

Um Ihnen Zeit beim Lesen zu sparen und direkt auf den Punkt zu kommen, habe ich die Teile der Diplomarbeit meiner Kollegen entfernt und nur meine eigenen Abschnitte beibehalten. Jedoch habe ich das Inhaltsverzeichnis behalten, um eine klare Struktur der Diplomarbeit zu bieten, sowie das Resümee & Ausblick meiner Kollegen. Mein Teil der Diplomarbeit wurde auf Englisch verfasst, da ich nur so die vorgegebene Wortanzahl einhalten konnte. Der theoretische Teil endet auf Seite 56, und die Dokumentation des praktischen Teils beginnt auf Seite 78.

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Ausbildungsschwerpunkt Druck- und Medientechnik**

DIPLOMARBEIT

**SETUP OVER ROLLUP
Redesign und die dazugehörige
Werbekampagne für eine Autofolierungsfirma.**

Ausgeführt im Schuljahr 2021/22 von:

Alexandru Bogdan	6aKMP
Erdogan Gölge	6aAMP
Kevin Englisch	6aKMP

Betreuer/Betreuerin:

Ing. Christian Hradil BSc

Wien, am 28.06.2022

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Unterschrift:

Alexandru Sebastian Bogdan

Erdogan Gölge

Kevin Englich

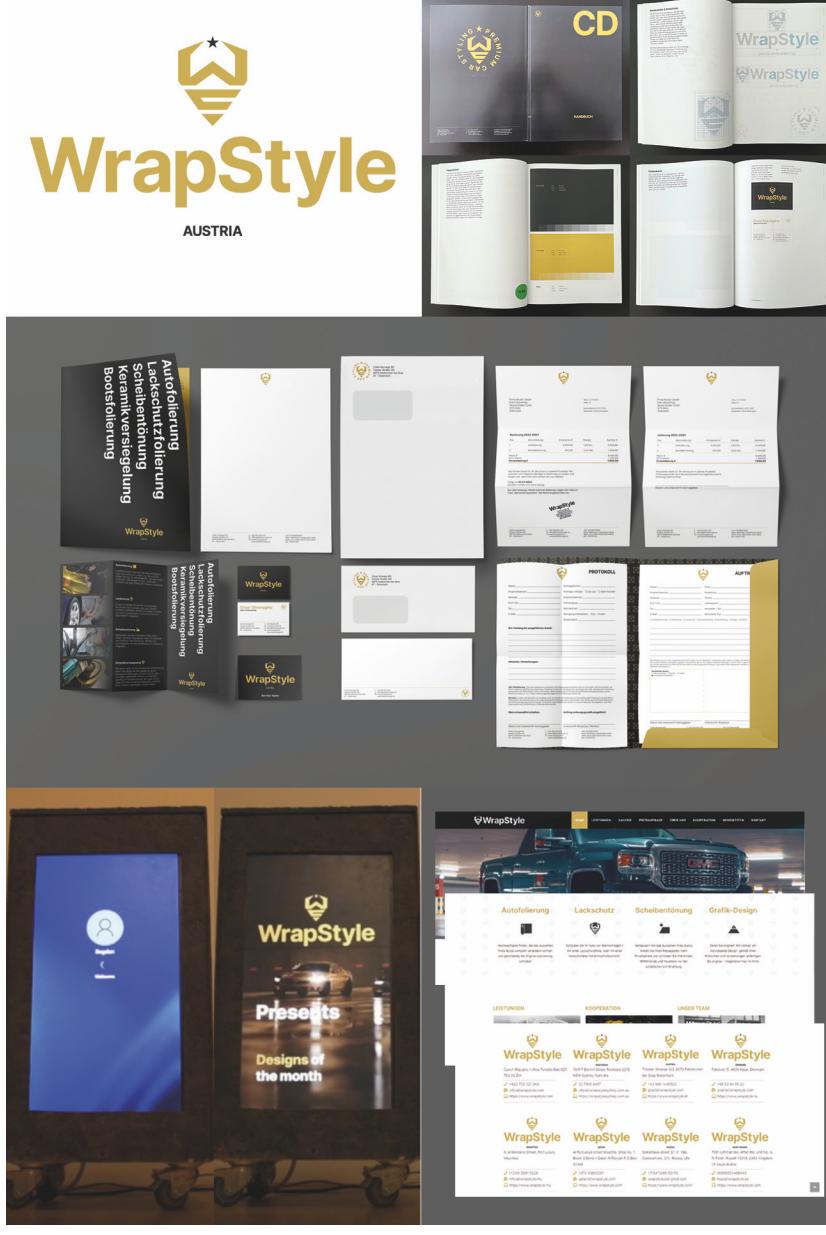
DIPLOMARBEIT DOKUMENTATION

Namen der Verfasser/innen	Alexandru Sebastian Bogdan Erdogan Gölge Kevin Englich
Jahrgang Schuljahr	6aKMP 2021/22
Thema der Diplomarbeit	Setup over Rollup Redesign und die dazugehörige Werbekampagne für eine Autofolierungsfirma
Kooperationspartner	WrapStyle Austria

Aufgabenstellung	Das Projekt dient dazu, dass das gesamte Corporate Design der Franchise-Kette WrapStyle neu redesignt wird. Hierbei wird auch der Fokus auf Marketingmethoden gesetzt. Die dazugehörigen Geschäfts- und Werbedrucksachen sowie die Website sollen gestaltet werden. Weiters wird ein fernsteuerbares Werbegerät entwickelt, wobei der Kunde die Möglichkeit hat, die Designs jederzeit mit geringem Aufwand und Kosten ändern zu können. Das fernsteuerbare Werbe- bzw. Präsentationsmittel soll das traditionelle Roll-up-Banner im Innenbereich ersetzen.
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Realisierung	<ul style="list-style-type: none"> • Entwicklung eines Corporate Designs (inkl. Logo, Hausfarben und -schriften, Muster und Icons) • Redesigns der Geschäfts- und Werbedrucksorten • Die Erstellung eines CD-Handbuches • Entwicklung einer Marketing-Strategie • Erstellung von animierten 3D Werbegrafiken • Erstellung des Werbegerätprototyps • Entwicklung einer Unternehmenswebseite im CMS Wordpress • Die Optimierung der Webseite für Suchmaschinen
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Ergebnisse	<ul style="list-style-type: none"> • Redesign des Corporate Designs • Redesign der Geschäfts- und Werbedrucksorten (Digital) • CD-Handbuch als Printprodukt • Marketing Strategie • Animierte 3D Werbegrafiken • Digital Signage Werbegerätprototyp • Neue Webseite (CMS Wordpress) • SEO
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<p>Typische Grafik, Foto etc. (mit Erläuterung)</p>	 <p>The image displays a comprehensive portfolio of WrapStyle's work. At the top, the company logo 'WrapStyle AUSTRIA' is shown with a stylized shield icon. Below the logo are several examples of printed materials, including brochures, envelopes, and certificates, all featuring the WrapStyle branding. In the center, there is a dark-themed brochure spread showing various services like Autofolierung, Lackschutzfolierung, Schiebeblattfolierung, Keramikversteifung, and Bootsfolierung. To the right, there are more document samples, including a 'PROTOKOLL' (Protocol) form. At the bottom, two large-format digital displays are shown, one displaying a user interface and the other showing a car wrapped in blue vinyl with the text 'Present' and 'Designs of the month'. The website URL 'www.wrapstyle.at' is visible at the bottom right of the portfolio area.</p>
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<p>Teilnahme an Wettbewerben, Auszeichnungen</p>	
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<p>Möglichkeiten der Einsichtnahme in die Arbeit</p>	<p>Die schriftliche Arbeit findet man in der Bibliothek: der Höhere Graphische Bundes-Lehr- und Versuchsanstalt Wien XIV</p>
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<p>Approbation (Datum / Unterschrift)</p>	<p>Prüfer/Prüferin Ing. Christian Hradil BSc</p>	<p>Direktor/Direktorin Abteilungsvorstand/Abteilungsvorständin Mag. Kurt Kölli Dipl.-Ing. Clemens Leopold Ulrich</p>
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DIPLOMA THESIS

