

DESIGN FOOTPRINTS FOR MINING THE FUTURE

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Design Footprints for Mining the Future defines the effect of socio-economic, technological and sustainability highlights of the last century and traces the development of design concepts as a result of external impacts.

The aim of the paper is to analyse the changing context, scope and impact of design and its education since the industrial revolution and the changing design practice. The paper will mark a contradiction between the external agendas and the practiced framework in design education.

KEYWORDS: design context, design impact, design education.

INTRODUCTION

Design action and its results impact the economy as well as ecology and society in the long-term by transforming the environment and human lifestyles, habits, values and behaviour. Also there is a multi-layered and diverse comprehension of design and its economic, technological and socio-political connotations, and humans are constant beneficiaries of the design result. Design education is part of the political-economic-social system and reflects or shapes impulses from the system as external agendas.

Design is present in all sectors of the economy, and the process of product and service design negatively impacts the environment by using 80% of environmental resources¹. Only half a year after their purchase, 1%

of all goods are still in use in the USA². Consumer philosophy is not feasible without design that is branded as material wealth. The frequent purchase of goods is accompanied by social aspects, such as comparison of self and family to commercial norms and ideals constructed on the analysis of consumers' wishes for products, clothing, accommodation, cars, mobility, etc.³

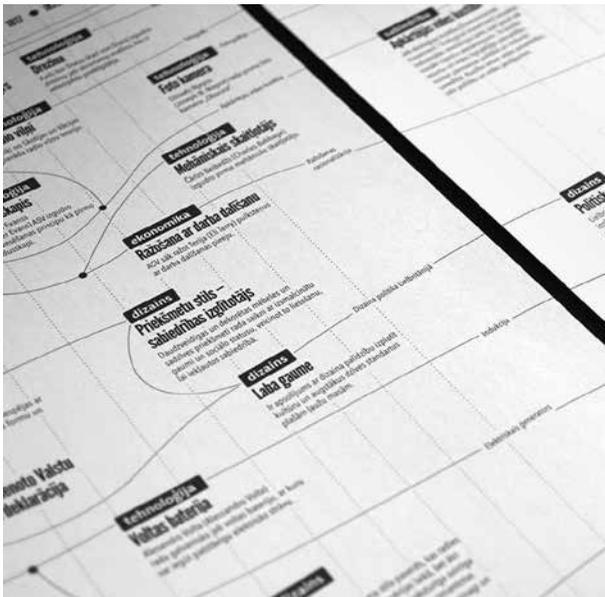
Design has fulfilled the basic material needs through diversity of products and the artificially increased desire. Design serves the system that is created by the external context and, thus, it follows economic-political and technological agendas set in the future.

Analysing design as a result from the viewpoint of aesthetic qualities, form and function, its impact on

1 John Thackara, *In the Bubble. Designing in a Complex World*, London: The MIT Press, 2006, p. 1.

2 Annie Leonard (Director), quote from the *Story of Stuff* [film], 2008.

3 Ann Thorpe, *Architecture & Design versus Consumerism. How Design Activism Confronts Growth*, Oxon: Routledge, 2012, p. 24.



1–4. Aija Freimane, Matīss Zvaigzne, *Dizaina pēdas* (*Design Footprints*), 2016

Aija Freimane, Matīss Zvaigzne, *Dizaino pēdsakai*, 2016

the economy and culture as well as its social consequences are not considered⁴. Each period has its own understanding and definition of design. A varied comprehension of design has developed diverse assumptions: design adds value, good design is simple, less is more, design improves the quality of life, design solves problems, form follows function, and design is self-explaining.

The paper is based on the *Design Footprints*⁵ map. *Design Footprints* (*Dizaina pēdas* in Latvian) is a map – an interactive timeline of socio-economic, political, technological, sustainability and design facts from 1588 to 2015. The map encourages following historical facts as milestones and thinking in terms of cause and effect of the external system on design solutions.

In *Design Footprints*, 168 design events and facts, including 64 design concepts, are closely linked with

144 technological innovations, 89 political, 57 economic, 24 social and 20 sustainability impact factors that have changed and influenced today's problems and context. As design is still taught and considered in the context of art history, 34 art styles are included in the timeline as well.

