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INDUSTRIAL DESIGN STUDIOS OF WARSAW: PUSHING FORWARD FOR SOCIALY AND ECOLOGICALLY RESPONSIBLE DESIGN

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ABSTRACT

The aim of this research was to understand the approaches of Polish design studios to project management as well as socially and ecologically responsible design. These issues were investigated through a perspective of Polish design history and today's socioeconomic realities. A qualitative approach was used in this study with interviews as the main research method. Recorded interviews were deciphered and coded according to common themes within the answers. Five prominent industrial design studios based in Warsaw were interviewed and their design projects were analyzed in detail. Common threads among these projects appear to be a natural evolution of the democratic design approach that started in the '60s in Poland and other Baltic countries. The design philosophy, project management, and resulting products suggest that Polish design studios struggle to keep active, competitive, and innovative through ecologically and socially responsible design in spite of the conventional market demand emphasizing styling and form in industrial products. Challenges such as financial limitations, low prices paid for design projects, and having to deal with a broad range of design activities are overcome by using different strategies such as research about local culture and resources, user studies, experimentation with new concepts and materials, professional networking, cooperation with academia, and using national or international funds.

Keywords: Product Design, Project Management, Poland, Social Design, Ecological Design

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INTRODUCTION

Poland has a long tradition of industrial design. The Polish terms *wzornictwo* (design) and *wzornictwo przemysłowe* (industrial design) date back to the 1950s (Wybieralski & Stefanowski, 2007: 40). Actually, the roots of industrial design go back to the end of the 19th century when artists started to use their talents to create functional or industrial objects with aesthetic appeal. Individual artists started to form organized groups such as *Sztuka Stosowana* (Applied Arts) and *Warsztaty Krakowskie* (Krakow Workshops) at the turn of the century. During this period, Art Nouveau, or the Secession Movement was the leading style in art and design. Poland regained its independence after World War I in 1918 but it took about three years until the state started to function effectively with a new constitution. Industrial development experienced many ups and downs until World War II. Nevertheless, Polish design was in a state of intense development.

Artist-designers shaped the design scene in the first years of independent Poland. Some of the most important ones were instructors at the School of Fine Arts in Warsaw and they built the "Ład" cooperative in 1926. This cooperative had an enormous impact on the development of modern Polish design. Some of the cooperative's principles were quality of execution, sincerity of materials used, uncamouflaged and rational construction, and inspiration from folk art. The cooperative worked in the fields of furniture, interior architecture, utensils, ceramics, glass, metalworking, paper objects, and weaving. Ład functioned to a limited extent during WWII. It was reactivated in 1945 as the Interior Architecture Work Cooperative and in 1950 it was transformed into a state-controlled enterprise. Poland was occupied by the Nazi German and Soviet Union forces during WWII. About 20% of the whole population and 38% of the national material property was lost. At the end of the war, Poland was a different country due to significant changes in its ethnic composition, geographical borders, and political status. The non-sovereign Polish People's Republic (PRL) was under the political, military, and economic control of the Soviet Union.

Design in post-WWII Poland was largely shaped by the socialist system imposed by the Soviet Union. This meant that the economy was centrally planned, and the industry was controlled by the state (Mrozek, 2018: 1-2). The Polish market was isolated from the capitalist world to a large extent. Prices and production levels were determined by the master plans of the ruling party (Curtis, 1992: 117). While the industry followed state socialist principles, design education was based on European design schools such as Bauhaus and Ulm. Architectural style during these years mostly followed Socialist Realism despite some resistance mainly from Kraków (Crowley, 1994: 191). Other fields of design, however, did not follow this route. Instead, modernist approaches were sought in many design projects with some exceptions where state control was essential, such as in posters used for Stalinist propaganda.

Even though communist Poland was a non-consumer society, design was regarded as an important element of development. Rather than a tool that encourages consumption or creates profits, it was seen as an instrument with a social mission. This mission involved the cultural sphere, lifestyle of citizens, improved ergonomics, and propaganda (Mrozek, 2018: 35). Thus, the state supported and financed design-related initiatives. Some of the important milestones were laid in the 50s and 60s. The Institute of Industrial Design (IID) was established in Warsaw by Wanda Telakowska in 1950. Her motto "beauty every day for everyone" and the design philosophy of the Institute that aimed for unity of concept, material, function, and beauty, shaped the Institute's activities (Bochińska, 2011: 27). The same year saw the creation of the Faculty of Interior Design at the Academy of Fine Arts in Warsaw. Another important initiative was the establishment of the Association of Industrial Designers in 1963.

The Design and Production Aesthetics Council, founded in 1959, also played an important role in the implementation of industrial design, especially in products aimed for export. This institution, operated through the Chair of the Ministers' Council, authorized industrial companies to create their own design departments in order to modernize industrial products. During these years, Poland's economy was dominated by heavy industry. Designers were involved in

projects regarding the ergonomics of machinery such as the FNC 25/32 milling machine, or developing the visual identity, e.g. for the Oil Products Headquarters (Mrozek, 2018: 30-31). For a short period, namely during the years 1956 to 1960, a higher quality of life was achieved, expressed in the design and manufacturing of products such as radios, domestic appliances, furniture, ready-made clothing, and motorcycles.

The post-Stalinist design scene in Poland can be witnessed through the period's most important design journal *Projekt* (design) which was first published in April 1956. The contributors of this state-sponsored journal practiced a pragmatic modernism, arguing for user-based, socially responsible design (SRD) and advocating avant-garde values (Czerwinski, 2011: 2). The design approach during this period in Poland and other Baltic countries is also known as *democratic design*. Simple and affordable products such as the Kowalski wall unit designed by Czesław Kowalski and a modular bookcase designed by Marian Grabiński are representative examples from this period (Bochińska, 2011: 26). Other well-known products from this period are the Alfa camera designed by Olgierd Rutkowski and Krzysztof Meisner, the Osa M50 Scooter designed by Krzysztof Meisner, Krzysztof Brun, Jerzy Jankowski, and Tadeusz Mathia, the Syrena passenger car produced by FSO, and the Ina Coffee Serving Set designed by Lubomir Tomaszewski (Wybieralski & Stefanowski, 2007: 55-56; Solarz et al., 2017: 44, 48, 54, 57).