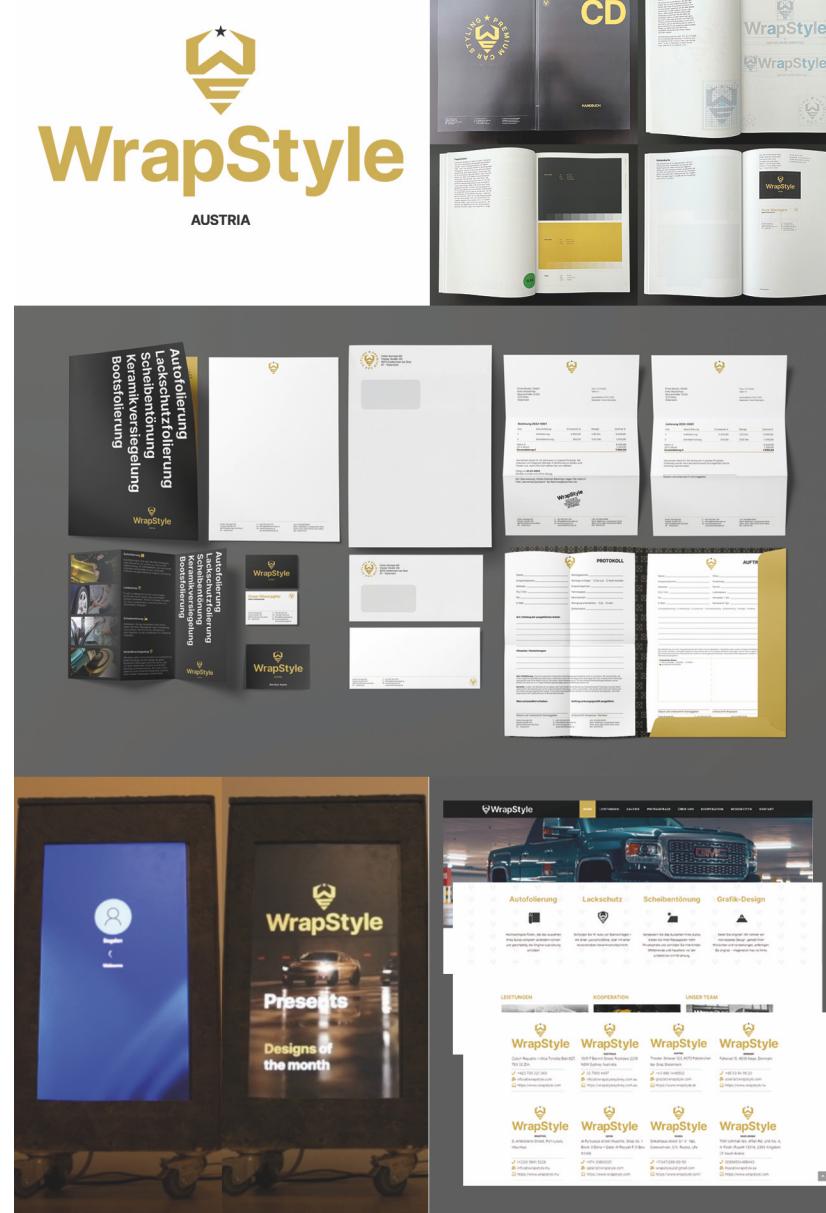
Documentation

Author(s)	Alexandru Sebastian Bogdan Erdogan Gölge Kevin Englisch
Form Academic year	6aKMP 2021/22
Topic	Setup over Rollup Redesign and associated advertising campaign for an car wrapping company.
Co-operation partners	WrapStyle Austria

Assignment of tasks	<p>The goal of this project is to completely restructure the franchise WrapStyle's corporate identity. In this case, the emphasis is also on marketing methods.</p> <p>The accompanying business and promotional materials, as well as the website, should be designed. Furthermore, a remote-controllable promotional device will be developed, giving the customer the ability to change the designs at any time with minimal effort and cost. The remote controllable advertising (or marketing) The traditional Roll-up-Banner in the interior will be replaced by a presentation medium.</p>
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Realisation	<ul style="list-style-type: none"> • Development of a corporate design (including logo, corporate colors and fonts, patterns and icons) • Redesigns of business and promotional print formats • Creation of a CD-Handbook for the redesigns • Development of a marketing strategy • Creation of animated 3D advertising graphics • Creation of a promotional device prototype based on digital signage
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Results	<ul style="list-style-type: none"> • Redesign of corporate designs (logo, corporate colors and fonts, Muster, Icons) • Redesign of business and promotional print formats (digital) • CD-Handbook as a print product • Marketing strategy • Animated 3D advertising graphics • Digital Signage Advertising Device Prototype • New Website (WordPress CMS) • SEO
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	 <p>The portfolio displays various branding and design projects for WrapStyle Austria, including brochures, business cards, envelopes, and website designs.</p>
<p>Illustrative graph, photo (incl. explanation)</p>	

Participation in competitions Awards	
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Accessibility of diploma thesis	The written project can be found in the library: Höhere Graphische Bundes-Lehr- und Versuchsanstalt Wien XIV
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Approval (date / signature)	Examiner Ing. Christian Hradil BSc	Head of College / Department Mag. Kurt Kölli Dipl.-Ing. Clemens Leopold Ulrich
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Zusammenfassung

Das Ziel war, das Corporate Design, die dazu gehörigen Drucksorten und die Homepage für die Firma zu redesignen. Weiters lag die Aufgabe darin, die Suchmaschine für die Homepage zu optimieren und das CD-Handbuch für die redesigneden Elemente zu gestalten. Der technische Aspekt dieses Projekts lag vorallem beim Werbegerät auf Basis eines digitalen Signages. Das Werbegerät soll dem Klienten ermöglichen mehr Geld sparen und die Designs je nach Belieben ändern zu können. Somit wurde auch eine 3D Animation nach den neuen CD-Regeln erstellt. Es soll auch gleichzeitig praktisch, ökologisch und effizient sein. Das fernsteuerbare Werbe- bzw. Präsentationsgerät soll den klassischen Roll-Up Banner im Indoor-Bereich ersetzen.

Deutsch

The goal was to redesign the corporate design, the corresponding printed materials and the homepage for the company. Furthermore, the task was to optimize the search engine for the homepage and to create a CD manual for the redesigned elements. The technical aspect of this project was mainly the advertising device based on a digital signature. The advertising device should allow the client to save more money and to change the designs according to his wishes. Thus, a 3D animation was also created according to the new CD rules. It should also be practical, ecological and efficient. The remote-controlled advertising or presentation device should replace the classic roll-up banner in the indoor area.

Englisch

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Vorwort

Die Zusammenführung des Teams erfolgte durch das Mitglied Kevin Englich. Das Ziel der Diplomarbeit war, das Corporate Design eines bekannten Autofolierungsfranchises mit dem Namen WrapStyle zu redesignen.

Die Themen wurden nach den jeweiligen Interessen und Erfahrungen der Teammitglieder aufgeteilt. Das Redesign des CDs wurde von allen Teammitgliedern durchgeführt. Der Hauptfokus von Erdogan Gölge lag auf Geschäfts- und Werbedrucksorten sowie CD-Handbuch. Das Corporate Design Handbuch ist ein umfassendes Leitfaden für die ganzen redesignten Designelemente von dem Unternehmen. Die Gestaltung der gesamten Drucksorten wurde einheitlich und funktional gehalten. Alexandru Bogdan hat sich hauptsächlich im Zusammenhang mit Digital Signage, auf die 3D Werbegrafiken spezialisiert. Diese können in einem selbstgebauten Prototyp mit einem Werbedisplay per Fernsteuerung abgespielt werden. Zusätzlich hat er sich mit Marketingmethoden sowie Strategien beschäftigt. Kevin Englich hat die Webseite mit CMS WordPess entwickelt und anschließend eine Suchmaschinenoptimierung durchgeführt. Die Webseite wurde nach den Regeln des redesignten CDs gestaltet, um die Wiedererkennung gewährleisten zu können.

Alexandru Sebastian Bogdan 
Erdogan Gölge 
Kevin Englich 

Die Farben oberhalb zeigen an, welches Projektmitglied für welchen Teil der Diplomarbeit zuständig war. Erdogan Gölge ist Grün, Alexandru Bogdan mit Rot und Kevin Englich findet man mit der Farbe Blau. Die Überschriften sind in der entsprechenden Farbe markiert.

Wir möchten uns gerne bei unseren Betreuer Ing. Christian Hradil BSc für die Unterstützung bedanken. Ein weiterer großer Dank geht an unseren Auftraggeber Cezar Gheorghiu (WrapStyle Austria), der uns die Projektaufgaben ermöglichte und an unsere Familien und Partner, die uns im Laufe dieses oft herausfordernden Projekts mit viel Verständnis und Geduld zur Seite standen.

6. Marketing & Marketing Communication

A whole industry is built on the concept of marketing. Many individuals, especially those who are not in marketing, consider marketing to be a business activity. Marketing, when viewed in this light, is similar to other corporate tasks including research, management, human resources, production/operations, and accounting.

The goal of marketing as a department and function of a company is to connect the company with its customers and future consumers.

The American Marketing Association, the industry's largest trade group, has altered the definition of marketing multiple times throughout the years to accommodate shifting economic conditions. From 1975 until 2005 AMA has defined Marketing as follows:

"Marketing is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives."

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.7)

6.1 Market Analysis

In all organizations and institutions, the managers spend time and energy on making plans and marketing decisions.

It is essential to keep track of the purchasing preferences of target consumers over time. Situational analysis is one of the most widely used methods of collecting and analyzing marketing information.

6.1.1 Situational Analysis

The purpose of situational analysis is to describe current and future issues and key trends as they affect three key environments: the internal environment, the customer environment, and the external environment.

Internal analysis involves the objective examination of internal information about the company's current strategy and performance, as well as the current and future availability of resources.

Competitive environment analysis, known also as competitive intelligence, involves analyzing the capabilities, vulnerabilities, and intentions of competing firms.

Analysis of the external environment includes analysis of economic, legal, political, technological, cultural, and other events, threats or trends that may affect the future of the organization and its marketing efforts. Some marketing planners use the term situational analysis to refer to the overall process of gathering and interpreting internal, competitive, and environmental information.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.16)

6.1.2 Marketing Segmentation & Target Marketing

The request segmentation procedure results in the identification and selection of one or more target requests. Marketers participate in market segmentation when they divide the total market into smaller, homogeneous gatherings or fragments that have comparable necessities, needs or qualities. When a marketer selects one or more target markets, he or she identifies one or more segments of individuals, businesses, or institutions to which the firm's marketing efforts will be directed.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.16)

6.2 Competition Analysis

When a company has defined the market or markets in which it will operate, it has also selected its competing companies.

The current and future actions of competitors should always be monitored and, if possible, anticipated.

One of the major problems of analyzing competition is the problem of identifying it. This problem can be overcome with the help of the manager's answer to the question: „Who are our current and future competitors?

Most of the companies are facing four basic types of competition:

1. Brand competitors, who market products with similar features and benefits to the same target audience at similar prices.
2. Product competitors, who are competing in the same product category, but with products that are different in terms of features, benefits, and price.
3. Generic competitors, which market quite various products that solve the same problem or satisfy customers' same basic needs.
4. Total budget competitors, who compete for the limited financial resources of the same clients.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.66,68)

All four types of competition are significant, but branded competitors rightly get the most attention because customers see the distinct brands as direct substitutes for each other. Because of this, strategies designed to get customers to switch brands are a major goal in any effort to beat brand competitors.

