболевания COVID-19. Одной из простых мер предосторожности, рекомендованной ВОЗ для населения, является ношение маски. Резкое увеличение спроса на защитные маски привело к жесткому дефициту и росту цен на них. Цель данного исследования – проанализировать казахстанский рынок защитных масок на примере компании ECOS, которая с 2013 года производит фильтрующие полумаски, соответствующие реестру импортных товаров с классом защиты FFP1, FFP2 и FFP3. Авторы также изучили дизайн выпускаемой продукции и присутствие компании в средствах массовой информации, так как успешность любой компании зависит от того, насколько бренд узнаваем в обществе. Основное направление научного исследования – дизайн, PR, маркетинг. В основе любой продукции лежит концепция дизайнера, которая также важна и необходима, как PR при запуске новой продукции. PR как эффективный инструмент маркетинговых коммуникаций становится все сильнее по мере роста информационного шума, усиления конкуренции и увеличения фрагментации СМИ. СМИ выступают в качестве посредника между компанией и конечным потребителем, и косвенно воздействуют на конечного потребителя. Методология исследования строится на методах сбора первичной информации и их обработки. Ценность данной работы в том, что студенты научатся анализировать дизайн по ключевым критериям качества и оценивать продукт по основным его аспектам. Дальнейшие исследования в этом направлении могут во многом помочь дизайнерам, пиарщикам и другим лицам при разработке концепции и стратегии развития новой продукции.

**Ключевые слова:** дизайн, PR, СМИ, маска, респиратор, критерии качества дизайнера.

### **Introduction**

The designers' role and situation has changed radically since the days of the lone craftsman, where one person cared for all aspects of the design and sale of a product. 'Today we face disintegration: design is separated from production, marketing, and sales. However, the designer still retains their key integrating role' (Andreasen, 2015, 31-32).

In the past, the word design was as we know it today did not exist. 'Instead, students were taught the underlying sciences, e.g. thermodynamics, solid and fluid mechanics, and control theory. This gave an incomplete view of design' (Andreasen, 2015, 68). Over time the way the word 'design' is used has gradually changed. Along with technological development, different types of design evolved. Nowadays design can be spotted everywhere seamlessly blending with product functionality. Design reaches a large number of people becoming the focal interactive point of the artificial environment.

On an ordinary day, in a short period of time, people come across, come into contact with different types of design – industrial design, interaction design, transport design, future design, spatial design, architectural design, interior design, light design, ceremony design, landscape design, sound design, environmental design, graphic design, web

design, book design, print design, information design, human image design, body art, art design.

Design is omnipresent. People see and hear constantly when talking about the quality and appearance of a product or the simplicity and usability of interactive digital services or systems; when we feel comfortable in the car; when we see the colorful decoration of festivities and celebrations; when we want to present information more convenient and easy to understand; when watching movies we enjoy decorations, clothes, special sound and acoustic effects, and so on. People are constantly interacting with design. The design makes the environment more comfortable, products are more understandable, business is more efficient, and life is better.

Designers determine how different products and services should look and function, moreover in some cases they also decide where to locate the stores with said products and services in order to meet the demand. There is a specific design decision being made behind every form of a lightbulb, jacket pockets, backpack straps, or airplane seat. Hence, consumers' aesthetic pleasure, comfort, and safety depend on the quality of these solutions.

People tend to buy new products, not because of the number of features, but based on their user experiences. Therefore, the role of the designer is to spot inconveniences and aesthetic flaws, to perfect

them, and conceptualize various scenarios of their use. Design shapes the environment, optimizing it, and maximizing the comfort of human existence and activity.

With the development of the Internet, automation, the sharing economy, blockchain technology, the Internet of things, artificial intelligence, design has also evolved. People with design skills respond to new challenges and opportunities for innovation. Design and technology intertwined, being essential parts of each other. The success of startups in recent years is based not only on programming and high technology but also on their design. With the latest advances in the field of artificial intelligence, there are fears that eventually, it can replace humans at their jobs. However, AI cannot perform tasks that require creative thinking, thereby increasing the influence of designers on the world and blurring the scope of the profession.