After the collapse of the communist regime, which lasted for 44 years, Poland switched its political and economic system to capitalism in a relatively short time. This meant the transformation of everything ranging from manufacturing and distribution of goods to infrastructure, banking and finance systems, transportation, and culture. While state-owned enterprises faced many problems, causing some of them to collapse, many private firms were created from scratch. Design practices had to find new directions during this transformation. Poland became a member of the European Union in 2004. EU membership had important effects on the industry, trade relations, internal consumption, laws, regulations, education, and interaction with other nations. Access to EU funds and the common market provided new challenges and opportunities for the Polish economy. Cooperation of firms with designers grew significantly. Associations representing professional designers, higher education institutions, exhibitions, design fairs, festivals, contests, and magazines helped to disseminate design in Poland. Bottom-up activities helped to create a positive perception of design by businesses, media, and decision makers (Ernyey & Stefanowski, 2018: 13).

What distinguishes Polish design from the international design scene? One of the motivations of the present study is to find some clear answers to this question. As mentioned previously, post-war Polish design was shaped by an industry that was isolated from the competitive Western markets where manufacturing technologies advanced rapidly. Polish designers relied on crafts, applied arts, and traditional manufacturing methods. Some of the characteristic industries where designers played a more significant role were woodworking, printed textiles, glassware, earthenware, and porcelain manufacturing (Jeglinska & Czerniewska, 2017). Probably linked to this tradition, Polish designers are usually very good at providing unusual solutions through simple means, basic materials, and practical constructions, as discussed in the later parts of this study. Some designers like to be inspired by folk motives or local crafts and such clues may be found in their works. On the other hand, many projects commissioned by companies that compete with the international market typically receive concrete design specifications where individual or local approaches are much harder to find (Pawłowski, 2011: 3). Themes including ecology, ergonomics, sustainability, and social responsibility have been always on the agenda of Polish design education for decades. Thus, SRD is well-represented in Polish designer's projects and design philosophy. The Polish market is becoming increasingly sensitive to these issues (Bochińska, 2011: 25-26).

This paper aims to highlight some of the unique aspects of current Polish design practice, performed particularly by small design studios. Studies on Polish design are rarely found in the literature. Most of the available literature has been

published by Polish researchers in the Polish language. A few articles and books have also been published in English. Some of the notable publications on this topic are summarized below. Crowley (1994) analyzed the evolution of Polish design from a historical and sociopolitical point of view. His study documents how wars and political ideologies shaped product design, fashion design, graphic arts and architecture from the 1940s to the 1960s.

In their bilingual book, Wybieralski and Stefanowski discuss various aspects of design, particularly industrial design, through 1918 (Poland's independence) to 1989. This is a comprehensive study which discusses sociopolitical and economic effects on the industry and related efforts in design. Some important products, their designers, and manufacturing facilities have been reviewed. An important remark in this book, which is worth quoting, is about the link between industrial design and the economic system:

Industrial design is inseparably bound to industry in its various forms, and consequently with the market economy system. In its industrial variety design is the true child of capitalism (the market economy) with all of its consequences, including those that contest it and even those that rebel against it. The economic-political model of democratic socialism (e.g. in Scandinavia) is also at heart based on market principles. All the "socialist", artificially centralist ("people's democracies") and totalitarian ("single-party capitalism") models have been failures, and the economies of these countries (Poland's inclusive) collapsed without creating any products significant in design terms (visually, technologically, or in terms of application), disintegrating their material civilization or plunging it into chaos. (Wybieralski and Stefanowski, 2007: 38-39)

Czerwinski (2011) analyzed the Polish design journal *Projekt* published by the main state-sponsored publisher in the years 1956-1970. Following a period of socialist realism (1948-1956), contributors of this journal advocated for avant-garde values in design while ignoring politics. According to the author, *Projekt* attempted to foster user-centered design for the well-being of the people. A pragmatic approach was followed which tolerated authoritarian politics while arguing for user-based, socially conscious design. Through this journal, designers like Andrzej Pawłowski promoted the idea of socially conscious design, also embraced during those years by Tomás Maldonado and the Ulm School of Design (Hochschule für Gestaltung) in Germany.

In her article concerning the Institute of Industrial Design and its activities in Poland, Bochińska (2011) argues that the Institute promoted democratic design since its establishment in the early 1950s by graphic artist and educator Wanda Telakowska. The Institute's current mission is to encourage socially responsible design, which is supported by annual events such as Gdynia Design Days and the Good Design Competition which considers ecology, ergonomics, and corporate social responsibility in its product design evaluation criteria. Bochińska also points out that Polish design education has been emphasizing themes such as ecology, social responsibility, and sustainable development for many years.

Design management is a process that involves various activities ranging from project planning and team creation to concept development, prototype building, and implementation. This process can be used to launch new products, develop innovative solutions, or achieve strategic objectives with the aid of design tools (Vazquez & Bruce, 2002). Studies on design management in Polish firms are rarely found in the English literature. Sońta-Drączkowska and Mrożewski (2020) analyzed the role of project management in product development at new technology-based firms (NTBFs). Their study involved 36 NTBFs from Germany and Poland. The number of employees ranged from 3 to 90. The new product development process (which is a broader concept than product design) was found to be iterative rather than linear, open for experimentation and learning. The industrial scope was mostly information and communications technologies in their study, including software and hardware. Hardware-based firms used prototypes or proof of concept in product development, while software-based firms used lean startup and agile approaches. Lean startup practices are typically outward oriented, aiming to enhance market and satisfy clients. On the other

hand, agile practices are mostly inward oriented, focusing on incremental improvements in existing projects.