Competitive analysis has received increased attention recently for several reasons: more intense competition from highly sophisticated competitors, increased competition from international competitor's firms, shorter product life cycles and dynamic environments, especially in technological innovation.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.69)

6.3 Company Analysis

First and foremost, the team performing the analysis, or the marketing manager needs to evaluate the company's resources, marketing objectives, strategy, and current performance. A regular evaluation of marketing objectives is necessary to ensure that they remain in line with the firm's mission and with the changing customer and external environment. It also may be necessary to reassess the firm's marketing targets if objectives are found to be outdated or ineffective.

This analysis provides an important input to the subsequent stages of the marketing planning process.

The marketing manager should also evaluate the performance of the current marketing strategy in terms of sales volume, market share, profitability, and other relevant aspects.

This analysis can take place at several levels: by brand, product line, market, business unit, division and so on. It is also essential to analyze marketing strategy in relation to overall industry performance.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.59)

6.4 SWOT Analysis

SWOT analysis (strengths, weaknesses, opportunities, and threats) is one of the most used and effective tools in the analysis of marketing data and information. It is a simple, straightforward framework that provides direction and serves also as a catalyst for the development of the marketing plans and strategies.

SWOT analysis covers both the internal and external environments of the company.

Internally, the framework focuses on a firm's strengths and weaknesses in key areas such as financial human resources, performance and resources, product quality, market share, facilities and production capacity, customer perceptions, product availability and organizational communication.

In assessing the external environment, SWOT analysis organizes information about the market (customers and competitors), economic conditions, social trends, technology, and government regulations.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.86)

6.4.1 Strengths & Weaknesses

Strengths and weaknesses exist either because of resources owned (or not owned) by the firm or in the nature of the relationships between the firm and its partners, customers, its employees, or external organizations such as: suppliers, partners, government agencies. Strengths and weaknesses exist either because of resources owned (or not owned) by the firm or in the nature of the relationships between the firm and its partners, customers, its employees, or external organizations (e.g., supply chain partners, suppliers, lending institutions, government agencies, etc.). Since SWOT analysis must be customer-focused to achieve maximum

benefits, strengths are only meaningful when they serve a customer's need. In this case, that strength becomes a capability.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.93)

6.4.2 Opportunities & Threats

Opportunities and threats are also present outside the company, regardless of strengths, weaknesses, or internal marketing strategies. Opportunities and threats usually arise in the competitive, customer, economic, political/economic legal, technological and/or sociocultural. After identifying opportunities and threats, the manager can develop strategies to take advantage of opportunities and minimize or overcome the company's threats.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.95)

6.4.3 The SWOT Matrix

SWOT analysis is intended to synthesize a wide range of information and facilitate the transition to the strategy on which the enterprise should focus. To address these issues properly, the marketing manager or those responsible for the SWOT analysis should appraise every strength, weakness, opportunity, and threat to determine their total impact on the firm's marketing efforts. To utilize SWOT analysis successfully, the following 4 issues must be cognizant:

1. The evaluation of strengths and weaknesses must look beyond the firm's resources and product offerings to examine the processes that are essential to meet the customer's needs and requirements. This often involves providing 'solutions' to customer problems rather than specific products.
2. The fulfillment of the company's goals and objectives depends on its ability to build capabilities by matching its strengths with market opportunities. Capabilities become competitive advantages if they offer better value to customers than competing offerings.
3. Firms can often turn weaknesses into strengths or even capabilities by making strategic investments in key areas like: customer support, research and development, and services. Similarly, threats can often be turned into opportunities if the right resources are available.
4. The weak points that cannot be turned into areas of strength become the firm's limits. Any limitations that are obvious and significant to customers or other stakeholders should be reduced through effective strategic choices.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.96)

SWOT MATRIX	INTERNAL FACTORS	
	STRENGTHS	WEAKNESSES
EXTERNAL FACTORS	OPPORTUNITIES	SO Strategy Maximize both strength and opportunities
	THREATS	ST Strategy Maximize strengths while minimizing threats
		WO Strategy Minimize weaknesses and maximize opportunities
		WT Strategy Minimize both weaknesses and threats

Abb. 17: SWOT Matrix

6.5 Target Audience Definition

The answer to the „who“ question requires a close analysis of the relevant characteristics that define the targeted markets.

This includes demographic characteristics (gender, age, income, social status, etc.) geographical characteristics (locations of the customers, density of the target market, etc.) as well as psychographic characteristics (attitudes, opinions, interests, etc.)

The examination should also consider the viability of potential customers or markets that could be targeted in the future. This involves analyzing situations that could increase the firm's ability to win new customers.

(cf.: Marketing Strategy: Text and Cases, Sixth Edition O.C. Ferrell, and Michael D. Hartline, © 2014, 2011 South-Western, Cengage Learning, P.62)

6.6 Marketing-Mix

The organization is ready to start preparing the elements of the marketing mix after agreeing on its general marketing strategy. The marketing mix is a collection of controllable, tactical marketing instruments that a company uses to generate the desired response in its target market. Everything a company can do to affect demand for its product is included in the marketing mix.

The ‚four Ps‘ or product, pricing, place, and promotion, are four categories of variables that can be used to organize the many alternatives.

People, process, and physical evidence are frequently added to the ‚four Ps‘ in service marketplaces, making the seven Ps‘.

- Product
The term „product“ refers to the combination of goods and services that a firm offers to its target market.
- Price
Customers must pay a certain amount of money to receive a product.

(cf.: Marketing: An Introduction, Gary Armstrong, 8th Edition, © 2009 Pearson Education Limited, P.55)

- Place
The operations of the corporation that make the product available to target consumers are referred to as place.
- Promotion
Promotion refers to activities that explain a product's benefits and persuade potential buyers to buy it.

An effective marketing program combines all aspects of the marketing mix into a well-coordinated campaign aimed at achieving the company's marketing goals through providing value to customers. The marketing mix refers to the company's tactical toolkit for building strong market positioning.

8.6 Responsive Webdesign

Responsive Webdesign wird definiert als eine Reihe von Maßnahmen, die ergriffen werden, um sicherzustellen, dass Webseiten so gestaltet sind, dass sie sich möglichst effizient an verschiedene visuelle Eingabegeräte anpassen. Eine responsive Webseite besteht aus drei Hauptkomponenten. Ein flüssiges Layout; anpassbaren Inhalten und Layoutumbrüche dank Media Queries. (vlg. Ertel & Laborenz: Responsive Webdesign. Bonn, Rheinwerk Verlag, 53227, S21)

Mit der Einführung neuer Geräte werden neue Anforderungen an Webseiten gestellt. Webseiten sollten keine starre Gebilde mehr sein, sondern sich an das verwendete Gerät anpassen können. Die Displays sind über die Jahre geschrumpft und lassen sich nur noch mit einem Touchscreen bedienen. Parallel dazu werden größere Monitore mit höheren Auflösungen immer häufiger. Das bedeutet, dass Webseiten nicht nur für kleinere Bildschirmauflösungen, sondern auch für größere Bildschirme ausgelegt sein müssen. (vgl. Hahn, Martin: Webdesign. Bonn, Rheinwerk Verlag, 53227, S108)

8.7 Browser und ihre Differenzen

Man benötigt einen Webbrowser, um die erstellten HTML-Dokumente im HTML-Editor den man ausgewählt hat anzuzeigen. Als Webseite-EntwicklerInnen solltet man sich jedoch nicht mit nur einem Webbrowser zufrieden geben, sondern mit möglichst vielen zum Testen, denn zwischen den verschiedenen Webbrowsers und deren Versionen gibt es einige kleine Unterschiede. Es ist auch eine gute Idee, eine Webseite auf verschiedenen Geräten zu testen. Wenn man aktuelle Webseiten auf Geräten mit unterschiedlichen Bildschirmgrößen, wie einem Desktop-Computer, einem Laptop, einem Tablet und einem Smartphone, untersucht, wird man feststellen, dass diese häufig unterschiedlich dargestellt werden. Dies liegt daran, dass sich solche Webseiten idealerweise an die Umgebung anpassen, in der sie dargestellt werden. Diese Anpassungsfähigkeit wird als responsives Webdesign bezeichnet. Die Anpassung erfolgt nicht automatisch, es liegt in der Verantwortung der WebdesignerInnen. (vgl. Wolf, Jürgen: HTML und CSS. Bonn, Rheinwerk Verlag, 53227, S 51)

Google Chrome, Mozilla Firefox, Apple Safari und Microsoft Edge sind derzeit die beliebtesten Webbrowser, wobei Google Chrome den größten Marktanteil hat. Es gibt auch eine Reihe anderer Browser, wie Vivaldi, Opera und Brave, die einen kleinen Marktanteil haben. Auch bei mobilen Endgeräten legen die HerstellerInnen häufig einen eigenen Browser bei. Aus diesem Grund ist der Samsung Internet Browser auf Samsung-Geräten prominent vertreten. (vgl. Wolf, Jürgen: HTML und CSS. Bonn, Rheinwerk Verlag, 53227, S 51)

9. Advertising graphics, VFX & Post-Production

9.1 Storytelling

Storytelling is an old art form and an important form of human expression, according to the National Storytelling Network. However, because narrative is so important to so many creative forms, the term „storytelling“

is frequently misused. Storytelling is the interactive skill of revealing the parts and pictures of a narrative via words and gestures while inspiring the listener's imagination.

(cf.: <https://storynet.org/what-is-storytelling/> 24.01.2022 / 11:45)

9.2 Copyright

Materials may be copyrighted as works of art if required for a particular level of design. Utilities advertising graphics or outer packaging designs may be copyrighted. The key questions in deciding whether a product is a work of art or a non-art product are: Are there high-quality design elements in your product design? If you receive a positive answer, you can assume that your work is copyrighted.

