BALÁZS FEKETE

DIGITAL DYNAMIC VISUAL IDENTITIES – PROSPECTS AT THE FRONTIERS OF MARKETING AND DESIGN DIGITÁLIS DINAMIKUS VIZUÁLIS IDENTITÁSOK – KILÁTÁSOK A MARKETING ÉS A DIZÁJN HATÁRAIN

A logo is worth more than a thousand words. But how much are thousands of logos worth? Contemporary visual communication toolkit of companies and brands is becoming more and more technology-driven and extended by Dynamic Visual Identity (DVI) systems. Algorithmic, data-based, interactive DVIs promise unprecedented opportunities to brands and pose new challenges for designers and marketers. This paper explores the characteristics of generative type digital dynamic visual identities with the aim of stimulating interdisciplinary discourse and scientific examination at this frontier of marketing and design. The current study applied qualitative inquiry to a curated sample of contemporary visual systems designed after 2013. By using content analysis and the designcommunication (DIS:CO) approach the authors identified three dimensions that are suitable for the examination, and development of DVI cases regardless of the industry, technology and media used. Explanations are illustrated by the award-winning DVIs of world-renowned agencies such as Pentagram, Saffron, and Lava.

Keywords: dynamic visual identity, designcommunication, digitalisation, branding, design

Egy logó többet ér ezer szónál. De mennyit ér több ezer logó? A vállalatok és márkák kortárs vizuális kommunikációs eszközrendszere egyre inkább technológiavezérelt és dinamikus vizuális identitás (DVI) rendszerekkel bővül. Az algoritmikus, adatalapú, interaktív DVI-k soha nem látott lehetőségeket ígérnek a márkáknak, és új kihívások elé állítják a tervezőket és a marketingeseket. Ez a cikk a generatív típusú digitális dinamikus vizuális identitások jellemzőit tárja fel azzal a céllal, hogy ösztönözze az interdiszciplináris diskurzust és tudományos vizsgálatot a marketing és a tervezés e határterületén. A jelenlegi tanulmány kvalitatív vizsgálatot alkalmazott a 2013 után tervezett kortárs vizuális rendszerek egy kiválasztott mintáján. A tartalomelemzés és a designkommunikációs (DIS:CO) megközelítés segítségével három olyan dimenziót azonosítottak a szerzők, amely iparágtól, technológiától és médiától függetlenül alkalmas a DVI-esetek vizsgálatára, fejlesztésére. A magyarázatokat világhírű ügynökségek, például a Pentagram, a Saffron és a Lava díjnyertes DVI-jei illusztrálják.

Kulcsszavak: dinamikus vizuális identitás, designkommunikáció, digitalizáció, márkaépítés, design

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The widespread digitalisation of economic sectors goes hand in hand with the changing of the role of economic organisations in our lives. Corporate communications are developed according to rules that are shaped by a changing society and changing market conditions (Szalay, 2018). As these changes seem to be accelerating, certain turbulence can be felt in the

relations between companies and consumers, and their typical communications. Digital consumption habits transformed by online platforms are offering the stakeholders of brands experiences and participation opportunities that are more interactive and intense than ever before. The continuously evolving toolkit of organisational and product brands utilising upto-date communication technologies is used to invent new ways of impressing audiences. The latest technological developments increase the potential of visual communication and design (Lélis et al., 2020, p. 3). In addition to social and technological conditions, factors that are in constant flux such as the market and the competition, the target group, and changes in trends and applications should also be considered in the development of visual communication (Lorenz, 2022 p. 40). By utilising the concept of Dynamic Visual Identities (DVI) managers and creators become able to act in response to all these factors. With the help of a DVI, innovative brands may communicate with each of their stakeholders through unique visuals created with generative and data-driven customised looks, and via reactive interfaces capable of interaction. Such utilisation of generativity changes the design process and the role of designers (Gross et al., 2018) and brand owners as well. In such cases, ever-changing visual identities emerge in place of static visual identities built using consistent elements only. The mantra of the past, that the visual identity should be consistent, is now in metamorphosis (Papp-Váry, 2020). This may be named the post-logo era (Guida, 2014), since the logo, the simple graphic symbol used for identification, is being replaced by more complex and sophisticated visual systems.

It is an important factor that the range of options offered by business communication tools is in continuous evolution due to emerging state-of-the-art communications technologies, which is also reflected in the changes in consumer behaviour. A central element of postmodern consumption is the notion that the ideal "post-consumer" not only takes steps to be surrounded by goods but is also actively involved in the processes of constructing those goods (Mitev & Horváth, 2008). Co-creation even appears as a new, substantial consumer expectation (Kenesei & Kolos, 2018). A contemporary brand can cater to this demand through a carefully crafted DVI.