### Materials and methods

Design serves the businesses and increases their efficiency. According to Tom Kelley products are a complex combination of user needs, technology solutions, and business factors (2000). The introduction of new products is vital for the continued growth of the company. Moreover, some experts believe that new products have to be ten times better than existing products for consumers to switch (Anderson, 2006). Nevertheless, the development of new products is expensive and tends to have a high consumer rejection rate. Since development cost and potential earnings are closely related to development time and to hitting a closing window of opportunity (Cooper, 1998), a good and early decision regarding which concept to proceed with would be extremely valuable.

At the same time, public relations as a form of communication can be used as an effective tool in the marketing of new products. Act as an intermediary between the company and the ultimate consumer. PR is a significant part of all product launches where creativity is an important factor.

The early concept phase in the product development process is characterized by limited knowledge concerning a design parameter's importance, its influence, and its mutual relationships. Concepts from the conceptual phase are evaluated according to pre-established product criteria, which, in rapidly developing markets, may no longer remain relevant (Brown and Eisenhardt 1997, Pfeffer J. and Sutton, 2006). These criteria often fail to articulate and provide measurement for concepts' various design

components. Evaluating, comparing, combining, and deciding which concept to choose is currently accomplished using a combination of subjective criteria, intuition, and social power. The present situation makes the decision-making process depend on situational mood swings, individual negotiation abilities, temporary corporate politics, and personal tastes and preferences (Kahneman, Tversky, 2000).

We see marketing communication as part of marketing and a way to link design to marketing. Marketing communication has PR, which is important when launching a product. The news of a new product itself is not enough to convey information, something additional is needed. Through this study, we want to see if design, as a strategic function in which innovation occurs, can act as "something extra" and create advertising. Through advertising in the media, the company receives an additional dissemination of communication, which, thanks to this, can serve as an effective way of issuing a message.

We decided to use qualitative interviews in the marketing department of the ECOS company that we chose to study, and quantitative data collection on advertising when launching a mask with a qualitative assessment of the content. The reason we decided to use this method is because we want to get primary data that we can study, and a basic statement from the company to understand what factors are behind the result. Information was also collected from the company's website as a supplement to the information.

**The aim** of the article is the evaluation of the existing product design with the application of five major product connection aspects in order to determine the importance of design concepts in manufacturing generic products.

Kazakhstani design is usually criticized for not being broad-spectrum. Its scope is usually limited by logos, signs, advertisements, and packaging. The role of design is generally exterior. Designers do not change the specifics of the company's business and refrain from testing new options. The logo is made as a predictable part of the company, not an element of recognition. These criticisms are characteristic to countries with limited light industry production. However, there are spheres where product design is applied in Kazakhstan, and one of those industries is industrial safety products and personal protective equipment, which gained special relevancy in the current time.

The object of the article is design concepts of respiratory protective masks, one of the essential attributes of present life. Authors analyzed following items: ECOS A 1321K FFP1 NR filter semi-masks

with an integrated activated carbon layer and an exhalation valve; ECOS A 1322K FFP2 NR filter semi-masks with an integrated; ECOS A 1323K FFP3 NR filter semi-masks with an integrated activated carbon layer and an exhalation valve activated.

The information segments of the selected masks were reviewed according to an established progressive structure from key design quality criteria: Social, Environmental, Viability, Process, Function.

These masks cover all established design quality criteria and show correlations with external indicators of success such as participation in such annual events as KIOGE (Kazakhstan International “Oil & Gas” Exhibition), major tenders, product awareness and online presence. This study shows that established design quality criteria can be used to predict user acceptance and future investor expectations.

Having established that the choice of concepts was in the conceptual phase of the product development process, the following research questions arose: What is the main purpose of the product? Are size and weight important? Is the product valid on time? Are shape and color important? Does this product fulfill its purpose in an acceptable manner? Will this one be obsolete in the near future?

## Literature Review

The preliminary literature research resulted in many books, publications, periodicals, reports, websites, and magazine articles. A structured review of the literature on business management and psychology provided additional insight into the common problem of poor decision making.

By exploring the strength and limitations of formal design process models, techniques and tools, viewed in light of human ingenuity and cognition, the book develops a unique design mindset that adds human understanding to the list of techniques and tools required to design. This understanding is translated into useful thinking heuristics included in the book.

An extensive amount of work has been accomplished to create breakthrough products by Jonathan Cagan and Craig M. Vogel (2002). Jonathan Cagan is an expert in product development and design methods early in product development. His research focuses on design theory and methods, product development and strategy, engineering design knowledge, and computational design tools.