(cf.: Medienrecht; Peter Bühler, Patrick Schlaich, Dominik Sinner. Copyright Springer-Verlag GmbH Deutschland 2017. P.14)

If they have a high design quality, scientific or technical representations such as drawings, plans, maps, sketches, information graphics, and so on are protected by copyright. The author's work is protected for 70 years after his or her death.

(cf.: Medienrecht; Peter Bühler, Patrick Schlaich, Dominik Sinner. Copyright Springer-Verlag GmbH Deutschland 2017. P.16)

Computer programs also fall under copyright protection. They are always protected if they are individual, the result of an intellectual creation, which is certainly the case in most instances.

(cf.: Medienrecht; Peter Bühler, Patrick Schlaich, Dominik Sinner. Copyright Springer-Verlag GmbH Deutschland 2017. P.17)

An author may grant a right of exploitation to other natural or legal persons. Basically, a distinction is made between physical and incorporeal exploitation.

Rights of use deal with the various possibilities of use and their permissibility, while rights of use deal with legal transactions relating to copyright.

(cf.: Medienrecht; Peter Bühler, Patrick Schlaich, Dominik Sinner. Copyright Springer-Verlag GmbH Deutschland 2017. P.18)

9.3 Animation, Motion Design & CGI Image

9.3.1 Techniques

Hand Drawn

Styles vary from Disney cel to rotoscoping (tracing live-action) to a finer art style and are created using a variety of materials (pencil, paint, ink, charcoal, and so on).

2D Stop Motion

It is built utilizing a camera hovering over a flat surface and a variety of materials (sand, oil paint, paper silhouettes & cut-outs, photos). Sand, oil paint, and paper silhouettes were all employed in lightboxes.

3D Stop Motion

This technique involves a tripod and a variety of materials such as puppets, models, clay, found objects and pixilation with human puppets.

2D CGI

A flat or 2D software environment is used to produce this type of animation. Can be created fully within a program or mixed with conventional elements via scanning, coloring, laying out, or sketching directly into the software.

3D CGI

A 3D software platform is used to produce the animation. In the 3D virtual environment, elements are designed, rigged, textured, and animated.

9.3.2 Styles

Fluid Transactions

Without any cuts, the animation glides from one scene to the next. It may appear to be changing. It is used to tell a story that flows smoothly from beginning to end.

2D / Vector / Kinetic Type

Solid colors in a flat design that is highly scalable. Illustrator and other vector-based applications are used to create the artwork. Broadcast graphics, infographics, and Web design are all common uses for this type of graphic.

Handmade

Real materials are used in the designs, which are often textured and appear to be handcrafted. Stop motion and hand drawn animation are prevalent here. When wanting to produce a vintage or innocent air, this is the word to use.

Collage

Handmade pieces are combined with images and video clips. Animated documentaries and title sequences frequently use this style.

Film and Type

Video footage (typically montaged) is combined with kinetic type. Non-linear title sequences are frequently utilized.

3D

Stop motion or CGI are used to achieve this style. The viewer associates the setting with reality because of „real“ light, shadows, and gravity.

(cf.: Animated Storytelling; Liz Blazer. Copyright @2016 by Elizabeth Blazer. P.118)

9.4 Camera

In contrast to real cameras, the computer graphics camera is a wholly abstract construct made up of the analog of an aperture and a focal length that defines the distance between the aperture and the recording plane and hence the aperture angle. This means that there are no systemically linked qualities in the CG camera that are conditioned by a specific design; rather, the parameters exist in a modular form and are independent of one another. Optional features like depth of field, lens distortion, and chromatic aberration must be defined by camera shaders or determined in postprocessing.

(cf.: Visual Effects; Barbara Flückiger. Copyright Schüren @2018. P.154)

9.5 Lighting

No light, no picture - this simple principle holds for both computer-generated and analog photographs shot with a camera.

The technical director in charge of lighting computer-generated images must rely on his experience, just as the cameraperson must rely on his understanding of film stock and lighting parameters to visualize the finished image while shooting.

Because he can only see clues of what he is doing while working, he can only determine the outcome of his effort after the image has been rendered - which can take a long time depending on the complexity of the scene.

Aside from these drawbacks, lighting in a computer program has advantages over real methods that camera operators and lighting professionals can only fantasize about. Objects may be turned on and off at will, which means they can either block or allow light to pass through. Similarly, an object's shadow can be simply suppressed so that it is not seen.

(cf.: Visual Effects; Barbara Flückiger. Copyright Schüren @2018. P.154)

Light sources can be classified into the following categories:

- Ambient light: This has no definite source or orientation and corresponds to diffuse illumination with multiple light sources or even sunshine with a clouded sky.
- Point light: Point lights, like light bulbs, distribute their rays uniformly in all directions. They truly correlate to a point in computer graphics in their original form.
- Area light: Are formed when point lights are given an extension in the form of spheres, cylinders, or cubes. Area lights produce soft shadows and are thus preferred over point lights, but they take longer to render.
- Spotlight: Hard shadows are desirable for projector light replication, for example. Within the light cone, both bundling, and distribution can be specified.
- Directional light: In contrast to the other types of light, the light rays run parallel here. This corresponds to a very distant source such as the sun.
- Volumetric light: When light rays collide with smoke or fog, they become visible. Volumetric light is used to recreate this look.

(cf.: Visual Effects; Barbara Flückiger. Copyright Schüren @2018. P.157,158)

9.6 Rendering

The rendering process takes all of the information from the object and scene geometry, shaders, and lighting with reference to camera parameters to be determined at the conclusion of the process and uses it to calculate the color values of the individual pixels that make up the image using a render algorithm. As a result, the latent data is transformed into a form that can be perceived.

9.7 Post-Production Multi-Pass Rendering

Exceptionally large scenes are rendered in multiple passes because they are too large for the machine, or because different passes are rendered on different machines to increase parallelism, or because some passes are expected to change while others remain the same, requiring only the modified passes to be rerendered (which is common in entertainment content production).

(cf.: <https://download.autodesk.com/us/maya/2011help/mr/manual/node26.html> 24.01.2022 / 11:59)

9.7.1 Compositing

Digital compositing allows you to arrange, link, and overlay image data in a variety of ways. It is used wherever text or visuals are created on the computer. Film is merely a minor application of this technology.

(cf.: Visual Effects; Barbara Flückiger. Copyright Schüren @2018. P.157, 191)

The most frequent method of picture composition was to create a matte, which is a transparent image over which the second image should be seen. The initial digital compositing techniques were just digital reproductions of non-digital film techniques. However, digital compositing provided more options for improving image quality and realism.

(cf.: <https://www.cg.tuwien.ac.at/courses/Seminar/WS2007/digitalcompositing.pdf> P.1)

The act of integrating all of your VFX pieces together is known as compositing. It is no wonder, then, that every outstanding VFX studio employs a fantastic compositor.

(cf.: <https://www.actionvfx.com/blog/5-incredible-compositing-tutorials-for-after-effects> 24.01.2022 / 11:52)

10. Digital Signage & Device Prototype Manufacturing

Because it is delivering success to increasing businesses around the world, digital signage is taking off. This is especially true of the group of executives involved in today's and tomorrow's advertising industries.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. xviii)

For business owners, brand marketers, and advertising agencies who recognize the benefits of informing, promoting, and entertaining specially targeted consumers, digital signage has grown into a highly efficient and appealing means of distributing multimedia information. Static material is no longer a viable option.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 1)

10.1 What is digital signage?

Lars-Ingemar Lundstrom, author, Digital Signage Broadcasting: Broadcasting, Content Management, and Distribution Techniques, by NAB-Focal Press, has described and defined Digital signage as follows:

“Digital signage provides dynamic real-time, near-real-time, or non-real-time information that may be individually adapted to the location, time, situation, and who is watching the screen. Using simultaneous screen elements such as regions, layers, and tickers (or “crawlers”), several messages, originating from various sources (and places), may be combined on one single screen. Though providing information in a fully automated way, the medium also allows for interaction with the viewer, using touch screens or other means of user control.”

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 39)

Digital signage, according to Wikipedia, is a type of out-of-home advertising in which the content and messages displayed on an electronic screen, or digital sign, can be changed without requiring physical changes to the sign, typically with the goal of delivering targeted messages to specific locations at specific times.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 2)

In-home applications will certainly be included in the right definition of digital signage.

Furthermore, the content displayed by digital signage will not be limited to advertising messages; instead, instructional and environment-setting or mood-enhancing messages, to mention a few, will be included in noncommercial digital displays today (and in the future).

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 3)

Flight and train information/screens, corporate communications (e.g., in conference rooms, lobbies, and training facilities), command and control center displays tied to security applications, removable media such as DVDs delivered by foot (often referred to as „sneaker-net“ delivery), and specialty channels for specialty audiences, such as those in waiting rooms, are all examples of digital signage.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 6)

10.2 Purposes of Digital Signage

Today, digital signage can be used to offer material that falls into four categories: commercial, informational, experiential, and behavioral (all of which are often overlapping).