The emergence of DVIs calls for substantial reconceptualisation and further explorations both in the management and design practices of business communication. In this study, we seek answers to the following question: "What dimensions can be explored in the qualitative characteristics of generative type digital dynamic visual identities?", through qualitative content analysis and designcommunication (DIS:CO) (Cosovan, 2009; Cosovan & Horváth, 2016; Cosovan et al., 2018) research.

The investigation aims to stimulate an interdisciplinary discourse on digital dynamic visual identities by connecting the fields of marketing and visual design. It is hoped that this study can uncover dimensions that can be utilised in the current research and practice of both fields, and that induce forward-looking questions concerning digital business communication, brand building, and company image development.

Theoretical background

Dynamic Visual Identities

The emergence of DVIs is a relatively new phenomenon in the history of visual communication. Even before the turn of the Millenium, there have been examples of forward-looking brands and unconventional designers putting significant emphasis on expressing variability and versatility in the form of visual identity. MTV Music Television had utilised the concept as early as 1981, and subsequently, it become more widely known with the appearance of Google Doodles. The phenomenon became popular in the 2010s when metropolises (e.g. Melbourne, NYC), as well as cultural and educational institutes (e.g. OCAD University), began to utilise it in their communication (Van Nes, 2012). In recent years, the use of new, digitally operated DVIs has been more and more prevalent. Globally known organisations, services, and products using DVIs are also appearing. Examples of these are the visual identity of the LA28 – the summer Olympic games of 2028 (URL1), which received broad media coverage, or the 2020 infographics-based visual system of the popular Eurovision Song Contest (URL2), which received the highly esteemed Red Dot Design Award of 2020.

The theory of DVIs is also connected to the literature on marketing through the domains of Corporate Visual Identity (CVI) (van den Bosch et al., 2006), Corporate Design (Melewar & Karaosmanoglu, 2006), and Visual Brand Identity (Phillips et al., 2014), since DVIs can be applied in many ways to support brands' design. While design-oriented businesses consider design as an element that is central to their operation, non-designoriented companies also recognise it as a factor in competitiveness (Szalczer, 2008). A common element in various brand theories is that brands identify, differentiate, and can create a unique and lasting effect on consumers, and thus need to be managed as well (Bauer, 1995, p. 40). For companies, the development of modern visual identities through DVIs could be an excellent vehicle for this.

In the following paragraphs, we will approach this subject from the perspective of corporate visual identity. According to the definition of the British Standards Institute (Balmer, 2008, p. 899), a CVI is the "Visual expression of an organisation's corporate identity: the face it puts on itself, its activities and outputs". Melewar and Jenkins (2002) defines Communication and visual identity as a subconstruct of Corporate Identity. In a later paper, we find that Visual Identity is linked to Corporate Structure (which consists of Brand structure and Organisational structure) (Melewar & Karaosmanoglu, 2006). These authors define visual identity as a factor that affects Corporate Communication. Studies like Melewar and Saunders (1999) and Sharma and Jain (2011) also define Corporate Visual Identity as an important element of Corporate Communications. Brooks et al. (2005) argue that Corporate Identity is a versatile phenomenon where visual elements are of critical importance. They play a role

in differentiation, the shaping of reputation and image, and in getting the public to remember the company. A Corporate Visual Identity can be understood as the external symbol of the company's internal efforts (Shee & Abratt, 1989). It is a tool that can be used to create, maintain and enhance competitive advantage if developed appropriately.

Corporate Visual Identity is a set of symbols that the organisation mainly uses to identify itself (Dowling, 1994). Extending this argument, it can be said that CVIs are utilised for two main purposes: to capture corporate culture and to promote its communication efforts (Balmer, 1995). Furthermore, it can also facilitate the better identification of employees with the company (Van den Bosch et al., 2006). Thus, the CVI is the amalgamation of tangible and functional elements that express the identity of the company: the combination of name, logo (or symbol), colours, tagline, language, and text (Aaker, 1996; Kapferer, 2008).

The recent visual turn (Gregersen, 2020) has transformed the field of visual communications. Contrary to the traditional approach, consistent visual systems and identification integrated into invariant narratives are being replaced by a dynamic, interpretative quality. Parallel to this phenomenon, a conceptualisation that frames identity formation as a dynamic, multi-actor process is increasingly prevalent beside theories that define corporate and organisational identity as static – as the literature review of Balmer (2008) also reveals. The engagement of stakeholders may also be related to a central emphasis on enhancing customer experience, which can yield better profitability and higher perceived customer value for companies (Kenesei & Seprődi, 2017, p. 53).

Our study focuses on unconventional, postmodern (Kreutz, 2005) visual communication systems that create a plural, heterogeneous, non-consistent appearance for the represented organisation or brand. In these cases, following the rules established during the design phase, one or more of the components get modified based on a

factor that is considered an independent variable (Van Nes, 2012; Parente et al., 2019).

As it can be seen below (Figure 1), contrary to static visual identities, both dynamic and static components and relations may be integrated into DVIs. It is the responsibility of the brand management and designer to decide whether dynamism is present and, if so, to what extent.