Starostka (2012) compared design management activities between Swedish and Polish furniture companies. In-depth interviews and surveys were conducted with marketing managers, CEO's, and designers. The study was limited to "design leaders" or design-oriented companies. This label addresses the top two out of four categories according to attitudes toward design, developed by the Danish Design Center (Björklund et al. 2018):

- Step 1 – Non-design (design is not applied systematically)
- Step 2 – Design as form-giving (design is used as styling in new products)
- Step 3 – Design as process (design is an integrated element in product development)
- Step 4 – Design as strategy (design is a key strategic element in the business model)

Starostka's comparative study indicated that awareness in Polish companies with regard to the importance of design was quite low during the period of research while design was typically accepted to be an essential tool for management in Swedish companies. The majority of Polish companies did not fully understand the role of design in product development. Representatives of Polish companies expressed opinions that design was a very important marketing tool. Most Polish companies perceived the designer as a stylist and designers criticized this approach. Starostka suggested that the majority of Polish companies were formed in the late '80s, funded mainly from private capital. Founders of these companies play a critical role in management and take all critical decisions including those related to design management. On the other hand, designers that work with Swedish companies usually play a critical role in product development; they act as consultants, advisors, and even product leaders.

This study aims to understand the local dynamics of industrial design studios, how they deal with design project management, and how their design philosophies and projects correlate to ecologically and socially responsive design. It is estimated that there are around 50 to 60 design studios that deal with industrial design in Poland and many of them are located in Warsaw. This number excludes architecture, graphic design, interior design, fashion design, and other design fields. The number of large firms that employ designers is reported to be slightly above 10. The total number of designers (excluding architects) in Poland is estimated to be between 5000 and 7000, while only 300 of them are employed as industrial designers (Frejlich, 2010: 2). Five prominent design studios located in Warsaw were investigated in this study by conducting face-to-face interviews. All of these studios put industrial design at the core of their activities. While the scope was limited to Warsaw in particular, and Poland in general, some of the observations derived from this study are quite universal and could be useful for design education and practice. The present study aims to contribute to the literature especially from the perspective of current practices of Polish design with regard to project management and socially responsible design. Case studies conducted with the selected studios discuss these issues based on actual projects that were successfully implemented.

RESEARCH METHODS

A qualitative approach was used during this study. Semi-structured interviews were used to determine project management practices. The selection of design studios was based on recommendation and recognition through design awards. Eighteen questions were asked during face-to-face interviews. Three categories of the interview were: information about the firm, project management, and project details. Interviews were audio recorded with the consent of the respondent. Each studio was represented by one person during the interviews, who also happened to be one of its owners. The five studios analyzed in this study were INNO + NPĐ, Towarzystwo Projektowe, Beza Projekt, KABO & PYĐO, and Studio Rygalik.

The interview recordings were deciphered manually. The deciphered texts were coded according to common keywords within the answers. At least three projects per studio were analyzed in order to witness potentially unique solutions for different cases. Based on this analysis, a common approach to project management and SRD was determined. Different problems related to project management and methods used for tackling them were identified. Additional information about these and other Polish design studios and projects was gathered from the web pages of the design firms, catalogues, brochures, books, and web-based publications of Polish organizations and museums.

Selected products and design solutions were studied during the interview or at the site of installation when possible. The present comments and conclusions were based on a composite evaluation of the information provided during the interviews, our personal observations, case studies, and additional literature. Some highlights of each project are listed in Table 1.

Table 1. Some key features of projects selected for case studies

Design studio	Project name	Design category	Project year	Client	Awards, funds, recognition	Designers
INNO + NPD	Florian unmanned rescue and firefighting vehicle	Product; vehicle	2014	WB Electronics	Co-funded by the National Centre for Research and Development	Maciek Sobczak, Michał Stefanowski
	Biletomat – ticket vending machine	Product, graphic, interface	2013	Infobox	Used as an instructive case study by the IID	Bartosz Borowicz, Michał Stefanowski;
Towarzystwo Projektowe	Municipal information system for Warsaw	System, graphic, product	1996-1998	Municipality of Warsaw	Distinction Award I.D. Magazine (USA) 1999	Grzegorz Niwiński, Jerzy Porębski, Michał Stefanowski
	Chopin's bench	Product; city furniture	2009-2010	Municipality of Warsaw	Recommended in many tourist guides as an attraction	Barbara Dobrzyńska, Grzegorz Niwiński, Jerzy Porębski
Beza Projekt	Milk and honey	Promotional product	2011	Ministry of Foreign Affairs	Winner, competition of the Ministry; 2011 Złoty Orzeł Prize in "Direct Mail"	Anna Łoskiewicz-Zakrzewska, Zofia Strumiłło-Sukiennik
	The Nest	Interior, product	2018	The Nest	Featured in many interior design magazines	Anna Łoskiewicz-Zakrzewska, Zofia Strumiłło-Sukiennik
KABO & PYDO	Ergoline watering system	Product	2015	Cellfast	Dobry Wzór 2015; Good Design 2016; Must Have 2015; Red Dot 2015; Top Design 2016	Tomasz Pydo, Katarzyna Borkowska
	Bujaki Fairytale	Product	2018	KBT	Funded by the Polish Agency for Enterprise Development (PARP)	Tomasz Pydo, Katarzyna Borkowska, Małgorzata Załuska, Ewa Nowak, Jarosław Markowicz
Studio Rygalik	Furniture and interior design for the Polin Museum	Product, interior	2013	City of Warsaw and Ministry of Culture	Tomek Rygalik received the title "Designer of the Year 2015" awarded by the IID due to his recognizable style especially furniture	Tomek Rygalik
	Raw	Product, furniture	2006	Moroso	Prototype was exhibited in London which attracted the attention of the Italian firm Moroso	Tomek Rygalik

RESULTS AND DISCUSSION

Design Project Management and the Design Process

Each studio has its own network of designers, producers, and craftsmen who are invited to collaborate on different types of projects. These five studios, which define their main area of activity as industrial design, actually work in various fields such as product, interior, furniture, graphic, interface, and packaging design. In order to better understand how various projects were planned and implemented, we asked each studio to go over some of the previous projects and explain details that may depend on various factors such as the size, context, user, duration, complexity, technology, budget, partners, and legal issues. Below, a summary of our observations and information provided through the interviews are presented regarding these issues.