Just only 100 years ago, after the Long Depression, the use of electricity in households was lobbied to boost the economy at the beginning of the nineteenth century. The first electric devices, such as a bread toaster, an electric stove and an electric table fan, were designed and invented to follow political-economic guidelines. In the twentieth century, on the contrary, the saving of electricity was on the agenda.

The invention of Ford's assembly lines and the development of chemical industry and production of plastics enabled to produce more and more effectively. Planned obsolescence, consumer engineering and seasonality, fashion trends were formulated and introduced into production to boost the flow of continuous consumption. At that time, there were only two billion inhabitants on the planet Earth.

4 Clive Dilnot, "The State of Design History", in: *Design Discourse. History, Theory, Criticism*, Ed. by Victor Margolin, Chicago: The University of Chicago Press, 1989, pp. 213–250.

5 Aija Freimane & Matīss Zvaigzne, *Dizaina pēdas*, Riga: Radošā partnerība, 2016.

The 1950s and 1960s are marked by the development of the cosmos era, the civil right movements and revolutions. The world lives in the shadow of nuclear warfare. In the 1960s, the availability of planetary resources is being discussed in the context of an intensive industrial, agricultural and economic development. After several energy crises, a debate on the use of renewable energy resources is underway.

In the 1970s, information and communication technologies develop and mark a new era of the internet, computers and mobile phones. In the 1990s, political agendas and plans are developed as millennium goals to solve global warming, environmental problems and poverty. In 2010, the world's population reaches 7 billion. The last financial, economic and social crisis in 2008 leads to the first review on happiness, published in 2012.

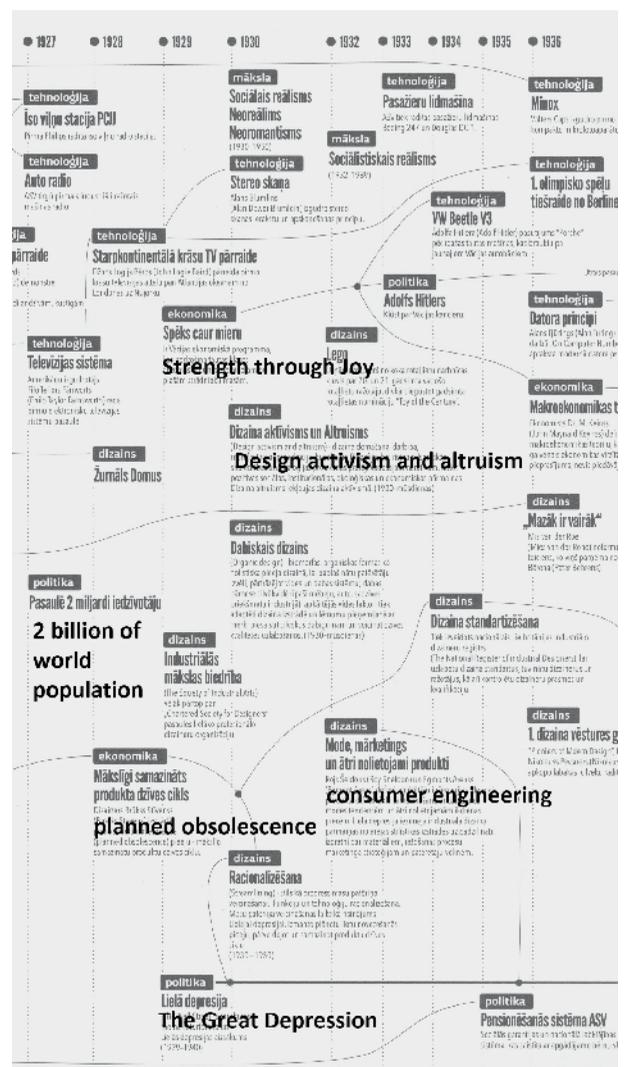
The aim of the paper is to analyse the changing socio-economic and political context, scope and impact on design education since the industrial revolution, and the changing design practice following the external context.