A momentous characteristic of DVIs is the fact that they can adapt to new conditions since the metamorphosis has been coded into their operation. They are not only modifiable but could also be called live, or in other words, active (Felsing, 2009; Van Nes, 2012; Lelis, 2019).

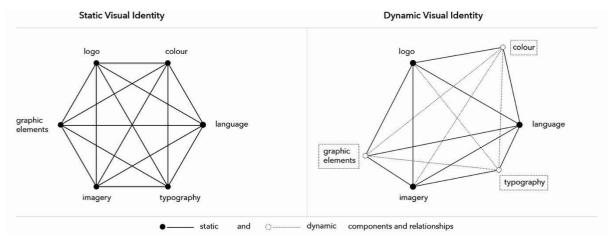
The latest publications on the subject (Lelis, 2019; Parente et al., 2019) examine the mechanisms utilised in DVIs and explore their visual attributes. Another branch of study investigates the operation of DVIs and the technological aspect of their creation (Martins et al., 2018; Parente et al., 2018; Rebelo et al., 2018; Pereira et al., 2019).

The comprehensive literature review and taxonomy of Martins et al. (2019) intend to bring together the efforts made in the DVI literature and summarise the diverse world of DVIs in a single model. The authors recommend that DVIs be analysed through the examination of (i) identity focus, (ii) variation mechanisms, and (iii) features. In terms of identity focus, two types are distinguished: graphic mark and visual system focused DVIs. This feature shows the part of the DVI where dynamism primarily appears. Is it present in the graphic mark that identifies the entity or if it is more present within the visual language? A variation mechanism can be any procedure that is experienced visually: changes in colour, the combination of graphical elements, content variations, positioning, repetitions, changes in size, changes in shape. As for functions, features that are not visual characteristics of DVIs can be mentioned: generativity, flexibility, fluidity, informativity, interactivity, and reactivity. These functions portray the operating characteristics of the DVI systems.

Figure 1.

Schematic models of the components and relations of static visual identities

and a hypothetic dynamic visual identity



Source: edited by the author based on Van Nes (2012, p.7)

Digital and Generative DVI

A DVI system can be considered digital if a digital component or procedure is an integral part of its creative concept. The subject unit of our study is the digital and simultaneously generative DVI.

The definition proposed by Martins et al. (2019, p. 2) can serve as a basis: "the variations of the DVI are generated by an algorithm. The designer develops an algorithm that generates one or more elements of the VI system [...] Designing by coding allows the designer to create custom tools that lead to new kinds of imagery and highly customised designs". We suggest that the category be named generative rather than generated since it better expresses the active nature of these kinds of DVIs. According to the (Merriam-Webster, 2022) dictionary, the term generative refers to "having the power or function of generating, originating". The term is derived from Latin and can be interpreted as "producer" or "creator" (Zaicz, 2006), it clearly reflects the principles of operation in such visual systems.

One of the early DVIs, created through an algorithmic procedure, was the visual identity of the Hannover EXPO 2000 (URL3) where dynamism appears in the visual system through a digital procedure. As the logo is the central element of visual identity (Papp-Váry & Gyémánt, 2009), it is no surprise that this element was the first one where dynamism appeared in the early generative DVIs. One of the earliest documented instances of generative DVIs that operated in real-time and could be considered

live was the logo (URL4 of the Rhizome website published in 2001, where a system capable of generating a potentially infinite variety of logos using the IP addresses of website visitors was created.

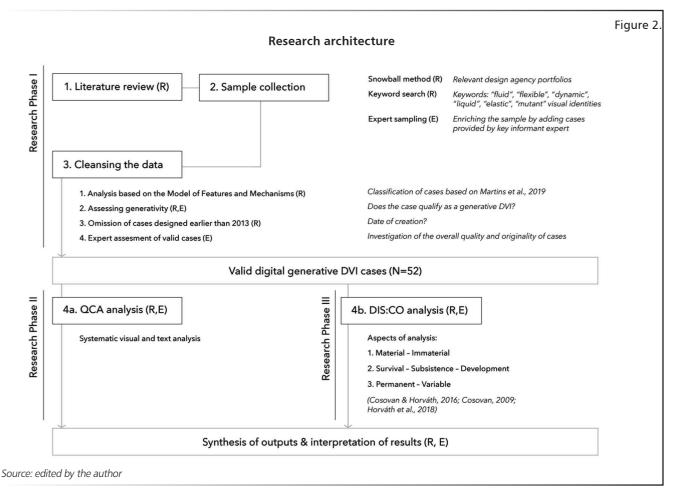
Thanks to the technological innovations utilised, info-communication has become one of the most highly researched areas within innovation research (Keszey & Zsukk, 2017), thus, it can be said that it is a field that is at the forefront of using new technological solutions. The research of phenomena related to digitalisation in marketing will likely become even more relevant due to the growing weight of the usage of artificial intelligence, Big Data-based marketing, the utilisation of machine learning procedures, and the data collection and market research methods offered by social media.