10.3 Commercial Digital Signage

Commercial uses of digital signage are a response to the chaotic environment in which advertisers and their customers find themselves as they enter the twenty-first century. Consumers’ ability (and desire) to turn off or ignore adverts, as well as a lack of relevant or meaningful advertising content to fulfill their consumption demands, are the causes of this turmoil.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 15)

The commercial side of digital signage is and will continue to be a significantly larger part of the digital signage pie for some time to come. Commercial digital signage can be installed in a wide range of locations. Nonetheless, a very comprehensive list of digital signage locations can be broken down into four categories:

- Malls, supermarkets, food, drug, clothing, and sporting goods stores, as well as convenience stores, gas stations, and car repair shops, are all examples of retail.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 45)

- Airports, railway stations, public transportation systems, buses, taxis, sidewalks, bustling city streets, elevators, billboards alongside roads and freeways, and company lobbies are all places where people travel.
- Health facilities (such as spas and health clubs), doctor's waiting rooms, hotels and motels, and movies or theaters all provide excellent customer service.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 47)

- Miscellaneous: This category is constantly expanding, often spanning the first three, and can be found in factories, employee break rooms, trade exhibits, and stadiums or arenas, among other places.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 49)

10.4 Informational / Non-Commercial Digital Signage

Installation of large and vivid digital screens is becoming increasingly commonplace as airports improve to put themselves more at the forefront of modern-day travel. Most of these displays are now limited to just flying statistics and information; however, future displays suggest the prospect of directly tying in with commercial, behavioral, and experience usages as well.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 15)

A digital display, rather than a digital sign, would be a flat-screen panel put in a college's foyer, counseling and educating prospective students and parents on the institution's strengths.

Factory, government, and travel centers, as well as churches, temples, mosques, and synagogues, are among the non-commercial locations for digital signage screens.

A high school or college, for example, could employ digital signs to inform instructors, staff, and students about upcoming activities, requirements, and accomplishments.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 45)

10.5 Experimental Digital Signage

The usage of experimental Digital Signage at a medical clinic or doctor's office when people are waiting to be examined is a wonderful example. New digital signage services, such as Baby-TV and emebaVet, have been offered in this context.

In this case, the business owner, content provider, and operator are making a genuine effort to put the patient and his or her loved ones at ease, inform them about their condition, and/or assist them to pass the already terrible time while waiting for care.

Digital signage content, like that of hospitals and veterinarians' offices, has an impact on perceived waiting times. Content messages can include everything from recipes and descriptions of meals served to public service announcements, as well as information about health center treatments, products, and other services, as well as information from the hotel concierge about other visitor attractions.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 15)

10.6 Behavioral Digital Signage

Customers must either wait in line or wait for their service to be completed at a convenience shop, a bank, or a post office, for example. Consumers are effectively part of a „captive audience“ in these sorts of scenarios. A well-placed and well-presented digital sign with top-notch, relevant, and entertaining material may be used to not just pass the time, but also to engage with other products or services in, around, or at another comparable institution.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 17)

10.7 Software

The content side of digital signs and displays is made up of two types of software. The on-screen or on-air material presented on the screen is one example. The software package allows the on-screen material to be placed in the other.

10.7.1 Content On-Screen

A running data stream at the bottom of the screen, a signal logo in one lower corner, an animation clip in the other lower corner, a photo in the right upper corner, and a live or near-live video in the majority of the remaining center of the screen, all displayed at the same time, are examples of this content.

Each object may be changed to another, from close by too far away, instantaneously, by the second, hour, day, or longer time period, using the correct application installed on the proper media player, server, or PC.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P.58,59)

10.7.2 Software Control System

The software control system, sometimes known as „middleware,“ is the other piece of software in a digital signage system. This program creates

the framework for the material that is being displayed. The software control system applications are critical since on-screen material cannot be shown without them.

One of the most important considerations in this area is which operating system to select (e.g., Linux, Microsoft, or Apple). Each has its own set of benefits and drawbacks.

What to use is largely determined by the programs and features that matter to the user. Windows is popular because it supports a wide range of file types. Linux has the advantage of being completely free to use. Apple computers are well-known for their graphical capabilities.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 60)

10.8 Hardware

The number of pieces of hardware that make up a digital signage or digital display infrastructure can range from five to a dozen. The monitor or flat-screen panel that displays the message to the audience is, unsurprisingly, the most visible hardware.

Wires usually link this to an electrical supply as well as to a modem, which connects to an external source such as a computer, server, and/or the Internet.

A laptop or a PC is a place where material is generated, stored, and transmitted on the origination side of the infrastructure (or all three). Video, music, PowerPoint presentations, data, animation, and graphic files are then saved and played from the PC to the screen, or a media player or server device provides that particular role in more advanced systems.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 60)

10.9 Installation

Matching the hardware components to the chosen location in the digital signage locality where the screens will be installed is the first step in the installation of digital displays.

After the screen is correctly installed, the wire must be routed throughout the space, linking back to the server and other hardware components that route material through the system and onto the digital screen.

For indoor digital signage wiring, coaxial cable and Ethernet wire are two popular options. If the system is wireless, a second antenna may be required to receive the content signal in, on, or near the screen device. Furthermore, an adequate location for the server, media player, and/or PC that will manage the material must be located, often at the location or in the specific store.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P. 60,61)

10.10 Use of Digital Signage

10.10.1 Outdoor Signage

Outdoor digital signage, as the name implies, refers to the deployment of devices in public spaces, high-traffic areas, on sidewalks, boulevards, on the walls of the building, above the street, and so on.

The cost of current outdoor signage is generally determined by factors such as the type of screen device used and the location where it is mounted.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P.77)

10.10.2 Indoor Signage

Indoor digital signage may be just as varied as outside digital signage. Indoor digital signage services shopping cities, production facilities, theaters, retail stores, and sports facilities, according to standard classifications.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P.88)

10.11 Trends in Digital Signage

Because they speak to the future and how that future could grow, trends are a crucial and interesting component of digital signage.

Perhaps the most important and prominent trend in today's digital signage is its general quick development as a technological application.

Twenty important themes that are driving today's growth of digital signage are listed below:

- Consumer relations and communications (such as between customers and merchants) are improved by well-functioning digital signage systems, as are corporate relations and communications (such as between management and employees).

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P.64)

- Digital signage is beginning to show advantages over traditional signs, such as decreased costs, notably in the areas of media and information creation, storage, management, communication, and presentation. Digital signage can also do more in a single area than paper signage, increasing its value and reducing waste.
- Wireless communications technology is quickly influencing the digital signage market, with suppliers having the option of adopting wired or wireless communications technologies (or both).
- Because the well of conventional advertising is beginning to run dry, more companies, retailers, and others are incorporating digital signs into their static, TV, and other traditional advertising campaigns.
- Resources are beginning to migrate from conventional advertising and marketing to new alternatives, such as digital signage, among ad agencies and their customers, as well as many other sectors of the commercial organization.

- Ownership of digital signage networks is becoming more common among retailers and location providers.
- Retail branding will acquire a lot of traction in the next years, especially as merchants try to differentiate their products and services.
- Both store personnel and customers are becoming more knowledgeable. By embracing new technology, stores and store personnel will be more effective at selling and branding, resulting in more space and staff efficiency.
- Consumers will also appreciate emerging technologies that allow them greater influence over the purchasing experience, particularly those that provide them with more information.
- The relationships between the retailer and the consumer audience will become increasingly dominated by consumers.
- Digital signage shows an exceptional potential to speed up business cycles and procedures.
- Controlling owners, network operators, and creative services staff are utilizing their current in-house content assets more effectively (saving money and effort).
- Screens and display devices are becoming thinner, lighter, bigger, and better at displaying pictures. Larger LED screens are becoming increasingly popular among novices to digital signage.
- Screens are getting more affordable.
- Media management software is increasingly being incorporated into devices.
- Small displays (e.g., 7-inch by 11-inch screens) are beginning to emerge on store shelves.
- Vendors, types of technology, hardware, software, operators, sizes, and types of deployment services are all becoming more widespread. Within the digital signage sector, uniform professionalism is increasingly becoming a commodity.
- The digital signage business is gaining standards and best practices (for example, training standards for installation and administration).
- Touch displays control the distribution of real-time material to viewers.
- RFID tags or even „smart gadgets“ that evaluate crowd numbers and other crowd or individual dynamics trigger the transmission of material.

Digital signage is considered a genuine bright light for companies desiring to deliver messages to audiences of customers and other end-users, particularly commercial and advertising communications.

(cf.: Digital Signage: Software, Networks, Advertising, and Displays, Jimmy Schaeffler, Copyright © 2008, Elsevier Inc., P.64, 66)

13. Marketing & Marketing Communication

13.1 Market Analysis

It was rapidly discovered through research that many firms that foil automobiles also provide other advertising products. Their offerings or services include signs, construction foils, culinary foils, and much more. The foiling of cars is highly popular now. Previously, this approach was mostly utilized by businesses to customize and protect their vehicles while also serving as advertising. However, more private individuals are using it to personalize and protect their vehicles.

13.2 Company Analysis

WrapStyle was established in 2012, although its origins date back to 2006, when the company's founders (Martin Turecek and Marek Cepica) offered a window tinting service to the public under the name TinTek. It all began in a garage with nothing but a concept and a will to succeed. The first full-body wrapping trials were conducted in 2008. A foil-wrapped body, on the other hand, seemed utopian at the time. Despite this, the creators were confident in their idea and worked hard to achieve success. The founders were the first in the world to wrap a Chevrolet Camaro in a Mirrorfolien-Vinylfolie, also known as Chrome Wrap. This project had become so popular on social media that every auto-related website had reported on it. So, in 2012, the company opened its first overseas branch in Dubai, under the new brand name WrapStyle. The goal was to spread a high-quality service combined with excellent customer service throughout Tschechien and the rest of the world. Katar and other destinations followed, eventually leading to over 25 businesses in 20 countries. The company buys tens of thousands of cars every year.

13.3 SWOT analysis

- **Strengths:** Strong and well-known brand; years of expertise; knowledge transfer; specialist field; franchise chains
- **Weaknesses:** There is no clear design guideline or standard; the logo is used in a variety of ways throughout social media.
- **Opportunities:** Possibilities include attracting more consumers or followers by appearing more professional and having a consistent design.
- **Threats:** Customers no longer recognize the brand; the brand's trust is eroded.

13.4 Target Audience Definition

Wrapstyle is a well-known and well-liked brand with a loyal following. In the business, the brand is specialized and professional, and it has made many consumers happy for years. In comparison to the competitors, the franchise system makes the brand even more exclusive.