DESIGN FOR THE GROWTH OF ECONOMY – CAUSES AND CONSEQUENCES

Design has always been tied to and has interacted with other industries; therefore, the use of design should be discussed in a particular socio-economic and political context. The interpretation of design should be diverse, as design has historically evolved on an ongoing basis and has always been a complex activity⁶. Design and its interpretation cannot be limited to a single definition anymore due to the complexity of the context and external agendas.

Not only the use of fertilizers and other chemical substances, increased use of electricity in house

6 Fran Hannah & Tim Putnam, “Taking Stock in Design History”, in: *The Design History Reader*, Grace Lees-Maffei & Rebecca Houze, Oxford: Berg, 2010, pp. 267–272.



appliances and advanced public health care, but also the promotion of design as perceived advantage (since 1759) – a promise to improve the quality of life, personal comfort and a social status – have had an impact on economic growth since the industrial revolution. This has created a perception of design that forms a high-quality life and puts design in an exclusive niche.

By defining and describing the benefits of division of labour, productivity and free market in 1776, Adam Smith formed the ground for mass production through which art became affordable and the taste of the masses was shaped. Design as a tool to multiply art and craft products is related to the political-economic objectives through rationalisation since 1851,

scientific management (1880), conspicuous consumption (1899), expansion of planned obsolescence (1928), and consumer engineering (1932).

Design process based on designing and supporting a desire for new products furthered the growth of consumerism and the fetishism of commodities as an acknowledgement of social status and inclusion in a particular social class. Consumption has become a demonstration of affordability rather than ensuring personal comfort by satisfying needs. The myth of successful self-realisation through acceptance to a particular social class based on the ownership of particular goods was created. Besides, the desire for identity, recognition and appreciation is a human basic need; the consummation of that through design is material rather than psychological or social. The World Bank review "What a Waste: A Global Review of Solid Waste Management"⁷ shows decreasing average rates of per capita waste generation according to the income level: high income countries generate 46%, upper middle income countries 19%, lower middle income countries 29%, and lower income countries generate only 6% of global waste.

The need for owning products as indicators of social status and symbols and identities is object fetishism, which is sustained by manufacturers and governments. The identity of an individual as a rationality becomes a relative distinction by interacting with others. The acquisition of social status based on the consumption of goods originated in the period of industrial and economic expansion through the intervention of governments and policy makers to stimulate economy after the economic crisis of the Long and Great Depressions. Thus, industrialization, an increase of productivity, the division of labour and assembly lines for economic growth were the limiting aspects of design diversity

and demonstrate the connectedness of design to economic-political aims. Design as a style, colour and aesthetics was used to diversify products of the same function that were meant to satisfy the basic material needs and ensure consumption as an axis of economy.

Design has greatly influenced and contributed to the promotion of show-off values by using products as identities. Products have become desirable not because they demonstrate the generated asset, but because they symbolize a desire of others. To satisfy wants is not to desire products. Desires are not products and do not have a shape. Desires exceed the satisfaction of basic needs and create a socio-historical world in which everyone consumes the desires of the other. Goods in a consumer society become a symbol of status⁸, and the identity of the material wellbeing is created and presented as a necessity for a high-quality life. The higher GDP per capita as welfare rating means better life although it does not correlate with happiness and satisfaction of life. Desires refer to longing for something that is likely to be fictional; fulfilment of desires and needs is an important aspect of the theory of economy. With the help of design, economic growth and financial turnover increase; hence, consumption and planned obsolescence are promoted because the needs of the humanity are limited, but desires could be provoked endlessly.

Packard argued that it is the desire to feel better about ourselves rather than need that motivates people to buy⁹, known as artificial extension of needs through design. The consumption of wants becomes a lifestyle of a demonstration of social status and socialization of design through materiality. Design is the substance of the extension of artificially created needs and, thus, one of the key factors of waste management, cultural and social behavioural changes.

7 The World Bank, <http://web.worldbank.org>, retrieved: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTURBANDEVELOPMENT/0,,contentMDK:23172887~pagePK:210058~piPK:210062~theSitePK:337178,00.html>: <http://web.worldbank.org>, 2017.