Methodology

Research goals

A central element of the expected theoretical contribution is for the findings to create further potential openings in research on the subject, and to provide starting points for interdisciplinary discourse, and theorisation.

An important objective of the investigation is to cover a significant research gap, thus, newer DVIs designed after 2013 are explored. Since this period can be considered insufficiently researched even in international publications, this characteristic may be considered an important novelty.



In light of all the above, the central question of the study is the following: "What dimensions can be explored in the qualitative characteristics of generative type digital dynamic visual identities?"

Due to the nature of the research question, the use of a qualitative research design was deemed most appropriate. To promote discovery and exploration, sample units have been collected, filtered, and systematically analysed through two qualitative analytical procedures (Figure 2). After the data had been produced, the Features and Mechanisms model of Martins et al. (2019) was utilised for data cleansing. Our findings have been produced through the synthetisation of the conclusions of qualitative content analysis and DIS:CO analysis carried out on the sample derived in the an abovementioned way. Thus, this study can be classified as a hybrid study as it combines more than one qualitative method in a parallel manner (Neulinger, 2016).

A master's degree graduate designer expert with international study and work experience has also participated in the production, cleansing, and analysis of the data. Thus, the triangulation of data collection methods, analytical procedures, and researchers all promote research quality and the reliability of results.

I. Research Phase: Data Collection and Classification

Since the utilisation of DVIs is widespread globally, a large number of cases have not been compiled into one collection, and besides, new cases appear on a regular basis. Thus, the snowball data collection technique was considered the most appropriate for producing the sample. Its basis was the cases presented in previous publications and the portfolios of well-known designer studios. This was complemented by detailed keyword research with the following terms from the relevant literature: fluid, flexible, dynamic, liquid, elastic, mutant, and dynamic visual identity. The third data collection method was expert sampling.

Three criteria functioned as filters for sample units: 1. If examined through the analytical framework of Martins et al. (2019), the given case can be conceptualised as a DVI, 2. it fits the definition of generative as a characteristic, 3. the year of creation should be later than 2013.

In this time-intensive phase, excluding visual identities that did not qualify as DVIs was important. These, although they may appear to include variation mechanisms that DVIs also operate by, do not carry dynamism, change, and variability at the core of their creative concept. After determining the identity focus and analysing the variation mechanisms, features were analysed. This is a more difficult task since these characteristics cannot necessarily be perceived through visual examination only. Here, we could rely primarily on textual data such as descriptions and case studies published by designers and owners. If a functioning DVI was available, experimenting with and testing it was also helpful. We continued the research with cases that fit the definition of generativity laid down earlier. After expert opinions were established and more

than a hundred cases were filtered out, the case number was determined as N=52.

II. Research Phase: Qualitative Content Analysis

Each sample unit consists of the visual presentation of the given DVI case and its complementary description texts, and extended case studies published by their designer or owner, which creates the opportunity for both visual and textual qualitative analyses. In the case of such richer data sources, the method of content analysis can be utilised successfully, which can reveal further layers of meaning (Bell, 2001). After the analysis, conclusions can be drawn regarding the context and the message of the content as well (White & Marsh, 2006). The identification and coding of available themes and patterns are subjective but provide the opportunity for creating scientific interpretations (Zhang & Wildemuth, 2009). During the research, the various layers of both the written and the visual content were systematically analysed and the findings were synthesised and summarised. With the help of this inductive procedure, we have been able to get an insight into both the direct and the latent layers hidden in our rich data. The goal of this exploratory investigation was not the quantifiable analysis and descriptive characterization of the sample, but the identification of DVI characteristics that are useful for the outlining of the dimensions sought in our research question. During the coding and interpretation of the results, a consensually approved intersection of the findings of the author and of the external expert has been accepted, excluding any extreme or ambiguous cases.

III. Research Phase: Qualitative DIS:CO Analysis

To increase the reliability of the findings, a second analytical procedure has also been utilised. As the subject matter is tightly connected both to design and marketing communication, designcommunication (that is: DIS:CO) was a straightforward choice. This widely applicable approach and method is an intentional collision between the scientific fields of design and business communication (Cosovan, 2009; Cosovan & Horváth, 2016; Cosovan et al., 2018; Galla, 2021; Horváth & Horváth, 2021). It "uses a designer's toolkit to help its users integrate human needs, technological opportunities and the criteria of business success into the development of strategies, organisations, and products." (Cosovan et al., 2018, p. 233).

The application of this methodology and approach in the development of creative products make it possible to cater to a more holistically framed set of human (beyond consumer) needs in a humanistic way. It is a set of approaches and tools that can be valuable even beyond development work. It can enrich us with perspectives through which building connections with our audience can, according to the standards of DIS:CO (Cosovan, 2015; Cosovan & Horváth, 2016; Galla, 2021), be considered objectively and subjectively good for the whole of the social context.