The number of employees in the studios ranged from 2 to 7, including the owners. This is a typical size for most industrial design studios in Poland where the maximum number of full-time employees is normally below 10. For small-scale projects, these numbers may be sufficient but for large-scale projects that require cooperation with experts from other fields such as engineering or healthcare and for projects that require detailed market and user research, larger teams should be involved. Depending on the scale of each project, design studios enlarge their project team through short-term contracts, using their network of designers and experts. Several of the respondents had close ties with universities because they were teaching at the Faculty of Design in Warsaw. Thus, they had a good chance of working with skillful designers.

Ideally, the design process starts with a brief developed by the client and ends with product implementation. However, the interviews revealed that there are many variants of the process. More established companies know the design process well and prepare a clear, useful brief. However, briefs prepared by companies with insufficient knowledge of the design process are inadequate to describe the commissioned project. In that case, the design studios need to work with their client, explain the design process, and help to prepare the brief. If the project is complicated or involves a very new domain, the client may not be able to write a brief. This was the case for certain projects commissioned by municipalities, which do not have much experience in working with industrial designers. In this case, the designers have to be involved in the development of the brief. This is a risky and contradictory process for each party. Sometimes the design studio may conduct user research for the client and the results may cause the initial brief to be changed.

The design process may also work in completely different ways. One such possibility is entering into a design competition that requires implementation of a product by the design firm winning the competition. In this case, the design firm needs to find the proper manufacturers for the product and its components or assume the role of an industrial manufacturer. According to one of the studios that was interviewed, the proper manufacturer is one that understands very well what the design firm wants and how the materialized product will look and feel like when it is completed. This type of harmonious relationship requires years of collaboration, mutual trust, and efficient communication.

The other possibility highlighted by one of the respondents is that the design firm may have some innovative ideas to propose to suitable manufacturers. Ambitious firms may be interested in such challenging projects for reasons of prestige or if they see a benefit for competitiveness, yet this type of cooperation comes about infrequently.

Once the brief is ready, the project design team needs to be established. We investigated the types of skills needed and how the teams were formed. The common denominator in the answers is that the required skills depend on the type of project. For most projects, 2D and 3D drawing skills are required involving hand sketching and software such as Rhino, SolidWorks, AutoCAD, SketchUp, and KeyShot. Project members need to be open to collaboration and teamwork.

Technical knowledge including materials and production technologies is a useful asset. Typically, team members are university graduates from industrial design departments while some start earlier in a project as an intern. Regarding the question about skills, K. Borkowska commented as follows:

I think each person has differences in skills. So we focus on our team's skills. It is most difficult to find people with technical skills and also (who) can draw something very aesthetic. I think these levels connected in one person is rare. (K. Borkowska, personal communication, December 19, 2018)

There are various legal issues related to implementation and intellectual property (IP) rights. According to Polish law, the designers own the personal rights to an industrial design in the territory of Poland once they register for it (Piechocki & Siciński, 2017: 5). The commercial rights can be transferred or licensed to a client. In the case of licensing, the client needs to consult the owner of the IP for any changes after the completion of a project. This rule is strictly followed only in the case of official institutions, for instance municipalities. Many firms prefer to obtain the rights to make future changes in a project for practical reasons. If there is any infringement regarding a completed project, usually the client makes claims against the infringer to protect their own commercial rights. In some cases, the design studio and the client act together to protect their mutual rights.

The Polish law also grants full IP rights to students once they complete a project during higher education. Thus, design studios or firms employing students during a professional project may have to sign a special type of contract to clarify IP issues especially if the student's school is also involved in that particular project, for example a graduation project. Similarly, firms or institutions that organize design competitions open to students need to clearly express that the author's rights will not belong to the competitors. Even in such a case, if the project is commercialized, a separate contract needs to be signed between the institution and the student at that point.

Several projects from each studio were analyzed and their details were discussed during the interviews. A short summary of two projects per studio is presented for a better understanding of the challenges in professional design activities.

INNO + NPD emerged from the combination of two small design studios. They operate in four main areas: product design, packaging, branding, and wayfinding systems. Many of their projects involve technical or engineering solutions as an important part of the whole.

Florian Unmanned Rescue and Firefighting Vehicle. *INNO + NPD* have a long-lasting relationship with *WB Electronics*, the leading company in the Polish defense sector. Together they completed three projects between 2009 and 2014. This is a good example of collaboration between engineers and designers. One designer from *INNO + NPD* needed to work for several days at the producer's facilities with engineers in order to find a common ground and develop a suitable design language. The last project, completed in 2014, regarded an unmanned rescue and firefighting vehicle (Figure 1). The vehicle was designed to be controlled remotely by fire brigades in hazardous places. Tools for pushing, shoveling, and cutting were placed in front of the vehicle. Cameras, sensors, and reflectors can be mounted on the upper frame for efficient maneuvering (Ernyey & Stefanowski, 2018: 53). The structure of the vehicle was developed by the Military University of Technology in Warsaw while the electronics system and the body structure of the vehicle were designed by *WB Electronics* and *INNO + NPD*, respectively. A great deal of efficient communication and coordination was necessary for the successful completion of the project.



