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## DESIGN AS THE FOUNDATION OF INNOVATIVE ECONOMIC STRATEGY (ON THE EXAMPLE OF CITY OF KHARKIV)

*The existing approaches to design definition as the part of innovation process of strategy development are summarized. The emphasis is given to the process of design influence on the successful innovation and commercialization realization. On the base of international experience analyses and systematization the directions for the future design development in Kharkiv and Ukraine are suggested. Policies and attitudes in six jurisdictions that have moved to leverage their design strength for economic development are also briefly outlined in current research. The international experience for design promotion in different countries is analyzed. The special attention is given to the suggestions for the potential clients, for the government, and for the design industry. Tremendous attention is paid to start-up firms in high-technology industries. The application of design standards is suggested on the example of City of Kharkiv. On the base of international experience the suggestions for post-secondary design education, and its extending downwards to the primary and secondary levels, and upwards to post-graduate programs are proposed. The action plan for design industry development which should include imperatives to: launch a design for commercialization program; create a brand strategy; form a design educator's network; and, establish a model design policy for government is suggested.*

**Key words:** *design, innovative economic strategy, design education, integrated design thinking, advances design.*

### Introduction

In advanced economies, the generation of new ideas and the translation of ideas into innovative products and services of superior quality is the primary way economic value added. Adding value to products and improving the efficiency of production processes through the use of advanced design and new technologies, whether in manufacturing or the delivery of services presents tremendous potential for the city.

Design is an activity that “translates an idea into a blueprint for something useful”. As such, it has tremendous importance: it is an integral part of the innovations that economic policy makers increasingly see as vital; it has application in sectors and industries across the economy; it has the capacity to make products and processes more environmentally sustainable; and, it contributes to quality of place and quality of life in cities and regions.

The purpose of this study is to systemize the existing approaches to design definition as the part of innovation process. In particular, we show how successful innovation and commercialization involves design throughout – from conception (idea) to final product (something useful).

### Literature Review

In accordance with the UK Design Council the definition states that design is: an activity that translates

an idea into a blueprint for something useful, whether it's a car, a building, a graphic, a service or a process. The important part is the translation of the idea, though design's ability to spark the idea in the first place shouldn't be overlooked [1].

As such, it is user-focused and, depending on what is being designed, takes into account questions of ergonomics, social context, materials science, as well as aesthetics. These considerations are then built on by the designer with “a mixture of creativity and commercial insight” [5-9]. And when seen in this broader light we get an indication of design's importance and innovative potential.

Business Week magazine recently wrote that “when people talked about innovation in the '90s, they really meant technology. When people talk about innovation in this decade, they really mean design” [2].

“Design can be a key facilitator” of innovation says Bettina Von Stamm, head of the Innovation Exchange at the London Business School, “if it is embedded into the organization's culture” [3].

Roger Martin, Dean of the University of Toronto's Rotman School of Management, echoes this sentiment. To get the full benefit of design, he says, firms shouldn't simply hire designers, but should also try to understand the problem-solving methods that make them so valuable in the innovation process. By “embracing design-shop approaches,” like role

flexibility, collaboration, willingness to modify products, and creative thinking about “what might be,” companies improve their chances of success [4]. They end up not just designing products but also ‘designing decisions’ to be more user-oriented; user in this case meaning all those within the organization whose “subsequent actions are shaped and constrained by a given decision” [5]. Well-designed corporate decisions are intuitively obvious, says Martin, and make the firm more dynamic as a result.

There for it remains to be recognized that the local stock of designers and design ideas is a fundamental part of economic growth.

## **Results and Discussion**

Kharkiv is the leading design center within Ukraine. Kharkiv has a huge concentration of designers. The design workforce here has been able to grow so rapidly largely because of the education and training opportunities that exist within the city.

The new generation of design innovators should answer the questions:

- What will the next generation of consumers need?
- How can we apply state-of-the-art-technology and knowledge of natural resources to develop new products and processes that will reduce environmental impacts?
- How can we develop a generic model for managing design resources effectively in smaller businesses?

The modern international trend is the instruction of the interdisciplinary approach, particularly linkages with management education, which is vitally important for design students to develop entrepreneurial skills. In particular, since design’s benefits are still largely unrecognized by potential clients, it is important that designers can trumpet their own capabilities, understand the business side of projects they are involved in, and communicate design concepts in a way that clients can relate to.