The projects represent a high level of professionalism that apply the guidelines and principles of the DIS:CO approach in creative development recognised internationally, as evidenced by several international awards. Besides the success of the Red Dot Design Award-winning DSI Salt Inhaler, Teqball, Coco Dice and Nosiboo products designed by Attila Róbert Cosovan and CO&CO Designcommunication, other substantial recognitions of DIS:CO include the German Design Award, the Hungarian Design Award, the Ferenczy Noémi Award, Millenium Award, and the Finewaters Taste and Design Competition.

Beyond the practical application of DIS:CO, the method is also utilised in different scientific fields within the research programs of the Corvinus University of Budapest. This piece of innovative Hungarian know-how is a contemporary alternative (Cosovan et al., 2018) and competitor to design thinking, while also complementing it: it supports solving challenges that Dorst (2011) specifies as open-ended. This act demands divergent thinking instead of a convergent closed problem-solving strategy. And this is how it becomes a valuable element of a multi-perspective qualitative research toolkit. As it is originally rooted in design practice, it is very well suited for the analysis of creative products, artworks, and design artefacts as well.

The cornerstones presented below allow for an abductive analysis of the content, which is carried out during the reflexive thematic analysis. We are using this approach to complement the inductive analysis utilised in the second phase of the research, and thus, it may offer new insights. As Peirce (1934) suggests: " [Abduction is] the only logical mechanism that introduces new ideas into a scientific body of knowledge" (Timmermans & Tavory, 2012, p. 170). The analytical method presented below can be labeled as pragmatic, since "the empirical "reality" was created by the researchers involved in the observation" as Mitev (2012, p. 20) suggests. In our case, this pragmatism is also rooted in the history of the method, its approach is practical, its principles include: "design = doing good" (Cosovan, 2009; Cosovan & Horváth, 2016). DIS:CO, originally developed to design creative products, has become a holistic paradigm in design theory, and it also excels in the promotion of scientific understanding and social innovation as the application of the method by Galla (2021) underpins it.

According definition, its designcommunication means communication integrated into development (Cosovan, 2009), generated by the designers' ability to establish connections. This integration of communication into design can also be induced and analysed subsequently, with the help of the following interrelationships: investigation of 1. Material - Immaterial qualities, the assessment of how 2. Survival – Subsistence - Development aspects emerge in the phenomenon and examination of 3. Permanent - Variable elements (Cosovan & Horváth, 2016; Cosovan, 2009; Horváth et al., 2018). The designers' and creators' optimum can be found through these holistic interrelationships (Cosovan, 2017), and we can also use these interrelationships to discover how the latent qualities of the examined data can be interpreted and transformed in a meaningful way for research in the field of design and marketing as well. In this phase of our research, we analysed the cases along these three guidelines, to discover new perspectives through a divergent thinking strategy.

Findings

The research question of our study is the following: "What dimensions can be explored in the qualitative characteristics of generative type digital dynamic visual identities?"

The themes and patterns identified through a visual and textual qualitative analysis of the DVI cases collected and identified during the first phase of research, and the attributes recognised through a DIS:CO analysis, have revealed a total of six dimensions of larger thematic units. Three of these have proven dominant both in phases II and III of the research.

Based on the synthesis of the findings of the research methods, we have identified the following dimensions (Table 1) as domains that are suitable for the characterisation of operational principles and the attributes of DVIs.

Table 1.
The three analytical dimensions of the attributes of digital dynamic visual identities

DIMENSIONS	POLES
Origin of Independent Variable	External — Internal
Operational Autonomy	Autonomous — Heteronomous
Extent of Control	Low — High

Source: author's own editing based on the research findings

All demonstrated dimensions can be described as: 1. they may characterise any domain of the components and relational systems in between them (see: Figure 1) of the DVI, 2. their presence is independent of the technologies and media used, although certain industry patterns can be observed, it can be stated that 3. they are suitable for the assessment of DVIs regardless of sector. The poles should be understood not as categories but as a continuous spectrum.

The interpretation and illustration of the dimensions, presented within the limits of this publication and through typical examples describing the poles, can be found below.

Origin of Independent Variable Dimension

As the definition of DVIs reflects, one of their characteristics is that the change that takes place within the visual system is not ad hoc but adapts to the state of an independent factor as a result of purposeful design. Digital generative DVI systems have an input side that drives them as well as an output side that manifests through variation mechanisms. The input factor is the independent variable that is an influential component of the system, whereas, as the poles of the referring dimension indicate,

its origin may be decisive for the nature of DVI. One of the poles of this dimension can be associated with cases where this variable is external, where it can be defined by the market or the social and physical environment. In such cases, the creative concept utilises an item of knowledge mutually held by and with stakeholders, or a factor that is closely related to the brand. This can make understanding easier for the audience, although in most cases they cannot influence the course of its change. In the case of internal variables, however, change can be steered directly, internally. This creates the opportunity for shared value creation together with the stakeholders. Through the utilisation of a DVI specialised for the expression of internal characteristics, the independent variable remains closely linkable to the represented entity, their relationship is not just poetic or associative.