The authors also reviewed nonfiction books about design that presented the basic rules of design construction. John Maeda’s *The Laws of Simplicity* outlines the fundamentals of design that deconstructs

the complexities of the design process. Artemy Lebedev *Mandership* covers a vast array of topics related to conceptual design such as trash cans design, text punctuation, public navigation (2018). Lebedev is a currently popular Russian blogger and founder of the Lebedev Design Studio. Erik Spiekermann in *Stop Stealing Sheep & Find Out How Type Works* (2002) demonstrates its use in printed communication by explaining what type is and demonstrating how to select it. Beryl McAlhone’s *A Smile in The Mind* is the book, which has not yet been translated into Russian, about the creative process in advertising and graphic design (1998). McAlhone explores the essential techniques used by designers and illustrators.

Books about design for business deserve special attention. Tim Brown in *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation* talks about the role of design in society and business (2009). Brown shares his experience in creating IDEO products. Their portfolio includes a computer mouse for Apple, Oral B brushes, part of Coca-Cola’s strategy. *Design of Everyday Things* by Donald A. Norman explores how design serves as the communication between object and user (1998).

## Results and Discussion

In order to analyze the design aspects of the chosen products, we need to present their descriptions first. The main purpose of masks is to reduce the risk of airborne particles and prevent them from respiratory infections. There are two types of protective respiratory masks: surgical or medical masks and respirators intended for industrial purposes. Occupational Safety and Health Administration (OSHA) (29 CFR 1910.134) further divides respirators into two major categories: air-purifying respirators, which are used by 95% of the industry (BLS 2003), and the less common atmosphere-supplying respirators (AlGhamri, Murray and Samaranayake, 2013).

The history of modern medical masks can be traced all the way back to early modern Europe, plague doctor costumes that featured a headgear that resembled long birdlike beaks. This particular design was adapted to place inside the beak strong smelling substances such as herbs, dried flowers, or vinegar sponges to fight with so-called miasma in the air. In 1867, the British surgeon Joseph Lister postulated that wounds got infected by the germs that were recently discovered by Louis Pasteur, and doctors gradually started to sterilize their medical equipment and operating theatres. However, it was




only in 1987 that Johann Mikulicz, head of the surgery department of the University of Breslau (now Wrocław, Poland) wore a mask during operation. That same year surgeon Paul Berger in Paris also began wearing a mask in the operating room (Bruno J Strasser, Thomas Schlich, 2020).

Origins of respirators can be traced even further back in history when Gaius Plinius Secundus (AD 23/24-79) described how workers in Roman mines accommodated animal bladder skins to protect from red lead oxide dust. In modern times invention of the respirator is attributed to a French chemistry and physics teacher Jean-François Pilâtre de Rozier, who devised it during his research in the field of gases. Respirators became especially relevant during World War I, the first recorded chemical warfare. In 1915, members of a special unit of the German Army chlorine gas along the defensive perimeters at Ypres, Belgium. This resulted in more than 1000 casualties among French and Algerian soldiers and

around 4000 soldiers were wounded. As the war advanced the opposing sides began to develop primitive gas masks, starting from just tying pieces of fabric around one's nose and mouth. Later the British medical corps devised a wool hood soaked in thiosulfate, sodium bicarbonate, and glycerin. The research and manufacturing of more structured and durable gas masks started near the end of the war in 1917 (Gerard J. Fitzgerald, 2008).

There are eight types of respiratory protective equipment (masks for industrial use) produced by ECOS: ECOS A1321 FFP1 NR filter masks with integrated activated carbon layer, ECOS A 1321K FFP1 NR filter semi-masks with an integrated activated carbon layer and an exhalation valve, ECOS A 1322K FFP2 NR filter semi-masks with an integrated activated carbon layer and an exhalation valve, ECOS A 1323K FFP3 NR filter semi-masks with an integrated activated carbon layer and an exhalation valve.