8 Nick Crossley, *Key Concepts in Critical Social Theory*, London: Sage Publications, 2005.

9 Vance Packard, *The Hidden Persuaders*, Harmondsworth: Penguin, 1960.

second-wave feminism (1960), the hippie subculture (1960), the anti-nuclear movement (1961) and the disability rights movement (1962), such design approaches as Design for People (1955), Design for Need (1965), User Involvement (1968), Holistic Design and Participatory/Collaborative Design (1970), User Centred Design and Universal Design (1976) were formulated. The renaissance of the design concepts formulated in the 1960s took place after a social and financial crisis in 2008 along with Design Thinking and Service Design (formulated in 1991), Co-Design (2000), Critical Design and Social Design (2001) as a need to address social problems and challenges caused by economic-political externalities. In the last decade, design education has started to reflect the diversity of design concepts, but still, the approach of the Bauhaus school in design education is predominant.

Political interventions known as a program of Strength Through Joy (from 1929) and the Marshall Plan (from 1948) were introduced to foster the recovery of economy after a financial, economic and political crisis. New product development, constant provocation of desires and consumer engineering led to the formulation of innovation economy by Joseph Schumpeter in 1942 as the cutting edge for economy and businesses.

The 20th Party Congress of the Soviet Union (1956) made a direct impact on the application of design through production and revival of economy in the Soviet Union. It was followed by the Kitchen Debate between then U.S. Vice President Richard Nixon and Soviet Premier Nikita Khrushchev at the opening of the American National Exhibition in Moscow on July 24, 1959, where the merits of communism versus capitalism in a model American kitchen were discussed. The house, filled with labour-saving and recreational devices meant to represent the fruits of the capitalist American consumer market, was made affordable to anyone in America, according to the American exhibitors. Nixon pointed to the American dream as

the fulfilment of desires both then and in the future, whereas Khrushchev argued that the housing market for Soviet people is going to serve their children and grandchildren as well as the social welfare system of communism¹¹. During the Cold War era, both political ideologies – capitalism and communism – included guidance on material culture, production and consumption. Western capitalist countries developed individual consumption, while socialism supported the demand for public services to fulfil the needs of the individual as a benefit for all society.

In 1966, knowledge economy was introduced by Peter Drucker, but it was not until the late 1900s – 2000s that it was acknowledged as a sector of technology/human capital. A considerable shift in economy was spurred by private initiatives, such as Amazon (1994), eBay (1995) and Crowdfunding (2006), which explored technological and human capital innovations gliding from political towards private capital intervention.

It is possible to state that industrialization fundamentally affected and limited the applicability of design. Through industrialization, a shift from crafting and valuing long-lasting products to a short and shorter product life cycle occurred in society and economy, thus stimulating the rapid movement of goods. Over a longer period of time, industrialization and technological innovations had a positive effect on the economic and financial development; only a small part of society achieved material prosperity and wealth as an outcome of progress and high-quality life. For example, in 2011, the poor living on \$2 or less daily and low income living on \$2.01-10 make 71% of all population on the globe, middle income living on \$10.01-20 makes 13%, and upper-middle income living on \$20.01-50 and high income on more than

11 *The Kitchen Debate – transcript*, retrieved: <https://www.cia.gov/library/readingroom/docs/1959-07-24.pdf>:<https://www.cia.gov>, 2017.

\$50 comprises 16% of the global population¹². The majority of the world's population has been socially excluded due to a loss of collective experience, survival skills and knowledge that have been overwhelmed by industrialization and globalization and replaced by extended needs and polarised urbanisation. Through the unification of production and development of technologies, multiplied products were redesigned as a rapid change of aestheticism into monotonous use of design.

The artificially encouraged consumption of electricity in the beginning of the twentieth century by the use of various electric household appliances caused a paradox of sustainability in less than 100 years. We have to decrease the consumption of electricity and its side effects. Global warming, electro-waste and unsustainable production and consumption, including fashion industry, social crisis and unemployment, are the most discussed aspects for the humanity to deal with.

It is possible to state that design has created resourceful intensive products and lifestyles by materializing the objectives of the economy and politics of the corresponding period rather than solutions for people's needs. Planned obsolescence as consumer ethics used by business and promoted by politics developed problems caused by consumer society, although it has been discussed as a method to return people to work during periods of unemployment, to restore consumer confidence and to develop a macro-economy.