Figure 1. Maciek Sobczak, Michał Stefanowski, *Florian unmanned rescue and firefighting vehicle*, 2014, WB Electronics, Ożarów Mazowiecki

Biletomat – Ticket Vending Machine. This project involved the design of the housing of an automatic ticket vending machine as well as the functional and graphical interface design (Figure 2). The client was Infobox, a company that produces information kiosks. This product was installed for the first time at the Silesia Park in Chorzow. The interface design needed to address the needs of visually impaired people in addition to the common user. Other requirements were simple construction, intuitive operation, minimalist and economical graphics, modular construction, and the ability to customize the device for a specific function.



Figure 2. Bartosz Borowicz, Michał Stefanowski; *Biletomat - ticket vending machine*, 2013, INFOBOX, Cieszyn

The stages of the project were as follows:

1. Brief: The topic, scope, and general assumptions were specified by members of Infobox and INNO+NPD. Once an agreement was found on price, duration, and project stages, a contract was signed between the designer and the customer.
2. Conceptual design: This stage involved market analysis, overview of competing products, and selection of a design strategy based on advantages and disadvantages. Three preliminary concepts were presented and one of them was selected by the client.

3. Final project: The chosen concept was refined, details were fine-tuned, and the design documentation was presented for executive documentation to be prepared by the client.

4. Implementation: INNO + NPD supervised the creation of executive documentation, implementation of prototypes, and final production.

This model of cooperation was quite successful and later it was used as an instructive case study by the IID for designers and potential clients within the framework of the project "Design-Business-Profit" (2014).

Towarzystwo Projektowe: Translated as "Design Society", this is a design studio led by two partners. They specialize in furnishing public space, information systems, product design, interior design, exhibition design, and utility graphics. The studio is skilled in combining product and graphic design as depicted in the following two case studies.

Municipal Information System for Warsaw. One of their most complex projects involved the design of the information system for Warsaw. The system consists of a variety of signs, maps, pictograms, and brochures (Figure 3). The information system helps pedestrians and drivers to navigate and find their way around the city. It also helps them to collect information about the city, its history, and tourist attractions. One of the difficulties faced during the project was the definition of districts and their boundaries. The designers wanted to recreate the historical local names to renew the tradition of Warsaw but they faced many difficulties because Warsaw was destroyed during WWII and most of the names only remained in people's minds. *Towarzystwo Projektowe* employed some local citizens who knew the city well and some historians as consultants to solve this problem. Another difficulty was the lack of a national standard for local information apart from common traffic signs. This category of information had to be introduced into the Polish law at that time. The new standards developed by the designers were approved by the Ministry of Transport and for the first time applied in Warsaw. Afterwards, all other Polish cities used these standards.



Figure 3. Grzegorz Niwinski, Jerzy Porebski, Michał Stefanowski, *Municipal information system for Warsaw*, 1996-1998, Warsaw

Chopin's Bench. In 2009, the city authorities of Warsaw decided to commission new city furniture for the Old Town district in honor of the Chopin Year festivities of 2010. However, there was a big challenge: the restoration of the streets was just finished and there were strict regulations about surfaces; no holes were to be drilled on them. In order to avoid drilling, which would normally be needed to

fix the bench to a given location, the designers decided to make the bench quite heavy. Thus, black granite was used for the body (Figure 4). The design studio used a creative idea for this project: they designed a bench that plays Chopin's compositions when a button is pressed. Inscriptions, engraved plans, and QR codes provide information about Chopin and the site's relevance to him. The bench does not need any power connections since it uses batteries.



Figure 4. Barbara Dobrzynska, Grzegorz Niwinski, Jerzy Porebski, *Chopin's bench*, 2009, Warsaw

Beza Projekt emerged from the cooperation of two classmates in design competitions. This design studio is distinguished from others by its emphasis on upcycling, crafts, local history, and culture.

Milk and Honey. Their first major project started as a competition of the Ministry of Foreign Affairs regarding souvenirs for VIP to commemorate the Polish Presidency of the European Union in 2011. *Beza Projekt* won this competition. The studio had to produce 7000 sets for the Ministry to be offered to very important politicians. The product is a set composed of a jar of Polish honey, a milk glass, and a spoon (Figure 5). There is an image of a drop on the jar which is made of a thermochromic glaze to indicate the correct temperature for consumption. After winning the competition, the design studio suddenly had to also bear the role of a producer. Many factories had to be visited to produce each part and many samples had to be prepared for optimum results. Some materials and parts could not be sourced from Poland. The thermochromic pigments for the glaze were bought from England and the jars were procured from Spain. After dealing with many details and manufacturing problems, the project was completed successfully.



Figure 5. Anna Łoskiewicz-Zakrzewska, Zofia Strumiłło-Sukiennik, *Milk and Honey*, 2011, Ministry of Foreign Affairs, Warsaw

The Nest. This is a contemporary co-working space occupying the floors of a building located in central Warsaw. The project involved interior design of each floor for flexible working possibilities. The design studio selected an aquamarine hue for the interiors to match Nest's branding. A range of matching colors, patterns, textures, and organic materials were selected to create a vivid, club-like, and comfortable atmosphere. Interior design projects for Beza Projekt mean more than designing the interior space and finding suitable materials, furniture, or wallpapers. They prefer to design matching furniture, textiles, tiles, carpets, and wallpapers, introducing innovative solutions that involve crafts. During this project new marble-like wallpapers were designed to cover the columns (Figure 6). Two furniture groups were specially designed for the co-working spaces. The floor plans employed round corners to balance the angular architecture of the building. Overall, the attractive and functional interiors added significant value as well as recognition to the Nest.