- Wrapstyle's offer is intended for both men and women (more targeted to men) between the ages of 19 and 49

- Vocational training completed (Matura level and higher) is not required.
- Individuals or businesses who own or operate a motor vehicle.
- Cars, technology, individualism, design, protection, and advertising are all areas of interest.
- Purchase motivations: uniqueness, protection, design, originality, and advertising

13.5 Marketing-Mix

13.5.1 Product

Car Wrapping (color change - complete wrap, partial wrap), Paint Protection Film, Window Tinting, Ceramic Coating, and Design are the five core services offered by Product WrapStyle. Boat wrapping, ceramic sealing, and advertising wrapping have all lately been added to the list of services.

13.5.2 Price

Because they are luxury goods, the price strategy is upmarket, and it is calculated differently based on the project and effort.

B2C - business-to-consumer; items or services are supplied through a network of franchisees.

13.5.3 Place

B2C - business-to-consumer; items or services are supplied through a network of franchisees.

13.5.4 Promotion

The communication strategy will be both online and offline, because while social media dominates now, flyers and brochures are not dead yet and may still grab a lot of attention.

14. Advertising graphics, CGI, Animation, Post-Production & VFX

14.1 Storytelling

To show the variety of inflation possibilities that the customer offers to those who want to inflate their cars, it is necessary to highlight this aspect in the commercial produced.

Among the 3 Personas made for the client, it was decided that the animation should be addressed to young people passionate about the car industry, a decision based on a much higher probability that the advertisement will go viral online, thus leading to an increase in the number of visitors to the site, and brand recognition.

What appeals to young car-loving audiences are the dynamic, aggressive scenes, to which is added a tailor-made sound design that accentuates the suspense and adrenaline.

To achieve all these points in the desired advertisement, the best way is to simulate car traffic, in which the car in the key role is captured by several cameras, placed at different angles, driving „aggressively“, and changing its design.

Due to a tight budget and limited graphics processing capacity, it was necessary to plan the animation as simplistically as possible, while aiming to achieve photorealism.

The solution found is given by the environment where the action takes place, namely in a tunnel.

14.2 Copyright

The advertising graphics and the animation were planned and executed using 3D CGI techniques to best represent the services offered by the client and the industry in which it operates.

The text created for the advertising graphics was „Wrap Style presents, the designs of the month“, the design names „Snake Gold, Black killer, Katana“ and „Wrapped and Roll“ as a slogan.

14.3 CGI

The software used to create the commercial was Blender, since it is a very capable open-source program.

The resolution and format of the animation are given by the display of the digital signage device on which the animation will be played, and more precisely: 1080x1920 / 9:16

As the client is known to use Ford Transit cars for various orders and deliveries, it was decided that the car in the key role would be a Ford car, namely a Ford Mustang.

In the first stage, research was started to find and/or acquire 3D models to create the animation.

The following .obj models were purchased and their costs were borne by the team members.

	Ford Mustang Author bigg101 Purchased on 2022-01-06	\$2.40	Review	Download	Invoice
	Audi A6 car 3D model Author chengbjay Purchased on 2022-01-06	\$2.40	Review	Download	Invoice
	Renault Clio Author jonathanlane Purchased on 2022-01-06	\$2.40	Review	Download	Invoice
	2016 Mustang GT350 RTR Wide Body Author rickzam117 Purchased on 2022-01-06	\$2.40	Review	Download	Invoice
	Tcross Author 3DModerntyStudio Purchased on 2022-01-06	\$2.40	Review	Download	Invoice
	Tileable road tunnel 01 Author samo3d Purchased on 2022-01-06	\$46.80	Review	Download	Invoice
	Ford transit 350 2022 Author kumar-siva54 Purchased on 2022-01-06	\$31.20	Review	Download	Invoice

Abb. 46: 3D Models

Since the models were created in another program, their materials were incompatible with Blender, which means that the models used had to be textured with materials created in Blender.

This involved a new research phase for PBR (Physically Based Rendering materials). Several websites were found that provide textures under CC0 license (Creative Commons toolkit - no copyright reserved). Since the resolution of the animation is 1080x1920, only 2K textures were used, they provide the ideal quality and they also do not overload the project and increase the rendering time a lot, as in the case of 4K or 8K textures

14.4 Preparation of the scene

Initially, the 3 parts of the tunnel were imported into the blender software to be configured.

After applying textures, and light materials to all the components in the tunnel, during which time rendering tests and countless adjustments of materials and textures were performed, the 3 basic components were multiplied and placed in the position to create the route for the cars.

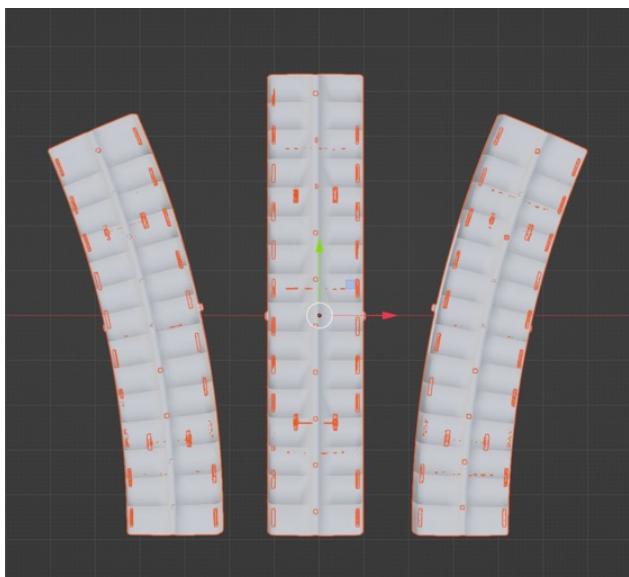


Abb. 47: Top view of the imported tunnel (Before)