DESIGN FOR SUSTAINABLE SOCIAL WELLBEING – MINING THE FUTURE

Goods are considered to be objects of sale on the market and are the most important for ensuring economic growth¹³. Design helps materialize a “culturally acceptable” form to represent the economic model,

and evolving “with these economic models and within our psychosocial perceptions of this rapidly changing world”¹⁴ should be analysed in a particular political – economic and social context. It is assumed that design adds value to products and sustains the growth of the economy, but until now, a method for the economic valuation of design has not been developed¹⁵. Traditionally, design has been classified as culture capital that could be materialized as objects and institutionalized as an acquired educational experience of cultural values¹⁶. Design as a method and practice should be analysed not only in the context of economic growth and cultural capital, but also as a cause and effect of social and environmental problems.

The problem is not only caused by produced goods of short lifecycle, but also by socially and environmentally irresponsible business practices under the umbrella of a political ideology, global corporations and exploitation of environmental and labour resources in contrast to micro-level or small businesses that are directly related to the community. Therefore, corporate social responsibility is in debate since the nineteenth century and is a crucial issue in the context of sustainable social wellbeing.

The costs of the environment and ecology became associated with material consumption in the second half of the twentieth century. Scientists, such as Rachel Carson (in 1962) and Paul Ehrlich (in 1968), started to debate the limited resources of the planet as a massive impact of industrial production on the environment and people, as well as overpopulation.

As a result of raised voices for the environment, international organisations placed environmental issues on their agenda. In the context of sustainability and globalisation, responsibility of design and designers

12 <http://www.pewglobal.org>, retrieved: <http://www.pewglobal.org/interactives/global-population-by-income/>: <http://www.pewglobal.org>, 2017.

13 Ernst F. Schumacher, *Small is Beautiful. A Study of Economics as if People Matter*, London: Vintage Books, 2011.

14 Alastair Fuad-Luke, *Design Activism. Beautiful Strangeness for a Sustainable World*, London: Earthscan, 2009.

15 Peter Zec & Burkhard Jacob, *Design Value. A Strategy for Business Success*, Essen: Red Dot Edition, 2010.

16 Nick Crossley, *Key Concepts in Critical Social Theory*, London: Sage Publications, 2005.

was highlighted by Victor Papanek in 1971. He argued for the usage of local and appropriate technologies and local materials to re-establish local traditions through the involvement of local people in the design process, rather than importing technologies and products developed in advanced countries. Exploring local traditions and materials is a new trend after the financial crisis in 2008.

As a protest against economic expansion and consumption, not only the hippy culture flourished, but also Anti-Design (1968) and Alternative Design (1970) emerged, and product Life Cycle Thinking and Life Cycle Analysis (1974) were introduced by engineers.

The next round of design approaches addressing social and environmental issues appeared as Design for Social Impact (1996), Inclusive Design, Design and Feminism (1999), and Cradle to Cradle (2002). Sustainability has become a buzzword and a statement of political ideology as an outcome of the excessive exploitation of natural resources and the impact of industrial growth. Nevertheless, the political objective is to further sustainable industrialization, economic and financial growth on the basis of extensive consumption in the twenty-first century.

Politically, it is determined that economic and financial aspects are the basis of sustainability and “in order for organizations to survive, they must engage in product development”¹⁷. This means that growth and development can only be sustained through a single scenario: to produce as many new products as possible for the sake of consumption and as a means of identity and socialization. Contrarily, a sustainable economy is considered to be one in which resources are not used faster than nature can renew them. In addition, the economy should provide a business environment that balances environmental, social and

economic viability¹⁸. Till now, humanity uses about 40% more resources than nature can regenerate, and high-income countries are consuming ten times more than the population in developing countries¹⁹. The responsibility of dumped landfills and unconsumed goods must be addressed by politicians, entrepreneurs and designers, rather than by consumers using even more products. It is a challenge of design education and practice in the nearest future.