Figure 6. Beza Projekt, *The Nest* co-working space, 2018, Warsaw

KABO & PYDO: The name of this design studio was derived from the names of its founders Katarzyna Borkowska and Tomasz Pydo. KABO & PYDO was established through a grant from the EU under the program of Entrepreneurship in Creative Sectors at Kozminski University.

Watering System Ergoline. Their first big project was a watering system for the Polish company Cellfast (Figure 7). This was a two-year project that involved 16 different products, although collaboration between the designers and Cellfast continues. These products brought many international and national awards to the designers (See Table 1). The success of the design studio stems from detailed user research. Observations with actual users of gardening products provided useful information to implement in the new products. Working on a set of related products such as gardening tools with the same design perspective provided some meaningful improvements in product design, ergonomics, manufacturing, and standardization.

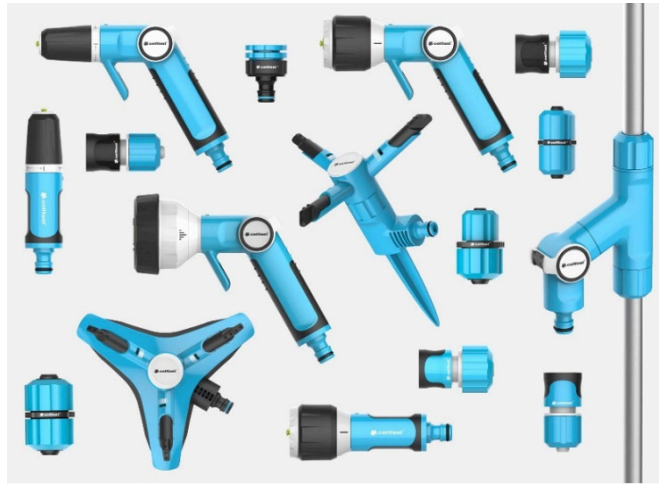


Figure 7. Tomasz Pydo, Katarzyna Borkowska, *Watering system Ergo Line*, 2016, Cellfast, Stalowa Wola

Bujaki Fairytale. KBT, an international producer of playground equipment, asked for the design of a series of rocking playground toys such as animals and cars. In the beginning, KBT requested extensive user research to be undertaken by KABO & PYDO. The designers collaborated with analysts and researchers to conduct several types of user research. Workshops were conducted with children to talk about their games and what is important for them in playgrounds. Their behavior was observed in playgrounds. Conversations with parents helped to clarify their point of view related to playground equipment. Using all this information, KABO & PYDO developed some concepts. All prototypes were tested by children before launching the products. One of the outstanding features of *Bujaki Fairytale* is the 3D head of animals created from three plane surfaces (Figure 8). The minimalist form aims to stimulate children's imagination. The toys were designed based on a gender-neutral principle.



Figure 8. Tomasz Pydo, Katarzyna Borkowska, Małgorzata Zaluska, Ewa Nowak, Jarosław Markowicz, *Bujaki Fairytale* playground toys, 2018, KBT, Warsaw

Studio Rygalik: Tomek Rygalik is a designer with international acclaim. He started his design practice in London and then moved to Warsaw to establish Studio Rygalik with his partner Gosia Rygalik. The design studio remains competitive through innovation and experimentation with materials and processes.

Furniture and Interior Design for the Polin Museum of the History of Polish Jews. One of the projects of this studio is linked to a landmark museum in Warsaw.

The impressive building for the Polin Museum was designed by Lahdelma & Mahlamäki Architects. Studio Rygalik was commissioned to design the furniture for the public spaces in this museum. The challenge was to design the interior within the context of the architecture and the museum. The architects used a special narrative in the museum and Studio Rygalik aimed to follow this narrative while designing and placing the furniture dedicated to this particular architecture (Figure 9).



Figure 9. Studio Rygalik, Furniture and interior design for the Polin Museum, 2014, Warsaw.

Raw. The majority of projects are initiated by clients approaching the design studio based on their own needs. However, one unique way the studio works is in the opposite direction. Studio Rygalik likes to experiment with ideas and play with materials, processes, and concepts. Although such projects occupy only a very small fraction of their whole portfolio, some unusual products were born through this approach. A good example is the Raw chair. This project started with the question: what would happen if we could get rid of all the parts present within a chair? Tomek Rygalik experimented with leather to answer this question. He discovered that it is possible to wet mold leather. When it is thick enough, shaped and dried leather acts as a structural element. With the correct temperatures, drying times, and stitching techniques, the chair made only from leather was strong enough to carry a person. These experiments led to the design of Raw (Figure 10), which was exhibited in London and got the attention of Moroso, a well-known upholstery company in Italy. Moroso produced approximately 100 Raw chairs in the years 2006-2007. Raw is a good example of the firm's philosophy of designing products where the user can appreciate the function, the form, and the material at once, without the interference of technology or a beautified skin.



Figure 10. Tomek Rygalik, "Raw" armchairs, 2006, Moroso, Udine, Italy.

SOCIALLY RESPONSIBLE DESIGN

A straightforward definition of socially responsible design is "the use of design to address social, environmental, economic, and political issues" (Davey et al., 2005: 2). The consideration of social and environmental responsibility by the design community can be traced back to the Ulm Institute of Design founded in 1955. Two of the leading figures of the school, Max Bill and Tomás Maldonado, although disagreeing in many other aspects of design pedagogy, strongly emphasized the importance of social awareness in design as opposed to streamline styling, advocated by American star designers of the time (Betts 1998, 74). Another important proponent of social design is Victor Papanek who is well-known for his 1972 book *Design for the Real World* (Papanek, 1972: 1, 336) where he harshly criticized the industrial design practice that contributed to unsafe, low-quality, and environmentally harmful products. Instead, he proposed several types of activities where designers can focus on, including design for developing countries using inexpensive, low-tech solutions, design for disabled people, design for the elderly, medical products, and environmentally sustainable products (Margolin, 1998: 83-84; Davey, 2005: 3).