Advocating for the use of solar energy, the energy sector brand Powen (URL5) employs malleable graphic emotions in its logo. The colours of these elements are inspired by the changing palette of light throughout the day, referring to the varying nature of energy. In this case, the referenced periodically renewing variable, although closely connected to the entity's operation, is *external*. This visual identity received the German Design Award 2020 for excellence in communications design.

In the case of the 20th Nördik Impakt Festival (URL6), the independent variable input of the DVI system is more internal from the brand's point of view. Those interested in the event can directly customise the experimental poster of the festival to their own musical and visual taste through an online application (URL7).

The Operational Autonomy Dimension

As these are programmed visual systems, the theme of automation was also present in the DVIs we examined. Based on the patterns we have uncovered, a distinction can be made between concepts that operate independently and as a closed unit after designing, and open systems that require interventions. One pattern observed during the investigation is that operational autonomy is linked to the nature of the touchpoints utilised by the represented entity. The basis for heteronomous operation is typically created through interactive platforms that enable real-time two-way communication, as in this way, users can get direct feedback about the outcomes of their actions that influence the visual identity.

The logo of Sonantic (URL8), designed by Pentagram, comes to life through animated form, in real-time. The sophisticated waving motion of the letter "O" sensitively symbolises the fine vibrations of the human-like sounds produced by the startup, synthesised by artificial intelligence. The visual system does not need to be controlled by humans, it operates *autonomously* after designing, without any further interventions. The DVI can generate innumerable logo variations, at virtually no additional cost.

A good example of DVIs with a *heteronomous* operation is present in the Hungarian Design Award 2014 winning concept of the visual identity of Lamantin Jazz Festival

(URL9), which takes advantage of both interactivity and reactivity. In the case of this Hungarian-designed DVI, the typography is – authentically – influenced by musical sounds. The system has an interface (URL10) where visitors can interact with the logo: they can drive it with their own voice or with music. In summary, due to its heteronomous quality, the DVI requires human contribution for its visuals to be activated. This attribute can serve as an excellent catalyst of engagement, as it is able to create an experience through the anticipated elaboration. A heteronomous DVI can also be a cost-efficient solution, as customisation does not require the users to have extraordinary graphics or technical knowledge after it had been designed. The managers of the represented brand can also deliver numerous communication materials. As an example, the Schwanensee (URL11) DVI provides the project owners with an application that enables them to create unlimited design variations for promotional materials for their events effortlessly from a web browser.

The Extent of Control Dimension

The theme of control emerged as an immaterial factor during the DIS:CO analysis and as latent content during the analysis. The poles of the *extent of control* dimension — which may also be understood as the dimension of power — focus on the extent to which the owner can maintain control over the outcomes of the DVI throughout its operation. Waiver of control may evoke the possibility of risks in the reader, however, the cases investigated entailed a positive phenomenon instead: constructive cooperative actions between the stakeholders engaged, through the extension of responsibility. What we observed in the case of Nördik Impakt (URL6) confirms this: "The generative design set up on the website has enabled the public to create more than 11,000 artworks, used to print flyers, posters and merchandise."

Waiver of control may at the same time also be interpreted as an expression of a consumer-oriented approach. In the case of such approaches, consumer empowerment is facilitated, that is, this range of stakeholders enter an area of corporate operation (Gálik, 2018) within a preset framework, and they shape it actively. By handing over authority, the brand owner expresses their trust in a group or phenomenon that is important to them. This can also be interpreted as a symbolic act through which the brand, by opening control over the outcomes, also makes an indirect reference to its own approach to power. With a lower level of control, a DVI provides an opportunity not only for the expression of identity but also for shaping it. This is in accordance with the branch of literature that focuses on the induction of stakeholders' identification, presented by Balmer (2008) – it can be understood as a manifestation

The DVI (URL12) was designed for the "Go with the flaw" campaign of DIESEL generated audio-reactive animations projected at campaign venues using the pictures uploaded to the social media platforms by the target audience. The brand, by partially relinquishing the control over visual communication, opened the possibility for real-time visual dialogue between participants and the brand. As participants are free to contribute in unregulated ways, this system can be described with a *low* level of control.

A DVI system can also operate under a high level of control. In the dynamic logo of Spektr (URL13), fragments of the cinematographic products created by the media production company can be seen. The everchanging content appearing in fixed letter forms presents the creative products created by the company directly, albeit in its fractions. It is an example of container-type DVI according to the classification of Van Nes (2012). In this example, although the presentation remains varied, it provides a *high* level of control to the owner.

Other Findings

The various phases of the research have also yielded unexpected findings that provide theoretical contributions and useful practical considerations for the research and designing of such special visual identities.