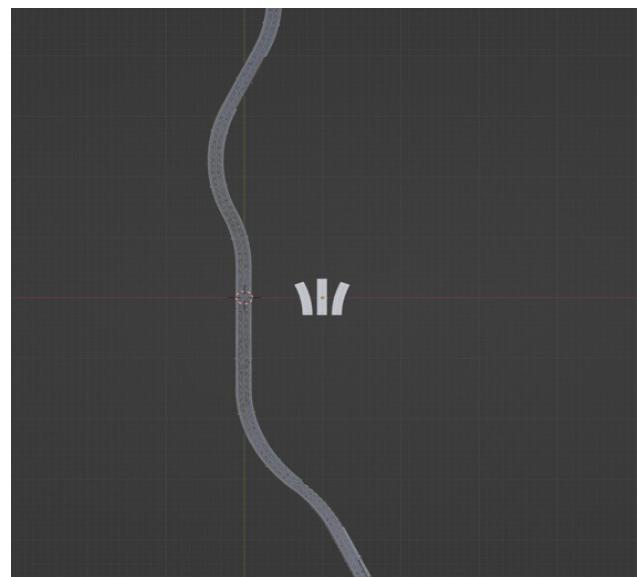


Abb. 48: Top view of the assembled tunnel

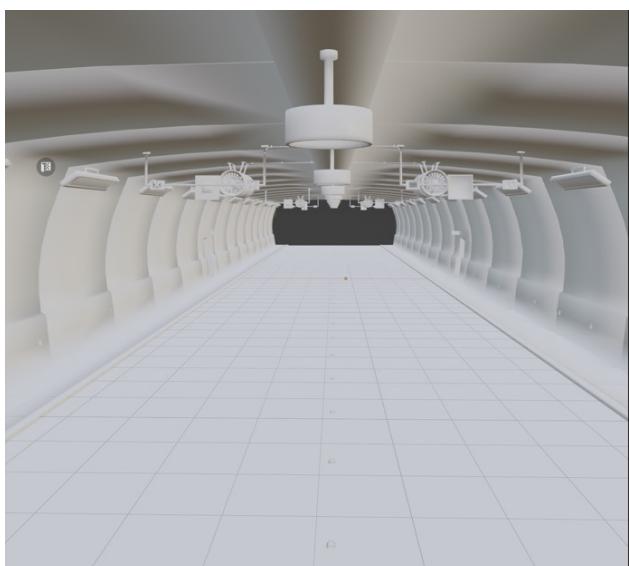


Abb. 49: View inside the tunnel: before and after texturing process

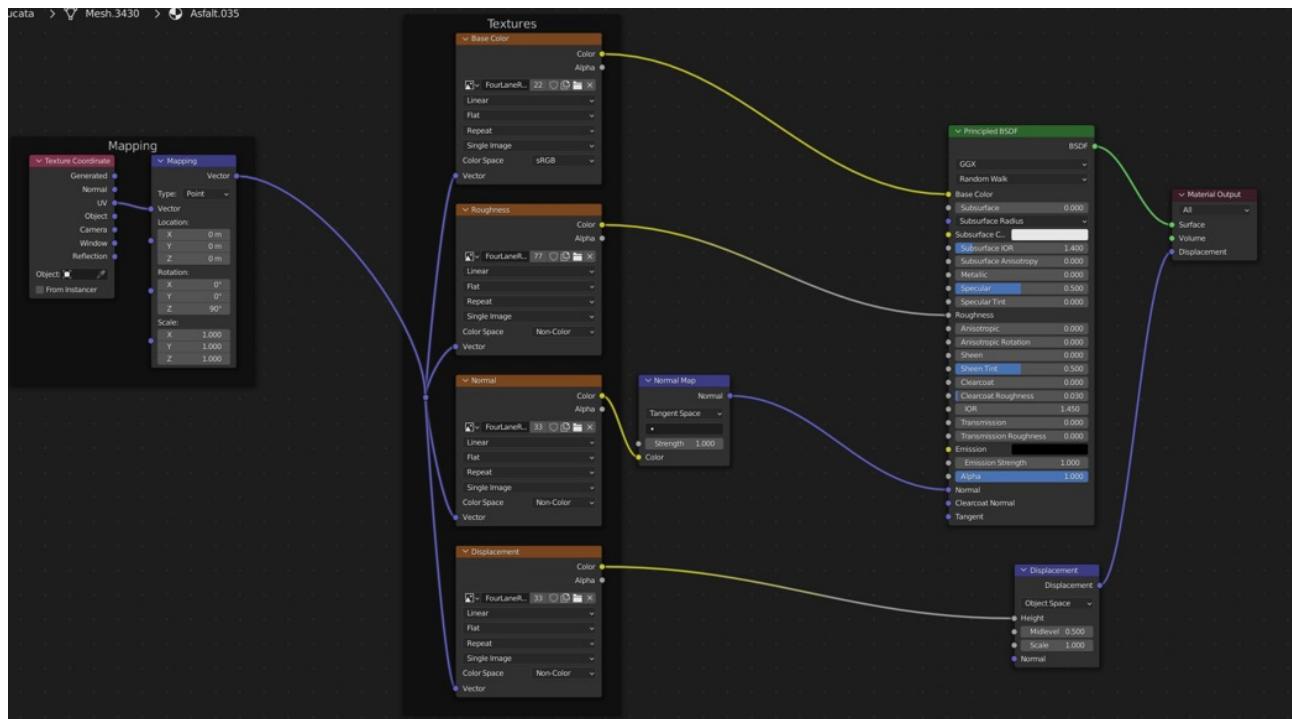


Abb. 50: Example of a PBR material (Asphalt) in the node editor.

From the 3D objects initially purchased, only the car models Renault Clio, Ford Transit, and Ford Mustang were imported, customized, and used to produce the animation.

The other cars required too much work to achieve the photorealism and risked compromising the animation deadline.

Another solution had to be found to diversify the cars used in the animation.

As a result of another research, the BlenderKit website and its Blender Plug-in were discovered, which provides users with several databases for 3d models, textures, HDRI maps, under a CC0 and Royalty free licensed content.

From here 3 pre-made cars ready to be rendered in high definition were imported under CC0 license:

- Audi RS Q3 Sportback
- Chevrolet Lumina SS PL
- Volvo Truck



Abb. 51: All the cars used in the animation

14.5 Preparation of the Ford Mustang

The first detail that was corrected was the tires of the car, which had no grooves and were not realistic. A selection on the tires of the wheels was made and separated from the rims of the car. Then, using the same separation method, a tire from an Audi Q3 was separated, adapted to the Mustang rim, positioned, and scaled accordingly, and then joined to the rim. The wheel was multiplied 3 times to replace the other wheels of the mustang.

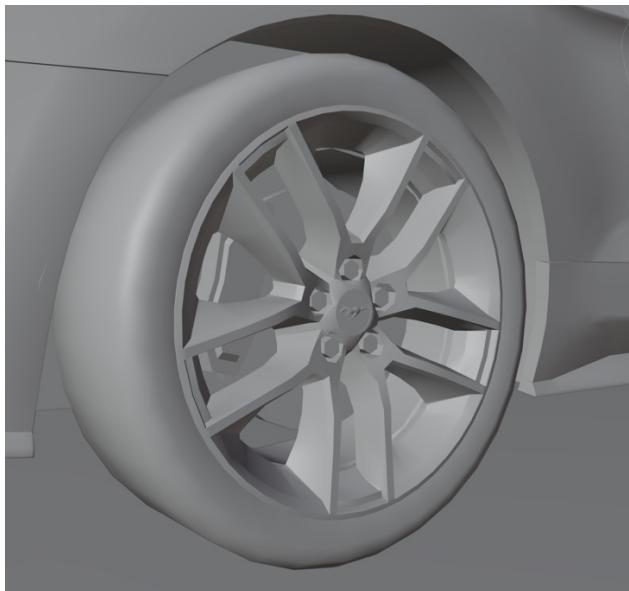


Abb. 52: Wheel (Before)

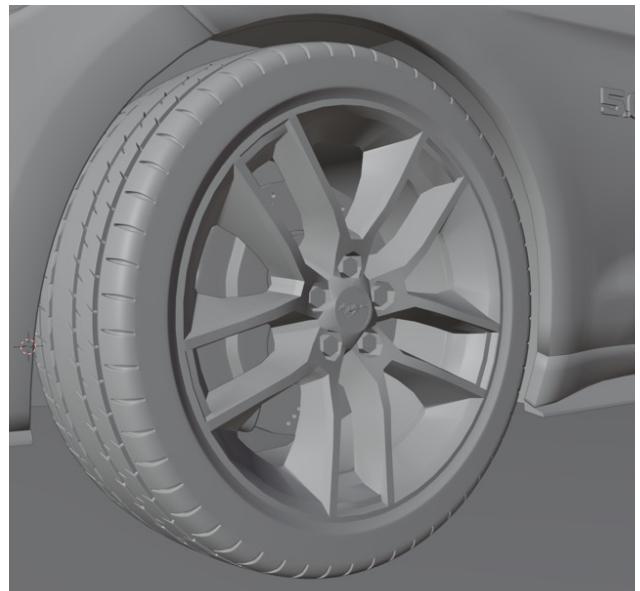


Abb. 53: Wheel (After)

The original model was missing an important detail, the front radiator grille, a problem solved with the Audi Q3 radiator, which was duplicated, properly positioned in front of the Mustang, and parented to the car body.

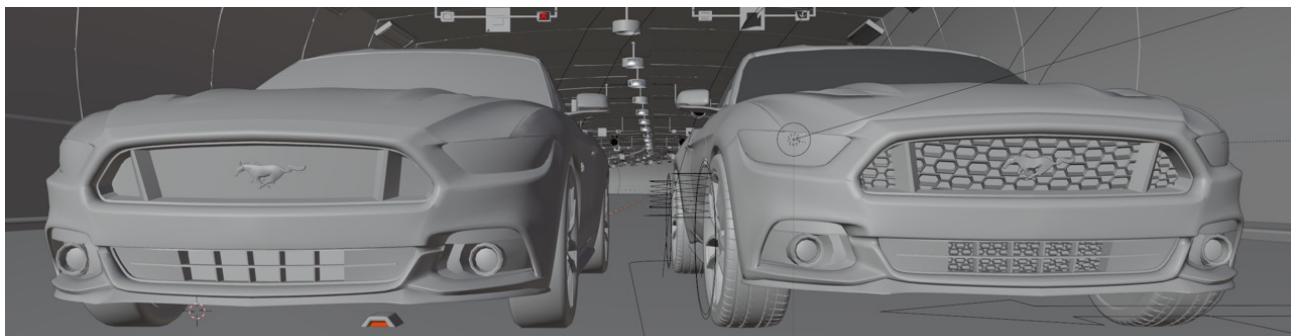


Abb. 54: Car (before and after)

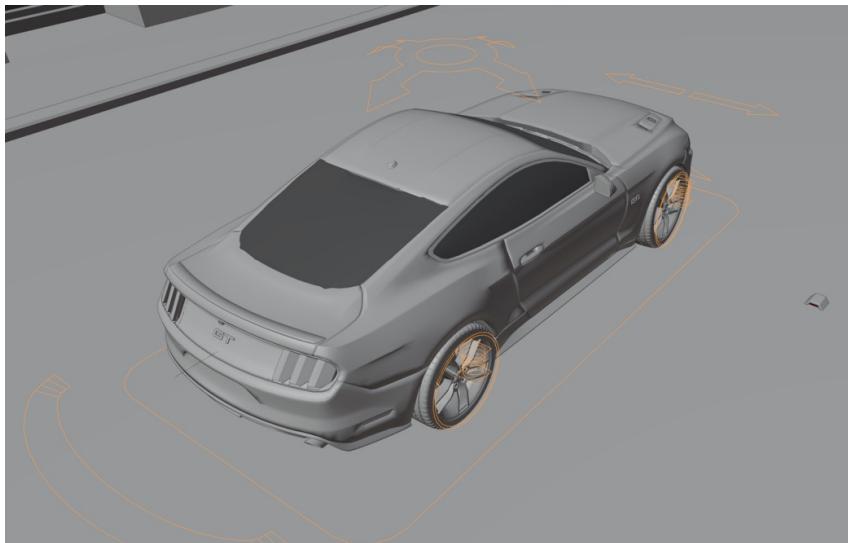
To reduce the workload and not to load the file with even more materials, it was decided not to intervene in the interior of the car, which is hidden by using black glass materials for the windows of the car, a detail that at the same time gives mystery to the car, making it more captivating.

Textures and materials were applied to the model and its various parts. Conical lights were applied to the headlights to simulate the projection of the headlight on the asphalt, and then their location coordinates were parented to the 3D model.

14.6 Rigging

To make the car move smoothly and realistically, and for the wheels to spin on contact with the asphalt as the car travels a distance, the 3D model had to be rigged. To achieve this, the open-source “rigacar” add-on for Blender was used.

All parts of the car had to be reduced to only 9 main components and named accordingly.