As discussed in the introduction, the Post-Stalinist period in Poland witnessed the diffusion of pragmatic modernism in the design of many mass-produced consumer goods while considering social and environmental issues. The necessity to find simple and low-cost solutions due to the limited availability of materials and manufacturing technologies during this period also contributed to the design of more efficient and lean products. Although the political and economic conditions of Poland have changed considerably since the '50s, it is still possible to discover some of the design approaches of those years. It is also logical to assume that many of the social and environmental problems that threaten the world today caused by consumerism and savage capitalism bother Polish designers, so they take active responsibility in order to contribute to their solutions. It is possible to find some clues about such intentions in the design philosophies and projects of design studios. While each firm has its own formulation of design philosophy, one common goal is to find environmentally friendly, long-lasting, and sustainable solutions. The needs of the client are obviously one of the main concerns. Clearly, many clients prefer out of the ordinary, good-looking design solutions. Some clients may ignore social or environmental aspects of projects or they simply may find such solutions infeasible. However, design studios are aware that they have the possibility of choosing clients or projects that fit their own design philosophy. Furthermore, they also know that they can inform or sometimes train their clients to be on the same line regarding issues such as ethics, ecology, and social responsibility.

INNO+NPD's design philosophy is mirrored in M. Stefanowski's words:

My approach comes from previous times. The situation was completely different, there was lack of everything. We had to get to the point in a very simple way. Simple technologies, simple construction, simple materials. I think this is still my approach. ... What is important is the user. It's our tradition of education. The styling, of course it exists, we know that the product has to be desirable, but we don't start with it. We start with production, durability, the sense of the product. There's one thing that we don't, at the moment, as you see we design a lot of industrial things, they are not lifestyle projects, so we don't have to deal so much with styling and fashion. (M. Stefanowski's, personal communication, November 7, 2018)

Obviously, there is a strong resistance to consumerism, styling and ephemeral fashion in these words.

One project directly related to SRD is the comprehensive identity design for the WellDone brand. WellDone is a series of products developed during design workshops conducted by the Academy of Fine Arts in Warsaw and the Design Faculty of Holon Institute of Technology, Israel. Products developed by students and instructors during these workshops were donated to the Być Razem Social Entrepreneurship Development Foundation. These products were produced by the foundation and sold for the vocational activation of unemployed and socially excluded people (Ernyey & Stefanowski 2018, 103). This project is a good example of cooperation and social innovation that involved design, education, production, and marketing. INNO + NPD was involved in this project both during the professional identity design phase (Figure 11) as well as through Stefanowski's contribution to the workshops as one of the supervisors in 2009.



Figure 11. Maciek Sobczak, Michał Stefanowski, Weronika Woch, Maciej Konopka, *WellDone packaging and branding*, 2009, WellDone, Warsaw.

The design philosophy of *Towarzystwo Projektowe* is explained by G. Niwiński as follows:

It is written in our mind. I think that we are trying to avoid ordinary products for the marketplace. I personally am not happy with what's going on in the market. From the social and ecological point of view. I'm very glad that we find a place for design out of the market little bit, which is very important for the people, to organize people's life, and it is ethically safe, you know. You are not forced to design another item which is useless, temporary, disposable. Something which is more stable and more reasonable from the ethical, ecological, social point of view. That's the kind of philosophy we have. (G. Niwiński, personal communication, November 16, 2018)

The Vistula District information system project has several features that merit discussion under SRD. This district is a strip of greenery along both banks of the Vistula River that passes through Warsaw, which was made available to the public for tourism and recreation. The information system is needed to inform the public about directions, routes for pedestrians and bicycles, historical facts and elements of nature such as local birds and plants. Historical information provided

on the boards is a good way to preserve a sense of belonging and continuity of tradition.

Traditionally, the location near the river is shown by the distance from the mouth of the Przemsza River to the Vistula, which is considered "0 km". For example, the number 513 means that you are 513 km far from the beginning of the river (Figure 12). The designers used carved steel plates to use these signs and also added meters in order to create a reference point, for instance for those who want to meet at some specific point around these banks. Thus, they were able to preserve a local tradition and add more value to the signage for the public.



Figure 12. Jakub Marzoch, Grzegorz Niwinski, Jerzy Porebski, *Information boards by the Vistula River showing river mileage in kilometers and meters*, 2016-2017, Vistula River, Warsaw.

K. Borkowska representing KABO & PYDO expressed their design philosophy as follows:

We look for innovative solutions in every design process. We treat design as a tool to achieve business goals of enterprises and to meet the needs of users. Sustainable development, relationships with people, intangible assets and social aspects of products are important to us. Through our work, we want to improve the environment of man, animals and plants. (K. Borkowska, personal communication, December 19, 2018)

The Ergo XS hose reel is a good example of KABO & PYDO's SRD. One of its important advantages is its small size and low weight, making the product convenient and easy to use by women and the elderly. Another example in this context is Bujaki Fairytale rocking toy discussed earlier (Figure 8). The use of 2D layers to represent 3D animals is an innovative and eco-friendly approach, using less material. The gender-neutral design of this toy indicates the studio's respect for ethical and social issues.

