

Iran's contemporary industrial design education & practice

Promotional
Paper

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Introduction to Industrial Design & its process

Industrial Design (ID) is generally defined as the professional service of creating and developing innovative concepts and precise specifications that optimize the function, value and appearance of products. The beauty of design, however, is the fact that it takes form when it crosses different cultures; which makes the design, a total serendipity¹ and remarkable phenomenon. As indicated, products are designed to satisfy sets of different requirements, including users' cultural preferences. To deliver these preferences, design students must develop, through their formal design education, the essential skills so that a conversation with the intended user can be established. Such expertise firstly depends on, a thorough understanding of users' wants and needs and secondly, an appropriate translation of this understanding into desired qualities of products.

As a result, industrial designers should have a good grasp of how design works; i.e., the design process. Industrial design process is the process through which a product or service concept is developed for users' identified needs and wants. Even though there are a number of different industrial design processes, ranging from very personal to organizational; all industrial design processes have stages in common, depicted in the following diagram. This model is called the "Triple Diamond Design Process" and as it consists of 6Ds (Discover, Define, Develop, Deliver, Deploy, and Digest), it is also called 6D Design Process. The first diamond (Discover & Define Stages), where the very core of users' needs and requirements must be thoroughly understood by industrial designers, is of prime importance in many design projects.

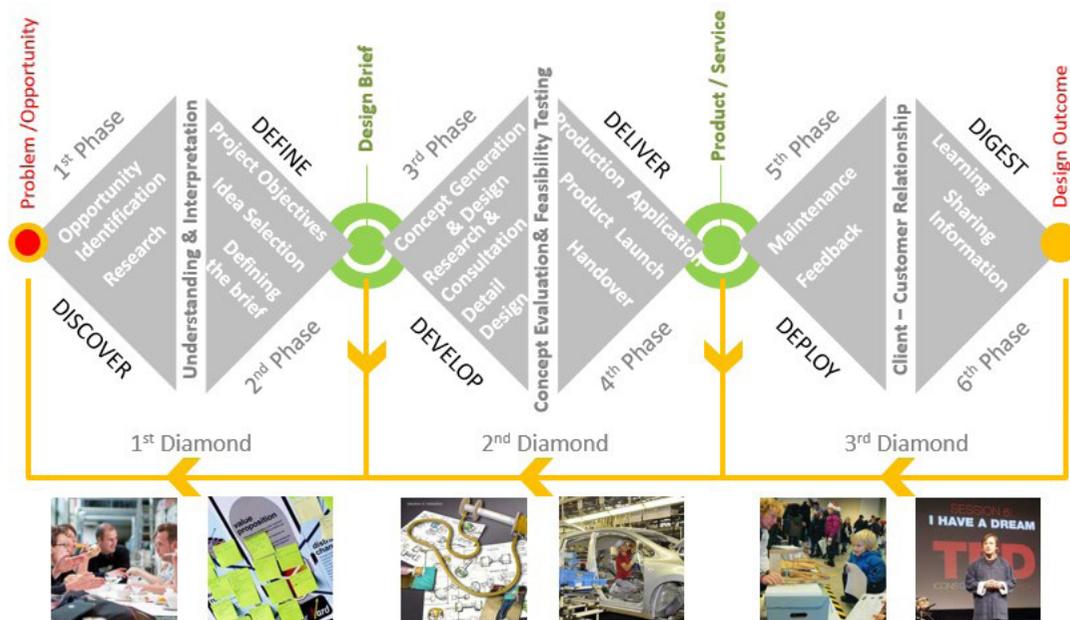


Figure 1. The diagram of 6D Industrial Design Process

Iran early industrialization

The first wave of modernization in Iran began in the mid-19th century during the reign of the Qajar ruler Nasser-al-Din Shah. His Prime Minister Amir Kabir, followed Western methods in science, technology and education and, therewith his other social, political and economic reforms, founded Dar-al Fonoon (Iran's first modern university) & the Majma'-e Dar-al Sanayeh (the Polytechnic School of Crafts), where well-known artists taught students a number of traditional craft skills and modern techniques of design and making. By 1900, attempts to introduce modern factories in Iran, for manufacturing exportable goods, failed due to Iran's inexperienced workforce and underdeveloped transportation system. However, local craftsmen had the facilities and skills required to produce a wide variety of single-material goods (like cooking pots and braziers, kettles, water decanters, trays, samovars, coffee urns, and also all sorts of furniture such as tables, chairs, beds, etc.) for local consumption and use. Large copper boilers for public bathes were also made by more industrialized