Globally promoted, environmentally friendly production and eco-responsible lifestyles indicate planned consumption trends. The identity of the modern consumer is not based on values and preferences of a sustainable way of living. This assertion is also supported by The Agenda 21 action plan for sustainable development (1992) of the United Nations Conference on Environment and Development. The need to change the consumption and production patterns of the industrialized countries was defined in 1994. Contrarily, such a need did not arise in countries with planned economies or economic deficits. Recycling and re-use in households, consumption of local or regional products, as partly compulsory voluntary simplicity, is seen as the basis for a sustainable community and sustainable economy from the twenty-first century viewpoint²⁰. Sustainability issues are mostly viewed and analysed from the perspective of resource consumption prompting continuous discussions on sustainable consumption and production that directly and indirectly affect both ecology and society and encourage the consumption of resources more efficiently rather than consuming less.

17 Arthur Eger, Maarten Bonnema, Eric Lutters & Mascha Van der Voort, *Product Design*, The Hague: eleven, international publishing, 2013.

18 Charles Arden-Clarke, & Adriana Z. Farah, *ABC of SCP. Clarifying Concepts on Sustainable Consumption and Production*, Paris: Unated Nations Environment Programme, 2010.

19 Sylvia Lorek & Doris A. Fuchs, “Strong Sustainable Consumption Governance – Precondition for a Degrowth Path?”, in: *Journal of Cleaner Production*, 2011, pp. 36–43.

20 Edina Vadovics, “Emerging Sustainable Consumption Patterns in Central Eastern Europe, with a Specific Focus on Hungary”, in: *System Innovation for Sustainability*, Sheffield: Greenleaf Publishing, 2008, pp. 301–317.

It highlights the dilemma of design by production and consumption of more sustainable products, by arousing desires as extended needs of consumer lifestyle, and by providing a method for politics to achieve the objectives of its ideology. On the other hand, design contributes by eliminating the capacity and skills of humans to find solutions during periods of economic crises, austerity and restricted opportunities, and creates dependence on consumption. Design and design education fulfils the primary need of economics and politics, rather than creating solutions of sustainable social wellbeing for the humanity.

Research on sustainability paradigms reveals that values are an important basis for changing people's habits. Although the values of society and the individual cannot be expressed in monetary terms, and human life cannot be assessed financially²¹ nor determined by the prices of his or her property, objects can be desirable to the individual by being accepted in a social group, which represents the preference of that group²².

The value aspect has not been fully explored from the viewpoint of sustainability, design or wellbeing. Welfare and economic growth are influenced by aspects that are not considered to be values in the socio-economic political system. Is material wealth, which is propagated by the political-economic system, identified as most valuable? Then, when we remember the best moments of our life, we find that they are always associated with some people. The most magnificent things happen as an interaction between at least two people²³. Examining the design process and new product development from a value perspective will guarantee people's satisfaction with their unmet

nonmaterial needs – “identity, community, self-esteem, challenge, love, joy”²⁴ rather than dead-end consumption of material products²⁵.

One of the design objectives was to construct a better life for people. The world statistics show that satisfaction in life does not increase, although there are enormous amounts of products that are supposed to improve people's lives and ensure basic needs. “At the individual level, the effect of income on life satisfaction is lessened once an individual reaches a ceiling annual income of approximately \$75,000, but the effect of income on life satisfaction remains strong for those at lower income levels”²⁶. Inventions that increase revenue and accelerate an exchange of ideas using technologies to enhance prosperity and to increase economic and financial growth²⁷ have not brought satisfaction and wellbeing in situations in which people must learn to live with limited financial resources or austerity. For example, in 2007, around 67% of the Greeks said they were satisfied with their life; but five years later, after the financial crisis struck, the corresponding figure was down to 32.4%²⁸. This indicates that a better life for people includes qualities other than an increase in new product development, growth of production and consumption.

The Slow Movement followed by Slow Design in 2004 emerged to address social and environmental challenges in the twenty-first century.

Happiness as an aspect of wellbeing has evolved in the context of political and economic priorities after the 1st World Happiness Report in 2012. As social

21 Rodrigo Lozano, “Envisioning Sustainability Three-Dimensionally”, in: *Journal of Cleaner Production*, 2008, pp. 1838–1846.

22 Aija Freimane, *Design for Sustainable Social Well-Being. The Paradigm Shift of Design: Summary of doctoral thesis*, Riga: Aija Freimane, 2015, p. 59.