The as yet unrealized opportunity to support and take full advantage of design in Kharkiv contrasts starkly with some other locations. Policies and attitudes in six jurisdictions that have moved to leverage their design strength for economic development are also briefly outlined in current research.

Starting in the early 1990s with the formation of the Korean Institute for Design Promotion, and substantially built upon later in the decade after the Asian financial crisis, the Korean government has made massive investments to promote design on both the demand and supply sides of the economy. Seeking to reinvigorate their manufacturing sector and develop

home-grown original brand manufacturers (OBMs), the national government provided more design education, created incentive programs for design investments, and organized a nationwide design week. It is unclear to what degree these initiatives are responsible for the success and rapid growth over the same time period of companies like Samsung, LG and Hyundai given that these companies were investing heavily in design on their own accord. But certainly the timing is more than coincidental [4-9].

Design has been an economic policy issue in the UK at least since the Design Council (DC) was formed after World War II. This organization continues to be the primary mechanism through which the national government works to leverage design’s economic potential.

Danish design is recognized around the world and has a storied tradition, but government support is relatively new. While policy direction is still being ironed out, Denmark did institute the quite innovative and unique Icebreaker Program, which provided SMEs with financial support to undertake design investments. The requirement was that the company must never have employed a designer before. More than half of the participating firms said they would continue to make design a routine element of their business. Importantly, the private sector is also involved in a coordinated manner in the promotion of Danish design as the Federation of Danish Industries has undertaken a design investment benchmarking effort.

While specific policies are difficult to locate, China has clearly identified design as a key activity in its rapidly growing economy. The country now reportedly has over 400 post-secondary design schools (a 2,000% increase since the mid 1980s) that graduate over 10,000 students each year. In combination with low wages and cheap currency, this situation has designers and stakeholders in other countries worried. However, indications are that China has been unable to adopt a world- leading position because their design is not sufficiently innovative. Curriculum is rigid and many manufacturers still rely on copying.

There is no direct support for the American design sector to speak of yet the U.S. boasts some of the most renowned design consultancies, like IDEO and ZIBA, and design-based brands, like Apple, Gap, Cadillac, Gillette, and Motorola, in the world. The lesson to take from the American example appears then to be from the clients who have deemed large design investments necessary. However, to suggest that there was no leadership on the part of government in getting American design sector to where it is now is incorrect. Large amounts of indirect funding for design research delivered primarily through the military and universities

laid the groundwork that the private sector picked up on. The best examples are the design elements that helped advance the personal computer, developed by Xerox and Apple but first conceived of in government-funded research centers.

## Conclusions

To summarize our suggestions for the future design development in Kharkiv and Ukraine are divided into three types: suggestions for potential clients, for government, and for the design industry.

### For Potential Clients

If Ukraine is to leverage the benefits of design, particularly the economic benefits, leadership must be provided by industry. As has happened in countries like Korea and the U.S., the Ukrainian private sector must invest time to learn about the potential of design, and resources to realize this potential. While also spilling over to benefit the public, the dividends of these time and resource commitments will accrue to firms and investors.

The following recommendations offer some ideas on how this can be accomplished.

1. For firms: make a concerted effort to investigate the benefits of design and explore opportunities to incorporate it into all stages of output development in order to eliminate the market failure of imperfect information, and thus help Kharkiv and Ukraine fully capture the benefits of design, firms make take the initiative to inform themselves. Although reluctance and ineffective use of design are still common in Ukraine, studies in several countries show that the earlier and more deeply firms involve designers and design thinking, the larger they can expect the returns to be. More research is emerging in this area and firms will be well served to follow it closely, contribute to it, and take the findings to heart. They should begin now to involve design expertise in their organizational structures, and apply it from the earliest stages of output development. Moreover, leadership must also come from institutions related to the private sector.

2. For investors: as a part of due diligence, examine whether design is part of the long term business plan when considering providing capital. In recent economic development research, tremendous attention is paid to start-up firms in high-technology industries. These firms are widely seen as the primary source of the innovations that will keep regional economies competitive. But because of the tremendous amount of capital required to commercialize products, the venture capital funds and investors who are able to provide this capital can exert a significant amount of influence. This recommendation is borrowed from the UK Design Council who recognized the implication that it is as important for investors as it is for output-producing firms, if not more so, to inform themselves

about the benefits of design. With this information they can help firms use the capital provided to integrate design services and modes of thinking effectively, and thus improve the chance that their investment is successful.