workshops. Oil was discovered in 1908, and five years later, the world's largest oil refinery plant was built in Iran, Abadan. The oil revenue boosted the country's economy and provided the required wealth for the industrialization of Iran to begin. The second wave of Iran's industrialization and economic modernization, initiated in the Pahlavi I & II Eras (1925 onward till 1979), numerous factories, like "Iran National", "Arj", "Azmayesh", and "Ardel", were established to produce consumer goods (such as matches, sugar, textiles, glass, etc.) and durables like cars, gas-cookers, refrigerators, and fans. Accordingly, a need for industrial designers who were, not only familiar with the industrial processes of manufacturing, but also aware of social and cultural contexts of Iran, was emerged by the industry to appreciate local needs and preferences of Iranian users. So, the 1st generation of Iranian industrial designers (E.g.: Vazguen Minasian Filipos—shortly called "Flipo"—, employed by Arj Factory) were brought into the picture in this era to play their crucial role as the industrial and cultural intermediaries.

Nonetheless, Iranian design has never been a recent or

modern idea: “Design Thinking”, a process shared amongst all kinds of design, has been around in Persia since ancient times. There is a huge number of artistic, industrial and architectural instances of invention and innovation, proving that the Persian (the Iranian) have been using the principles of good design in architecture, musical instruments, landscape, products, clothes, etc.: For instance, “Ba’dgir” (a traditional wind structure used for passive air-conditioning of buildings in deserts), famous Persian /Iranian Gar-

dens (symbolizes the idea of an earthly paradise), Qanat (one of a series of well-like vertical shafts, connected by gently sloping tunnels as a reliable supply of water for human settlements and irrigation in hot, arid, and semi-arid climates) and “Giveh” (a kind of soft, comfortable, durable and hand-woven-top shoe) are just examples of using design thinking and sustainability principles in products and architecture when there has not been any forms of formal design education in ancient times.



Figure 2. “Giveh”: a kind of soft, comfortable, durable and hand-woven-top footwear

Table 1. Iranian universities that offer Industrial Design programs

#	Logo	Universities	State/Non-state	Years~	
				UG	PG
1		University of Tehran	State University	1983	1993
2		University of Art Tehran	State University	1986	1994
3		Alzahra University Tehran	State University	1986	2010
4		Iran University of Science and Technology Tehran	State University	1993	2008
5		Islamic Azad University Tehran	Non-state	1993	1995
6		Tabriz Islamic Art University	State University	1999	2005
7		Islamic Azad University Mashahd	Non-state	2005	-
8		Amirkabir University of Technology Tehran	State University	-	2007
9		Isfahan University of Art	State University	2007	-
10		Kish-island International Campus (KIC), University of Tehran	Non-state	2007	2007
11		Semnan University	State University	2009	-
12		Bu-Ali Sina University Hamedan	State University	2014	-
13		Farabi International Campus (FIC), University of Art Tehran	Non-state	2014	2014

Industrial Design Education

The emergence of the academic education of industrial design in Iran is almost recent and followed by the growth of industrialization and economic modernization. The academic education of design was initially started at the University of Tehran, Faculty of Fine Arts, in 1969 and just some years later, design program was established at the Faculty of Decorative Arts; the present University of Art. However, the education of industrial design, as a distinctive division of design, was started at the Faculty of Fine Arts in 1983 and later in 1986, at the University of Art. Since then, many other state and non-state universities started to offer industrial design program at both undergraduate and post-graduate levels, including: Alzahra University, Iran University of Science and Technology (IUST), Islamic Azad University, Tabriz Islamic Art University, Amirkabir University of Technology (AUT), Isfahan University of Art, Kish-island International Campus (KIC), Semnan University, Bu-Ali Sina University, and Farabi International Campus (FIC). Table 1 presents the universities at which industrial design program is being offered. Collectively, around 13 state and non-state universities offer the program.