23 Tom Rath & Jim Harter, *Wellbeing. The Five Essential Elements*, New York: Gallup Press, 2010.

24 Donella Meadows, Jorgen Randers & Dennis Meadows, *Limits to Growth. The 30-Year Update*, Oxon: Earthscan, 2010.

25 Aija Freimane, *op. cit.*, p. 59.

26 Ed Diener, Ed Sandvik, Larry Sedlitz & Marissa Diener, “The Relationship Between Income and Well-Being: Subjective or Absolute?”, in: *Social Indicators Research*, Vol. 28, Issue 3, March 1993, pp. 195–223.

27 Matt Ridley, *The Rational Optimist. How Prosperity Evolves*, London: Fourth Estate, 2010.

28 Esteban Ortiz-Ospina & Max Roser, [online], <https://ourworldindata.org/happiness-and-life-satisfaction>, 2017.

wellbeing is not addressed by economy, Design Anthropology (2012) and Design for Happiness (2014) emerged. Although there was a belief in early liberal ideology that happiness, known as utility, can be measured by the accumulation of capital, genuinely people are looking for happiness just as true happiness. Good health, beauty, money or power is valued as expectations to make people happier²⁹ or to cause an imagined sense of identity or belonging. It is not easy to practice love, friendship, generosity, understanding, or solidarity within a system whose rules, goals, and information streams are geared for lesser human qualities³⁰.

Design on the micro-level as individual or personal values impacts society, environment and the economic system. It is a challenge of design now and in the future to sustain the humanity and ecology by shaping and forming society, demand and supply. Personal values have to be analysed in the context of the design process and the environment in which the individual resides. Until now, the personal values of an individual have been weakly studied either in relation to the Western political system³¹ or in Eastern Europe as an axis of design for mining the future. Two hundred years after the Industrial Revolution, the external system as the macro-level has changed the individual micro values, beliefs and habits that used to be linked to the local culture and social context.

CONCLUSION

The diverse manifestation and interpretation of design has led to a number of myths about the use and impact of design in which the sole and unbiased justification is the fruition of economic and political objectives,

creating social, identity and wellbeing problems rather than solving them. Design as a result and process has been used as a tool for political and economic development, the diversification of production and the promotion of consumption for the formal and material wellbeing of an individual; however, the historical influence of design and the amplitude of design exploitation allow for the assumption that design activity could affect social welfare development processes, which until the twenty-first century have not been given adequate attention or importance for achieving sustainability. Design thinking as design activism and altruism refers to atypical manifestations of design for the social, health, environmental and welfare benefits and should not be incorporated in the material, quantitative and comparative economic growth plan.

The historical analysis of the impact and interaction of design shows that design and stylish, modern lifestyles have become indistinguishably linked. Design as consumption of particular material things is a confirmation of reputation, status and identity in a particular social group that is related to the feasibility and demonstration of the fulfilment of desires.

Design is a reflection of the dominant ideology and materializes its objectives and values. Material wellbeing as the indicator of a high quality of life is the objective of the capitalist society. Economic growth and the competition of the economy being the most important objective have further stagnated design education. There has not been a need to address new challenges in design education in the last 150 years except sustaining industrialization and economic growth. Design education has remained a functional, aesthetic and technologically advanced product development activity. By making consumption a prerequisite, which also includes the use of design in consumer product development and communication, design has continued to increase social discrimination and poverty, economic colonization and the exploitation of human resources.

29 Mihaly Csikszentmihalyi, *Flow: The Classic Work on How to Achieve Happiness*, London: Rider, 2002.

30 Donella Meadows, Jorgen Randers & Dennis Meadows, *op. cit.*

31 Ronald Inglehart, "Changing Values in Post-Industrial Societies", in: *The Social Movements Reader. Cases and Concepts*, Jeff Goodwin & James M. Jasper, Oxford: Blackwell, 2003, pp. 64–71.

Design footprints is a map as a method to encourage the awareness of the design context from the historic perspective and to mind the future as a long-term impact of today's design activities. From that perspective, design education should encourage to design more purposefully, to ask awkward questions and to provoke mining the future. Education should advance the values for designers – meaningful designing, responsibility towards society and resources, including also the prototyping and production process of technologies. Design should address social challenges, such as self-fulfilment and psychological needs, rather than material problems as basic needs, taking into account the demographic and socio-economic context. The principles of planned obsolescence in designing should not be covered in education.