### For Government

The recommendations above are primarily intended to correct the imperfect information that exists within the market for design. We expect that as research emerges and the private sector seeks it out, firms will recognize what design can lend to their innovative efforts, product development and business growth, and will start to make additional design investments on their own behalf. Yet as these decisions will still be based on the private benefits the firms expect, investment will still not be sufficient to capture the spillovers, or public benefits, of good design. Here, government has a role to play. The following recommendations will help obtain best value for the public by working to improve information and capture desirable spillovers. Unless otherwise noted, they are directed towards both the national and local governments.

3. Increase awareness of design's economic potential by incorporating it into public sector innovation and commercialization strategies. All of our research and comparables indicate that the economic benefits design helps leverage can only be fully realized with increased awareness. The first order of business for economic development policy makers at senior orders of government is therefore to add discussion of design to their innovation and commercialization strategies. What is currently missing from these strategies is an explanation of the feedback loops in the R&D process and design's role in turning both radical and incremental new ideas into tangible outputs that people value. Specifically, at the national level such discussion should be added to the Achieving Excellence document and a representative of the design sector should be on Industry Ukrainian's Expert Panel on Commercialization. Locally, as the policy focus of the new Ministry of Research and Innovation is developed, it should similarly involve the design sector. It must also be noted that at all orders of government, making design an integral part of economic development strategies does not mean that it should be outside the purview of other Ministries or departments. The benefits of good design are found within the cultural, social and environmental spheres as well.

4. Once innovation strategies include design, build on this by developing specific support programs. When design, innovation and commercialization are equated with each other, it will provide the impetus to then develop specific initiatives aimed at increasing design activity and capturing the inherent spillovers. Support for innovation has mainly come in the form of public research funding, and more recently has included

funding for technology transfer activities to get this research commercialized. Returns on these efforts stand to improve if programs are directed towards developing value-added outputs through design. Options include: providing firms with tax credits or subsidies to strategically incorporate design services; funding programs that teach businesses and designers how to work together; and, strategically placing design providers or consultants in incubators, science parks and convergence centers. To determine the ideal combination of options will require further study of the particularities of design in Ukraine.

5. Support more research that quantifies the economic and broader impacts of design. In times of fiscal restraint, we do not expect the provincial and federal governments to undertake policy initiatives that involve extensive funding impulsively. As mentioned, their first step should be to increase awareness. While that is happening though, senior orders of government should partner with the City of Kharkiv to identify the particularities of the local design sector, and to study the role of design and creativity further in the current economic context. The information gained will be useful both for economic development policy makers and for firms who are considering design investments. The research we envision is of two types:

a. Detailed case studies that provide specific analysis of firms and governments agencies that have invested in quality design and incorporated it into product or process development. These will help tell the story of what the design process entails in a very practical way. Also, highlighting firms that have successfully integrated design thinking will likely get the attention of their competitors.

b. Broader, long-term econometric analysis of the type that has been conducted in other countries, that measures the overall value of design investments. Part of this effort must be determining appropriate measurement variables as replication of existing studies may not be ideal. One way that the government could support this type of research is to have Statistics Ukraine add questions about design investments to existing manufacturing and innovation surveys.

6. Become model clients of design excellence through the adoption of standards and the increased use of competitions with design criteria. It is intuitive that an effective way to demonstrate the benefits of design, and to thereby improve available information, is to lead by example. As major purchasers of goods and services, governments have the ability to advance design quality and appreciation. They can become model clients to the private sector by showing how design can improve quality and efficiency in the delivery of public services. Procurement policies that include standards for design excellence should be adopted to help deliver better schools, hospitals and workplaces; contribute to

environmental sustainability; and reduce costs. Where possible, request for proposal competitions should include design criteria. The application of design standards is as important for the City of Kharkiv as it is for senior orders of government. For example, parks and buildings on City-owned land, and urban form in general, must be designed well to attract people and businesses and to raise the quality of life for residents. These benefits to the public can only come from coordinated and stringent design requirements or review processes. The City's planning and urban design departments do obviously try to ensure that built form and public spaces are designed well, but Council should adopt measures that strengthen their ability to do so.