The curriculum of industrial design has been issued by the Iranian Ministry of Science, Research and Technology (MSRT) and all educational institutions must abide by the curriculum. As a result, the industrial design education in Iran is harmoniously centralized and nationalized by the MSRT. The Bachelor of Industrial Design program in Iran is a 4-years fulltime degree in which 135 Units of Credit (UoC) must be successfully passed. Students are selected from a huge pool of potential candidates based on their results from a nation-wide test, called "Concour"; a post-diploma nationwide entrance examination held annually by the Iranian National Organization for Educational Testing (NOET). Industrial design students are selected in a two-stage, semi-focused examination: at the first stage, candidates' general competences are measured. Those accepted from the first round, will be advised to sit for the second test; where, their professional merits (design skills) go under careful scrutiny. Due to the high demand of industrial design as a university program, there formed a number of private schools (E.g. 3rd Design Academy) offering skills and pieces of knowledge for competitors. These private academies offer subjects related to design skills necessary for succeeding in the national test. Courses include: Hybrid sketching, Ergonomics, Materials and Manufacturing methods and even Specialized English. Scientific Olympiads have been annually held by NOET and by 2016, 20 National Scientific Olympiads in varied fields for Iranian students were held. Industrial Design Olympiad, however was introduced in 2006 for the very first time. Industrial Design Junior students and those who take part in the Master of ID Entrance Test are eligible to sit for the ID National Olympiad Test. Among all benefits and paybacks, the gold winners are eligible to enter any Master's program under the category they took part in without taking the compulsory entrance test and to do their obligatory military service between 3 to 10 months where the standard service usually takes 2 years to be completed.

The structure of the ID curriculum consists of six major subject areas as follows:

1. Design Communication (30 UoC which accounts for

22% of the degree requirements with subjects such as: mockups, rendering, photography, sculpture, sketching, technical drafting, computer aided design)

2. Design Studio & Design Studies (46 UoC which accounts for 33% of the degree requirements with subjects such as: visual arts, form & space, design fundamentals, design history, design process, packaging, ergonomics, environmental design, design works evaluation, design for today & future, furniture design, bionic design, Islamic design)

3. Science, Technology & Engineering (27 UoC which accounts for 19% of the degree requirements with subjects such as: applied math, geometry, physics, materials & manufacturing methods, technical basics, electricity, machine details, hydraulics & pneumatics)

4. Business (5 UoC which accounts for 4% of the degree requirements with subjects such as: industrial sociology, production management)

5. General Education (20 UoC which accounts for 14% of the degree requirements with subjects such as: Persian, English, Islamic education/ literature/ morals/ history, physical education)

6. Dissertation + Industry Internship (11 UoC which finally accounts for 8% of the education undergraduate industrial design students receive during their course of study).

Universities are not the only places that the educational materials for industrial designers are produced. Iran's industrial design also receives supports from multiple sources including ID journals, portals, associations, events, awards, ID Weeks, Jam, talks, competitions and also the private sector: there are two major Industrial Design specialized journals in Iran: Dastavard and 4BAQ. Dastavard is the name of the first Iranian industrial design student magazine, being published since 1990 at the University of Art. The name refers to something which can be created by hand that designers are very good at, implying freehand sketching or making physical models. The other seasonal industrial design magazine is "4BAQ", being published since 2009. 4BAQ imaginatively alludes to four seasonal gardens of design. Research papers, pertaining to all aspects of art and design are usually submitted to research journals such as "Name-ye-Honar" (Letter of Art), "Honarha-ye-Ziba" (Fine Arts journal), GJSET (Global Journal of Science, Engineering and Technology), and "Art of Packaging". There are also a number of Iranian ID portals, claimed to provide the latest and the most relevant information in Persian to Iranian industrial designers. "ID Reporter" & "ID News" are two Tehran-based sharing platforms, respectively established in 2010 & 2007. They not only circulate information to a wider community of Iranian industrial designers, but also they have instigated numerous initiatives such as "Design Workshops", "Clean Earth Online Workshop", "Tehran Service Jam" and also "Tehran Sustainability Jam". The Iranian Industrial Designers Association (IIDA) was once founded back in 1992 to promote the practice and education of industrial design in Iran, but shortly after, was left unattended by its original founders. Since then, no national professional ID association is established. During the first National Service Design Conference in Iran in 2015, it is announced that the Iranian Association of Service Designers (IASD) will