Table – Scope of masks

Mask Type	Protection degree, operating conditions	Main scope
<p><b>ECOS A1321 FFP1 NR, ECOS A1321K FFP1 NR filter semimasks</b></p> 	<p>can be used to protect the respiratory tract from harmful specific gases and organic substances (to TLV extent), in places where the concentration of solid and non-volatile liquid particles are within the limits of up to 4 TLV, in conditions of low and elevated temperatures from -30 ° C to +70 ° C and relative humidity &lt; 80%.</p>	<p>Construction Food industry Transport Sandblasting, Drilling Cutting Agrochemistry General service works Grinding Work with bulk materials Waste recycling Painting works Agriculture Smog, exhaust fumes</p>
<p><b>ECOS A1322K FFP2 NR filter semimasks</b></p> 	<p>can be used to protect the respiratory tract from harmful specific gases and organic substances (to TLV extent), in places where the concentration of solid and non-volatile liquid particles are within the limits of up to 12 TLV, in conditions of low and elevated temperatures from -30 ° C to +70 ° C and relative humidity &lt; 80%.</p>	<p>Metallurgy; Chemical industry; Mining industry; Construction; General service works; Pharmacology; bacteria; The medicine; Agriculture; Forestry; Welding works</p>
<p><b>ECOS A1323K FFP3 NR filter semimasks</b></p> 	<p>can be used to protect the respiratory tract from harmful specific gases and organic substances (to TLV extent), in places where the concentration of solid and non-volatile liquid particles are within the limits of up to 50 TLV, in conditions of low and elevated temperatures from -30 ° C to +70 ° C and relative humidity &lt; 80%</p>	<p>Metallurgy; Chemical industry; Mining industry; Construction; General service works; Pharmacology; Food industry; Waste recycling; Disinfection; Tobacco production; Painting works; Agriculture; Wood processing industry; Welding works</p>

There are several models of the product development process. In general they can be described by the following three phases: direction, design and development. This process can be modeled as a series of divergent and convergent studies and assessments between concept and knowledge (Hatchuel & Weil, 2003) or current reality and aspirations (Petersen, 2002). Usually this process involves backward loop iterations, which mean that the designing team investigated the solution, eventually found it impracticable, and then look for new directions. At the end of each stage, a decision is made about which solution to use, or perhaps the previous stage needs to be revisited.

At the final conceptual phase and in the first design phase, designers traditionally present their conceptual ideas using images and storytelling techniques, which are followed by criticisms of the engineers. Traditionally, engineers and designers were seen as two opposing teams, and the design process was cyclically repeated between them. It was believed that designers are responsible for creative and artistic factors, aimed at the consumer, while engineers are considered pragmatic and responsible for technical factors, aimed at the production. This is a confrontational and outdated paradigm. To be competitive and sustainable, both parties must articulate aspirations and develop current reality, as it is done in the leading design companies. There, initial concepts emerge from the collaboration of industrial designers and engineers. Within the development team, these concepts are selected using criteria of feasibility and novelty. Comparison, evaluation, combination and decision-making on concepts is currently done using a combination of subjective criteria, intuition and social power.

## Conclusion

Based on research on the latest advances in design consulting, literature reviews, and case studies, the authors came to the following conclusions:

1. Concepts in the product development phase can be measured and linked to design quality cri-

teria. Design quality criteria might influence investor expectations more than brand value. A literature review has also shown that design is a key success parameter, which can surpass marketing efforts.

2. It has been established that when developing new products, it is necessary to take into account external and internal factors. Five design quality criteria have been identified: interface; function; feature; architecture; technology and they are linearly correlated with the conceptual aspect profile. It is shown that the differentiation of product quality refers to the final product; the time limit is due to the constant evolution of the culture that influences the design.

3. It is proved that web links could serve as a trend indicator. That is, online shopping, websites, social media presence can serve as a measure of public awareness, which is an indicator of the effectiveness of external awareness and investor expectations. These trends are integral to the criteria for product design quality, not media hype.

4. It was found that the performance of a product can be predicted and conceptual arguments can be optimized in the following aspects: interface; function; feature; architecture; technology. Concepts can be quantified using the conceptual aspects model. The client's confidence in the concepts is combined with the credibility of the designer behind the concept. The concept is always unique, elements may appear or disappear in it, development may arise spontaneously and does not refer to a specific scheme. A designer must be highly educated, have a holistic and voluminous worldview, which will facilitate competent application in theory and practice. After all, the concept includes a vast array of components; it must be comprehended, formulated, synthesized, and natural. On the one hand, the designer is subordinate to feelings, and on the other hand, the mind and in the concept need to be combined, comprehended, highlight the main thing. The formation of the concept is influenced by the worldview. Design is created by a person and for a person, and the designed product is the answer to a person's need.

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