The first consequential recognition was made during the collection and classification of DVIs. Through the application of the Features and Variation Mechanisms analytical framework, 17 visual identities were deemed appropriate for further analysis. These utilised several variation mechanisms and thus could lead to a false identification as DVIs. In several cases, identities were misclassified as dynamic visual identities by the designers or brand owners themselves. This phenomenon reflects the fragmented nature of the literature on the subject and the lack of agreement on the naming conventions. The visual identities were eliminated due to the above reasons during the expert data cleansing process and the textual analysis typically used colour variation, combination, or content variation mechanisms in their visual language. These cases predominantly entailed umbrella brands, organisations operating with several subdivisions, or brands communicating by motion graphics. Therefore, we suggest visual analysis alone is not sufficient for the identification of DVIs, richer data sources need to be analysed, so that it can be determined whether dynamism is a crucial element of the creative concept that serves as the core of the visual system. It must be determined whether the designer's creative strategy is rooted in change and variability in a truly meaningful way, or if this attribute is only l'art pour l'art.

Another important finding is that, based on our analysis, generative type digital DVIs can indeed be considered a contemporary manifestation of postmodern marketing as well. In the cases examined, the factors of construction, openness, and adaptability were all present. These are all related to the patterns of plurality and diversity, which can be jointly considered postmodern characteristics according to Mitev and Horváth (2008). All of this is supporting the argument of Kreutz (2005): since DVIs, embedded into a contemporary social history context, fulfill postmodern expectations.

Conclusion & Implications

It has become apparent through our investigation that not only media change, but the role of visual identities is also in the midst of a transformation in the digital age: beyond the primary function of identification, further layers of connections are also created, which may encompass various types of brand-audience relations. Through the customizability and versatility of DVIs the possibilities for fostering engaging user experience are also increasingly in focus.

The examples presented in this study demonstrate that the data and information that drive visual communication can be derived from consumers both directly and indirectly. As a result, they can become an integral part of customer value creation and customer experience design. Enterprise information systems that manage customer information and user data can be integrated with digital generative systems that are applied in visual communication. DVIs can even go beyond the mere utilisation of input data by extracting additional information from stakeholders and engaging them through interaction and reactivity. With the help of easy personalisation, mass customisation can also take a fully automated form.

By opening the dogmatic consistency of visual appearance and allowing external stakeholders and factors to modify it, a higher level of engagement can be achieved, which can help enhance customer experience. As pointed out by Kenesei and Seprődi (2017), customer experience is formed through encountering various touchpoints and based on comprehensive impressions. Since DVIs have a significant influence on the quality of brands' touchpoints, they can be considered particularly well suited for influencing the customer experience. In certain cases, the visual identity can be understood as a service in itself (e.g., Lamantin Jazz Festival, Nödik Impakt), the visual system helps to fulfill a need for self-realisation by simultaneously meeting the communication needs of the represented company.

The most significant theoretical implication is that the findings indicate the heterogenous versatility of generative dynamic visual identities, thus, the theoretical exploration of the subject can be further enriched through research (that differentiates DVIs on the basis of the presented dimensions) of the visual communication systems that fit within the domain defined by the three dimensions uncovered in the study. It is also illustrated by the examples, that the fields of design and marketing are connected to the DVI phenomenon in several ways. The findings presented may serve as a basis for interdisciplinary scientific value accumulation. The explored dimensions support the fundaments of this, as they help us describe and differentiate between generative DVIs, not only based on their materially present visual layout or functions that are central to the aspect of design, but also from a marketing perspective - based on their stakeholder focused internal characteristics.

Specific practical recommendations can also be provided along with these developments. Special designer

know-how and toolkit are essential for the successful utilisation of DVIs, accompanied by the preparedness of the project owner with clear business, marketing, and communication goals. The creative strategy utilised in a given project can be flexibly adapted to the brand personality, financial resources of the represented entity, as well as to the consumer and market expectations it needs to meet.

Through the *internal* independent variable, the brand can express its original internal characteristics, and its unique, authentic features (the essence of the brand). Data derived through marketing activities supported by information systems can also be used for the development of data-driven visual communication. The utilisation of an *external* variable can help capture elements of reality whose variation is recognised by the target audience, and thus, this shared knowledge can promote the understanding of the DVI.

Autonomously operating systems typically do not require further resources or the intervention of the designer after designing, thus, their utilisation may also be similar to that of static visual identities, but with the added benefits that come with variability. The operation of heteronomous systems requires more effort from stakeholders which can take the form of either financial or psychological costs. If a brand wishes to address and engage its audience through the DVI, these factors need to be considered by the management. The heteronomous operation can come with high returns as well: the tools of co-creation can enhance consumer experience; however, care needs to be taken in these cases for the DVI to be utilised within a holistic approach.