be established. Iran's ID Lecturers Society (IDLS) was established in 2016 to promote ID academic community through addressing issues and fostering the benefits of all ID lecturers across the nation. Furthermore, almost all universities that offer ID program, have their own student association. In Iran, a student association, usually affiliated with the university's Deputy of Cultural Affairs, is run by a group of students who enrolled at the program. The student association is missioned to play an important role in the university life by bringing together like-minded students to engage in activities the society seeks to promote. The University of Art's ID Students Scientific Association (UAIDSSA) & the University of Tehran's ID Students Scientific Association (UTIDSSA) are amongst most active student societies in Iran.

There has been a number of well-established ID events in Iran: "ID Specialized Talk Series", is amongst the oldest, held on a regular basis by the Department of Industrial Design, University of Art; "ID GAP" held every now and then by the School of Industrial Design, Faculty of Urban Planning & Architecture, Iran's University of Science & Technology. Here, "GAP" is not referred as an English term, it is; however, a Persian word; meaning "chat", "conversation", or "dialogue" as the series provide a podium for putting subject matters on the table unrestricted. In March 2013, the University of Art held the longest yet notable ID event in Iran ever: the 1st Tehran Design Week (TDW). TDW was a week-long event, comprising of workshops, Design fair & show, Shops, Talks and Pechakucha sessions. Pechakucha, a Japanese term, equal to English chit-chat, is a presentation style in which 20 slides are shown for 20 seconds each (400 seconds in total). With this format of presentation, multiple speakers are able to present yet have to keep their talks concise and fast-paced. Iranian industrial designers have constantly tried to follow and adapt state-of-the-art technologies, methods, knowledge, information and approaches in their practice to the extent possible.



Figure 3. The 1st Tehran Design Week, Closing Ceremony, University of Art, March 2013

Tehran Sustainability Jam 2014 is part of the Global Sustainability Jam. "Jam" is a program in which all interested parties around the globe come together online, bringing their instruments, skills, and open mind so as to start jamming around a theme. Participants' ideas are bounced off other people in the Global Jam, and feedback will be circulating by originators of ideas. Together, something is built that none of jammers could have built alone. At the same time, new ideas are learnt and shared.