Z. Strumiłło-Sukiennik gave this answer regarding the design philosophy of Beza Projekt:

Finding in those narrow possibilities the extreme result, pushing it is the work of the designer, I think. In terms of technology, sociology, local context and so on, this is for us very important, to find this kind of story behind each project, and those are the grounds I talk about. When you have those grounds, when you have this set of tools that you can work with, then it's easier to develop the projects in the right direction. (Z. Strumiłło-Sukiennik, personal communication, November 29, 2018)

The following statement gives a good indication of the social awareness of this designer:

Bazaars generally in Poland are the big subject that are not explored and not, in my opinion, developed. There are big bazaars in Warsaw. They are sort of neglected. The city is not putting enough money to support it. It is a really interesting place of different people, different products. I worked at the Academy of Fine Arts for some time and couple of times this was the subject for students. For example, in Mirowska, I would first think of all the market people from the outside to the inside of the building. It would be my first thought. But they wanted to turn it to a dinery place. The same thing happened here (Hala Koszyki). I mean it's nicely done, you can feel this elegance, but there is no feeling of a market whatsoever. Actually, in this area, this used to be one place for older people to go, they don't have it anymore. So, it was like totally cutting off this possibility, this social kind of nice aspect of it. I think there are possibilities of joining these. (Z. Strumiłło-Sukiennik, personal communication, November 29, 2018)

During the interview, Strumiłło-Sukiennik explained their view on waste, specifically pointing out that they don't like it. Beza Projekt designed many products made from waste materials such as marble fragments. The Patch Projekt is an innovative approach where small elements like metal brackets are provided to the user. With the help of these patches, the user can combine pieces of new or used materials to form a new table or fix a damaged chair. It is a flexible approach that also involves the user. Furthermore, the project is open for development by anyone interested. This project received the Design Alive Award in 2013.

T. Rygalik's answer is a good indication of SRD:

Longevity and simplicity are at the heart of our thinking and this relates to doing less but better things in a way. It's also related to our belief in sustainability but not in a recycling mode but in a "using things longer" mode. So, we try to work with structures and solutions, also material solutions that can prolong the usability of products that we design. A lot of the products that we design are driven by that. They are not driven by style or concept but we always come with this thought of how to make sure that this can be used longer and age beautifully or deteriorate less. So, don't follow the fuss or fashion. (T. Rygalik's, personal communication, December 19, 2018)

Studio Rygalik's direct involvement with social innovation can be found in *Sobole Foundation* founded by Gosia and Tomek Rygalik in the rural settlement of Sobole in 2016. The foundation uses the historic manor and park complex of the village for activities related to design, culture, and education. One of the several social innovation projects organized by the foundation was Holis international workshop with the slogan: "Social Innovation in the Countryside Through Design, Business, Technology and Other Fields". The 2018 Holis workshop aimed to develop ideas to reactivate the countryside and fight rural exodus. Through such activities, the foundation is able to demonstrate different faces of design and make people aware that design is a tool for problem solving.

The design philosophies and various projects of the studios clearly represent the emphasis on ethical, social, and environmental responsibility in design activities. While each approach is unique, all of them channel towards SRD while they reveal the desire to avoid useless, temporary, consumerist design projects. The strong emphasis on SRD and a similar attitude by all the respondents is very encouraging for the design world and for the industry. It should be reminded that three of the respondents are also teaching at the Faculty of Design, Academy of Fine Arts in Warsaw, which may be the reason for similar approaches regarding social awareness in design. On the other hand, this faculty is the main school of design in Warsaw and one of the leading institutions of design education in Poland. Thus, its influence on the design approach or philosophy of Polish designers would not be surprising.

CONCLUSION

Studies on product design and design management in Polish companies are very rare in the literature. Some of the available studies focus on the design history of

Poland and on companies that work with designers for new product development. The present study is a contribution to the literature by providing a rich insight on project management activities of design studios in Warsaw and generally in Poland. Such studios are faced with some challenges such as financial limitations, unfamiliarity of many clients with design, low prices paid for design projects in the Polish market, and having to deal with a broad range of design activities in contrast to specialized design work in many European countries. Nevertheless, they overcome these limitations by using different strategies such as research about local culture and resources, user studies, experimentation with new concepts and materials, workshops with potential users, professional networking, cooperation with academia, and using national or international funds. A small number of full-time designers are supported by a flexible network of designers, craftspeople, engineers, and producers according to the scale and complexity of each project. This is a common strategy that seems to reduce financial risks for the studios while being able to cope with a wide range of challenging projects.

Our analysis of design philosophies and details of some completed projects indicated that the design studios have a strong inclination towards SRD. This can be understood from their will to selectively work on projects that help to solve social and environmental problems and preserve historical, traditional, or cultural features of the Polish society. Important examples of socially responsible design include WellDone - a design project aimed to contribute to the vocational improvement of unemployed and socially excluded people; Warsaw Municipal Information System – signs, maps, pictograms, and brochures that preserve the collective memory of Warsaw that was tried to be destroyed during WWII, and product design using waste materials such as marble fragments, which help to reduce waste while creating added value for the economy.

The scope of this study was limited to design studios in Warsaw. Further studies that include design studios from other parts of Poland and product design conducted in companies would provide a more detailed picture of current industrial design in Poland. Future research related to SRD such as case studies about social problems and potential contributions with the help of design, studies on successful projects that involve design in solving these problems, and theoretical studies on modeling SRD processes are also recommended.

Contribution of Authors

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Conflict of Interest

There is no potential conflict of interest.

Ethics Committee Declaration

Ethics Committee approval was granted for this research on 28.03.2023 by the IUE Ethics Committee.

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Figure 6: Beza Projekt, *The Nest co-working space*, 2018, Warsaw. From the Authors' archive.

Figure 7: Tomasz Pydo, Katarzyna Borkowska, *Watering system Ergo Line*, 2016, Cellfast, Stalowa Wola. Courtesy of Kabo & Pydo.

Figure 8: Tomasz Pydo, Katarzyna Borkowska, Małgorzata Załuska, Ewa Nowak, Jarosław Markowicz, *Bujaki Fairytale playground toys*, 2018, KBT, Warsaw. Courtesy of Kabo & Pydo.

Figure 9: Studio Rygalik, *Furniture and interior design for the Polin Museum*, 2014, Warsaw. <https://www.studiorygalik.com/projects/polin/> (06.05.2023). Courtesy of Studio Rygalik.

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