Beside specific design subjects, social studies, such as anthropology, contextual studies of society, politics, economics and developing technologies, and complexity studies should be included in the curricula of design education. A shift should be made from applied art and manufacturing – craft-based materiality design education known as the Bauhaus school – towards design for social wellbeing. Since the overall objective of design is to sustain a better and higher-quality life, designers ensuring economic and political objectives must take into account the values that are the most important for the quality of people's life: mutual relations, trust, health and the environment. This not only means that design education must change its priorities and methods, but also that industry in the future will project a paradigmatic shift from materialism toward the creation of values.

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DIZAINO PĒDSAKAI RUOŠIANT DIRVĄ ATEIČIAI

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SANTRAUKA

REIKŠMINIAI ŽODŽIAI: dizaino kontekstas, dizaino poveikis, dizaino edukacija.

Straipsnyje siekiama įvardyti pagrindinių praėjusio amžiaus socialinių-ekonominių, technologinių ir tvarumo veiksnių poveikį bei parodyti, kaip išorinės sąlygos įtakojo dizaino sąvokų vystymąsi. Jo tikslas yra tyrinėti besikeičiantį dizaino ir jo edukacijos kontekstą, mastą ir įtaką, pradedant industrine revoliucija ir baigiant nuolat kintančia dizaino praktika. Atkreipiamas dėmesys į prieštaravimą tarp išorinių veiksnių ir dizaino edukacijoje praktikuojamų schemų.

Dizaino procesas ir jo rezultatai turi ilgalaikį poveikį ekonomikai, ekologijai ir visuomenei, transformuojant aplinką ir žmonių gyvenimo stilių, įpročius, vertybes bei elgesį. Dizaino ir jo ekonominių, technologinių bei socialinių-politinių konotacijų suvokimas yra daugiasluoksnis ir įvairus, o nuolatinis dizaino rezultatų gavėjas yra žmogus. Dizaino edukacija yra politinės, ekonominės ir socialinės sistemos dalis, kuri atspindi ar formuoja iš jos gaunamus impulsus.

Šio straipsnio pagrindas yra *Dizaino pėdsakų* (latviškai *Dizaina pēdas*) žemėlapis – interaktyvi dizaino, socialinių-ekonominių, politinių, technologinių ir tvarumo faktų išklotinė nuo 1588 iki 2015 metų. Siūloma remtis istoriniais faktais kaip gairėmis, apmąstant išorinių veiksnių priežastis ir pasekmes dizaino sprendimams. Jame 168 dizaino įvykiai ir faktai, tarp jų – 64 dizaino sąvokos, yra glaudžiai susieti su 144 technologinėmis inovacijomis, 89 politiniais, 57 ekonominiais, 24 socialiniais ir 20 tvarumo veiksniais, kurie keitė ir darė įtaką šių dienų meno situacijai, problemoms ir būklei. Kadangi dizainas vis dar tebėra suvokiamas ir dėstomas meno istorijos kontekste, 34 meno stiliai yra taip pat įtraukti į žemėlapio laiko išklotinę.

Dizaino pėdsakų žemėlapiu siūlomas būdas suvokti dizaino kontekstą istorinėje perspektyvoje ir apmąstyti, kokią ilgalaikį poveikį dabartinė dizaino veikla turės ateityje. Žvelgiant iš šios perspektyvos, dizaino edukacija turi skatinti kryptingiau kurti dizainą, užduoti nepatogius klausimus ir provokuoti ruošti dirvą ateičiai. Edukacija turi iškelti dizaineriams vertybes: prasmingas dizainas, atsakomybė prieš visuomenę ir gamtos išteklius, technologijų prototipai ir gamybos procesai. Dizainu būtina spręsti ne materialias problemas kaip esminius poreikius, o tokius socialinius iššūkius kaip savirealizacija ir psichologinių poreikių patenkinimas, atsižvelgiant į demografinį ir socialinį-ekonominį kontekstą. Numatomo senėjimo (*planned obsolescence*) principai dizaino srityje neturi būti dizaino edukacijos tema.