The utilisation of a DVI offering *low control* can be an ideal solution if this suits the character, personality, promise, and message of the represented entity. In this case, although the owner seemingly foregoes control, this may be a rewarding strategy as it may yield constructive contributions from the stakeholders involved in control. DVIs with an optimally *high level of control* can also be designed for brands that wish to unconstrained events that they perceive as risks. The benefits of DVIs can be taken advantage of even in these cases, and even brands with this approach can keep up with the competition driven by increasing digitalisation.

Future Research and Limitations

Due to the explorative nature of the research and the relatively uncharted state of the subject matter, significant effort has been invested in the exploration of potential research directions as well. Besides the body of knowledge, the research constitutes, another aspect of scientific value can be found in the research gaps it uncovers – what else needs to be explored and what questions are truly relevant for the subject of DVIs? In the following paragraphs, the gaps identified through the research and the opportunities offered by any limitations will be presented in detail.

There are three major fields in this study that could be addressed in future research. First, the study

revealed the latent dimensions that characterise the creative strategy. However, the different specific creative strategies were not explicitly investigated in the study. Thus, the empirical results reported that in the case of the DVIs investigated, the static and dynamic nature of the visual elements carries certain meanings. However, potential narratives could not be explored due to a lack of the necessary data. Uncovering the narratives and interpretations coded into DVIs could yield interesting and valuable results, but due to the specificities of the subject, these can only be explored with the help of the diverse segments of stakeholders.

The second limitation is a consequence of digital operation: a large number of unique outcome variations can be generated through generative DVIs. In many cases, a virtually infinite number of mutations can be created, as in the previously presented cases of Schwannensee, DIESEL, or Spektr, among others. In the case of these DVIs that generate numerous outcome variants, the following pattern emerged from the data: the creators or owners mentioned these DVIs as cost-efficient, sustainable assets that are expected to support that brand for a long time. These visual systems presumably do possess these attributes if these accounts are considered reliable sources of information. However, the collected sample was not suitable for the exploration of this matter, and as a result, the dimensions of time and cost were not included in the findings. The analysis of the life cycle of dynamic visual identities requires further data collection, longitudinal research, a case study approach, or possibly a comparative perspective.

The third potential for future study lies in the limitation that, the utilisation of technological innovations in marketing communication lags behind its potential, as Keszey (2007) has pointed out earlier as well. Concerning our subject matter, this phenomenon can be declared partially confirmed, as, during our research (and contrary to our preliminary assumptions), we have not yet seen the state-of-the-art information technology solutions that are widely used in other business fields. For example, there were no signs of using machine learning (ML), systems using artificial intelligence (AI), or the Internet of Things (IoT). As the pace of technological development seems to keep accelerating (Kurzweil, 2005) and as these innovations are becoming increasingly widespread in marketing practice, digital DVIs that use available technologies which have not been utilised here are expected to emerge in the near future, which would create the need for supplementing the findings of this study.

Summary

The three dimensions explored (*I. Origin of the independent variable, 2. Operational autonomy, 3. Extent of control*) and their respective poles can serve as pragmatic reference points for designers and brand owners and can be useful during brand development and the design of the visual communication system. It is an important finding that along these dimensions, clients, as well as their designers

can assess the competitive landscape and their own creative concepts within a shared framework.

This is no longer just the dawn of the post-logo era: we are already living in it. The acceleration of the pace of technological development is expected to bring about the further development of communication media as well. Designcommunication (DIS:CO) research and development methods can support those interested in providing an immersive brand experience, authentic and unique visuals in this digital age.

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Hyperlinks

- URL1: 2028 Olympics in Los Angeles DVI: https://www.designweek.co.uk/issues/31-august-6-september-2020/2028-la-olympics-logo
- URL2: Eurovision Song Contest 2020 data-driven DVI: https://www.red-dot.org/project/eurovision-songcontest-2020-48596
- URL3: EXPO 2000 One of the first digital DVIs: http://www.qwer.de/html/projekte expo.html

- URL4: Rhizome An early generative DVI: https://rhizome.org/editorial/2001/sep/05/the-worlds-first-generative-logo
- URL5: Powen DVI https://saffron-consultants.com/case-studies/powen
- URL6: Nördik Impakt DVI https://www.behance.net/gallery/107703989/Noerdik-Impakt-20
- URL7: Nördik Impakt poster generator: https://poster. nordik.org
- URL8: Sonantic DVI https://www.pentagram.com/work/sonantic/story
- URL9: Lamantin DVI https://www.behance.net/gallery/17195287/Lamantin-Identity
- URL10: Lamantin logo generator https://hiddencharacters.github.io/lamantin/#mic
- URL11: Schwanensee DVI https://www.patrik-huebner. com/work/schwanensee-a-dynamic-identity-drivenby-dance
- URL12: Diesel DVI https://www.patrik-huebner.com/work/diesel-go-with-the-flaw
- URL13: Spektr DVI https://lava.nl/projects/spektr