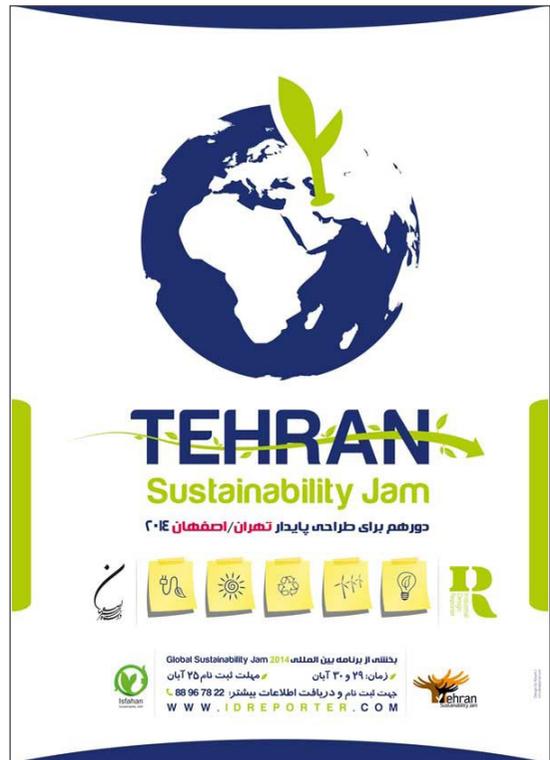


Figure 4. Tehran Sustainability Jam Poster, 2014



Figure 5. 1st DesignCamp Award Poster, 2011

Design competitions appeal to many young industrial design students, simply because they are officially recognized and can receive awards as well as socializing during the events, while putting all their trainings, talents and skills to the test. Many ID competitions have been held by

state universities, industry sectors, or even individuals at different levels in Iran. For instance, the University of Art held the 1st nation-wide Design Camp Award in 2011. ID students participated in the main camp of the competition were asked to design a brand name & package for a company whose main business was related to importing and selling jewelries. Another well-known design competition is “One-Day Sketching”, being held by the UTIDSSA (University of Tehran Industrial Design Students’ Scientific Association). This design competition was initially commenced as a limited design event for industrial design students gathering, but as the time passed, it turned into a nation-wide, well-established design platform with mass media reflections. “BASTEHA” is Iran’s first packaging online platform to exhibit packaging design artworks from design students, manufacturers, professionals and basically everybody who is interested in sharing their packaging concepts.



Figure 6. Basteha’s 1st Gala Night: Winner Announcement, Oct. 26th, 2014

Industrial Design Firms

Diverse fields of design, such as product design, packaging design, jewelry design, interior design, transportation design, service design, interaction design, experience design, urban furniture design, industrial graphics and even brand design, attract Industrial design graduates. They work either as independent freelance designers or are employed by a design or manufacturing company. Moreover, there are a number of ID companies in Iran; however, the number of ID companies is insignificant, compared to the number of ID graduates. Some Tehran-based design studios are Axon Innovation, Ekas, Dokmeh Design Studio, and Forminic are amongst well-established Iranian ID firms.

There are a number of reasons for few established industrial design firms in Iran. One main reason pertains to the very nature of Iran’s industrial methods of mass-production: Iran’s industry mainly concerns with the later stages of production process, i.e., making without designing, whereas if manufacturing companies had taken the liability of designing products from scratch, a lot more ID firms would have required to be founded. That also justifies why many of industrial designers are attracted either to the area of interior design to exchange their general design capabilities into the quick money, thanks to the vast number of residential building construction projects and prevalent house refurbishment requests in Iran or to creating their own brands and small-scale production, like what “Toujou

Design Studio” founded for; an ID design brand involving in the design and production of gift ideas and wedding accessories or Dokmeh Design Studio, founded in 2006: in Farsi, Dokmeh, means button. This Tehran-based design studio creates hand-made bags, accessories and promotional products, seeking to reach stylish, unique and creative leather items on to the shop shelves. This is also true with many other industrial designers, trying to put their entrepreneurial efforts into creating their own brands, including the jewelry design studios “Zohreh Pahlevan” and “Zamos”.

Industrial Design in Iran is now trying to strengthen its nexuses with the industry as well as the government, enabling more industrial designers to play their crucial role in our developing country.



Figure 7. “GIVAN”: Hand-Shoulder Bag, Cowhide Leather, Designed By Mohammad Fatehi | Dokmeh Design Studio
The shape of GIVAN was inspired by the form of “Kashkool”; Dervishe’s (Sufi’s) drinking bowl

Endnotes

1. Design Serendipity: Generally, when interesting or valuable discoveries are made unpredictably, it is called “serendipity”. Also, according to the fairy tale, three Persian princes sailed off to make their fortunes in the “land of silk”, an island called “Serendip”. (Today, the island is known as Sri Lanka.) Along the way, they made discoveries about the island, and learned things they never expected. Similarly, as design can be thought a yet-undisclosed response to a need, serendipity is used to purport the very nature of design.