7. Continue support of post-secondary design education, and extend it downwards to the primary and secondary levels, and upwards to post-graduate programs. The principal form of support that government has offered to the design sector is post-secondary education funding. The payoff of having a variety of strong diploma and degree programs in the design fields, particularly at colleges and universities in the Toronto area, is evident from the number of able graduates ready to contribute their skills to projects here and abroad. The current situation in the United States further shows the dividends that initial government investment in design know-how can bring when industry starts to recognize the potential benefits of using it. But the provincial government should build on their support of design education by expanding its scope; first, design elements can be added to primary and secondary school education in order to develop problem-solving skills and appreciation of good design from an early age; second, more Master's level programs must be developed to envision the future possibilities of design and build on undergraduate training for immediate needs and markets; and finally, more interdisciplinary study can be encouraged to allow design students to develop their entrepreneurial knowledge and to allow students in other fields, such as management and engineering, to gain a greater understanding of design.

8. Recognize that the strong design sector is a key attribute of Toronto's economy and highlight it when promoting the city, province and country abroad. Many countries, regions and cities have capitalized on their designers by promoting their work externally. Such a strategy helps build a strong reputation for local design that gets attached to all domestic products. Qualitative research indicates that Toronto designers are already exporting a large amount of their work and have been able to develop a reputation for quality work internationally. Ukrainian firms should be encouraged to invest more in local design services, but government should also be supporting designers' efforts to export their work, particularly as the market for design, like

most markets, becomes global in scope.

For the Design Industry

The design industry accepts its own responsibility to make design work to its greatest potential for Ukraine and Kharkiv.

9. Although they produce different classes of outputs, all of the design fields are essentially participating in the same activity by creating visual representations of ideas. It is not simply the design occupations but rather this common activity that is under-recognized. By using this commonality to present a unified message, the design industry is in a much better position to get its issues heard. Through their extensive labour force study, DIAC recognized the need for designers to become more entrepreneurial and coordinated in advocacy and promotion to generate the support and involvement of both industry and government in advancing design. Their action plan includes imperatives to: launch a design for commercialization program; create a brand strategy; form a design educators network; and, establish a model design policy for government.

10. Examine the currently existing design support infrastructure and explore ways that it might be strengthened Design Exchange are very valuable components of the infrastructure that currently exists in Kharkiv to support designers and their clients, and to foster an appreciation of design amongst the public. As such, they should each take steps to ensure that this infrastructure is being put to use as effectively as possible and should constantly seek ways to solidify their work plans and financial structures.

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## ДИЗАЙН ЯК ОСНОВА ІННОВАЦІЙНОЇ ЕКОНОМІЧНОЇ СТРАТЕГІЇ (НА ПРИКЛАДІ МІСТА ХАРКОВА)

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Систематизовано існуючі підходи до визначення дизайну як важливої складової інноваційного процесу розробки стратегії. Увага приділяється оцінці впливу процесу дизайну на успішне впровадження і комерціалізацію інновацій. На основі аналізу та систематизації міжнародного досвіду визначено напрями для подальшого розвитку дизайну в місті Харкові та в Україні. Коротко викладені політика та відносини в шести країнах, які використовували дизайн як конкурентна перевага для економічного розвитку. Проаналізовано міжнародний досвід просування дизайну в різних країнах. Особливу увагу приділено пропозиціям для потенційних клієнтів, для державних органів та для індустрії дизайну. Увага приділяється фірмам - початківцям у високотехнологічних галузях промисловості. Застосування стандартів дизайну проектування пропонується на прикладі міста Харкова. На основі міжнародного досвіду запропоновані напрями розвитку дизайн-освіти з його розширенням до первинного та вторинного рівня, і аспірантури. Запропоновано план дій з розвитку індустрії дизайну, які повинен включати такі компоненти: запуск проекту для комерціалізації програми; створення стратегії бренду; формування мережі освітніх послуг; модель політики дизайну для регіональних органів.

**Ключові слова:** дизайн, інноваційна економічна стратегія, освіта в дизайні, інтегроване мислення в дизайні, прогресивний дизайн.