-Body		8	V26
-Wheel.Bk.L		3	V3
-Wheel.Bk.R		3	V3
-Wheel.Ft.L		3	V3
-Wheel.Ft.R		3	V3
-WheelBrake.Bk.L		3	V3
-WheelBrake.Bk.R		3	V3
-WheelBrake.Ft.L		3	V3
-WheelBrake.Ft.R		3	V3

Abb. 55: Main components

Abb. 56: 3D Model Test

After the 3D Model was properly rigged, tests were carried out to check if the rig obtained worked optimally

14.7 Car Look & Design

To reveal the possibility to customize the cars to potential customers, it was decided that the Ford Mustang will be presented in 3 distinctive designs:

- Snake Gold
- Killer black
- Katana



Abb. 57: Snake Gold

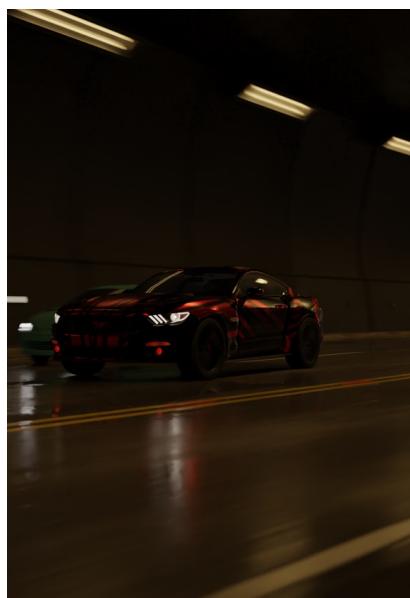


Abb. 58: Killer Black

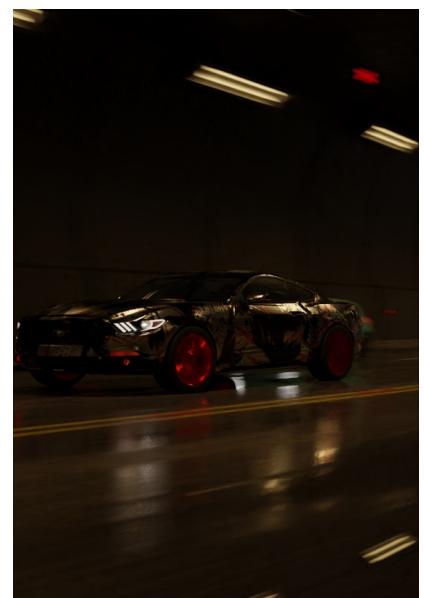


Abb. 59: Katana

In the creation of the designs were used graphic resources from the Freepik.com platform under premium licenses, which were then edited using Adobe Illustrator and Adobe Photoshop, and exported in JPEG format with a resolution of 2049 x 2342 pixels.



Abb. 60: Original design of Killer Black



Abb. 61: Original design of Katana

14.8 UV-Mapping

With a malfunctioning UV included, a better one had to be created for the Ford Mustang, to apply a custom design, this step involves a lot of experience in creating UV maps and is very time-consuming. Several attempts were made to create an optimal map for applying any design one could imagine, but the result was not satisfactory. The map created does not live up to expectations. For this reason, the design had to be made according to the UV map created.

For the other 3D car models, roughly the same steps were taken as for the preparation of the Mustang, except for creating UV-Maps and custom designs.

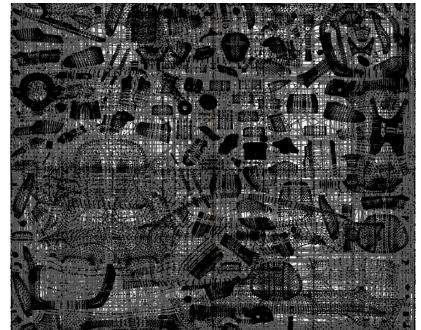


Abb. 62: Original UV-map of Ford Mustang



Abb. 63: Ideal UV-map of a 3D car model



Abb. 64: Created UV-map



Abb. 65: Adapted UV-map (Killer Black)



Abb. 66: Final Design (Killer Black)



Abb. 67: Final Design (Katana)



Abb. 68: Adapted UV-map (Katana)

14.9 Animation Of Cars

The tunnel created in which the action takes place is 950 meters long.

To make the animation as dynamic and realistic as possible, the Ford Mustang was intended to have a considerably higher speed than the other cars participating in the traffic.

A legal speed of 77 km/h was calculated for the other cars, but for the ford mustang a speed of 122 km/h was applied.

Other Cars			Mustang	
	Frames 1440			Frames 1440
945	44		945	28
0.95	44		0.95	28
77.7272727	3600		122.1428571	3600

Tab. 2: Frames & car speed calculated

Four invisible paths were created, having the same position on the Z-axis as the asphalt, to be used for animating the cars and their direction from the beginning to the end of the tunnel.

Initially, the 5 models were animated. To do this, each model was given an „object constraint“ property with the „follow path“ attribute. After that, the keyframing technique was used to define the starting point and the point at which the cars would reach their destination.

To create the feeling of high traffic, the 5 3D models were multiplied in countless rows, and placed randomly on the directions of travel, only shifting the keyframes to change the starting point of each car.

In the opposite direction, far fewer cars were animated since most of the cameras only focus on one direction.

To further diversify the traffic, the clones obtained from the multiplication have had their colors changed.

After simulating the traffic in the tunnel, another invisible path was created on which the mustang was animated, this one being more complex and curved than the other paths, since it was desired that the mustang overtake the other cars participating in the traffic.

After animating the mustang, the car together with its animation was multiplied and custom designs were applied. The 3 versions of the car were present in the scene sequentially. To do this, the keyframing technique was used to hide and display the 3D models from the rendering engine.

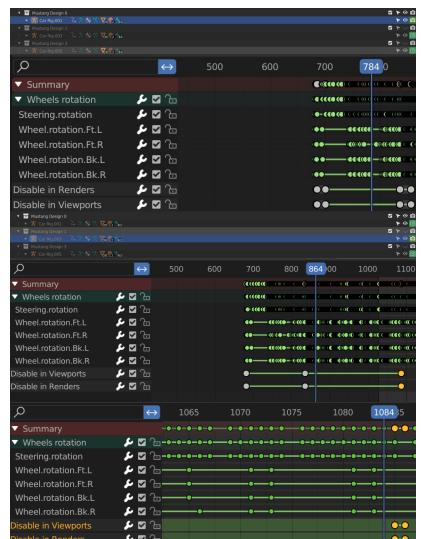


Abb. 69: Timeline & Keyframes

14.10 Animation Of Mustang's Rig

For the animation to be as close to reality as possible, the wheels needed to be animated at each overtaking maneuver of a vehicle, also the body and suspension movements were animated to simulate the presence of inertial force.

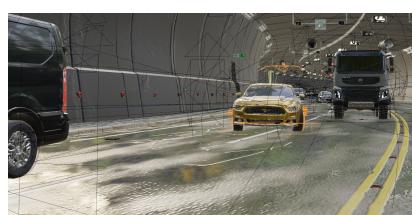


Abb. 70: Front wheels animation



Abb. 71: Simulation of inertia force



Abb. 72: Lack of inertia force

14.11 Camera Settings & Camera Animation

Initially, a standard camera model was created, which was then multiplied several times and positioned differently to get more angles. Some cameras were placed in a fixed location, while for others, paths were created along which the cameras were animated using the same technique used in the traffic simulation.

In total, 29 cameras were created and animated. Many of them have similar or even identical settings, but some of them were animated differently to achieve certain special effects.

Initially, most cameras were focused on the Ford Mustang. Because the 3 versions of the car are present alternately in the scene, the cameras lost their focus point and did not work as intended. To solve this problem, the already animated body of the Katana design was duplicated, hidden only from the render, serving only as a focus point for the cameras.

14.12 Rendering

As a hardware component, the Nvidia RTX 2070 graphics card was used in the rendering process.

Initially, it was intended to use the multi-pass rendering technique, but due to the much longer rendering and post-processing time it requires, it was decided to render the frames in PNG format, which preserves much valuable more information than JPEG.

The rendering settings have been adapted to provide the best possible image with the shortest possible rendering time. The number of Samples with which each image is rendered plays a particularly key role here. The higher this number, the better the image quality and detail.

Rendering tests were done with a sample number of 2048, but due to the awfully long rendering time of a single image, namely 40 minutes, it was adapted to a sample number of 256, thus obtaining an average rendering time of 5 minutes per image.

Also, the denoise option has been activated and set in OptiX mode (mode that uses only the graphic card in the denoising process).

Initially, it was intended to render a total number of 2500 pictures but later the number of rendered pictures was 4,152, with an average rendering time per picture of 5 minutes, thus requiring 346 hours of uninterrupted rendering time to obtain the scenes.

14.13 Sound design research

While the scene rendering process was in progress, research for sound design resources was performed.

Audio files were also searched for ford mustang engine, propeller sound, and tunnel horn.

The materials were procured from the graphic resource platform elements.envato.com, as the project manager has an annual subscription to this website under the name "Welo Web".

As a result of the research, the main soundtrack was chosen, along with 3 other audio elements needed for the sound design.

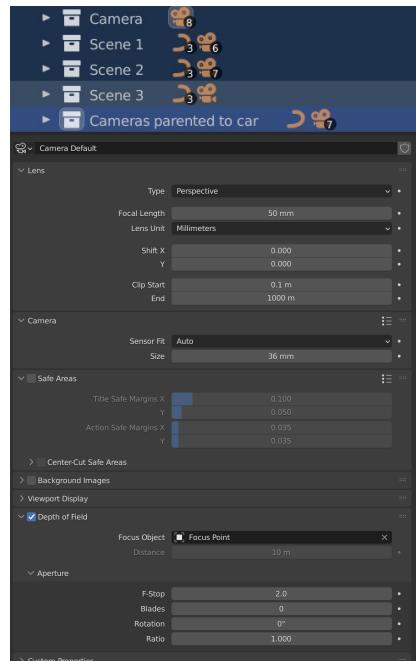


Abb. 73: Camera settings

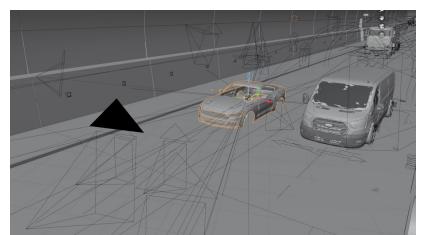


Abb. 74: Cameras focus point

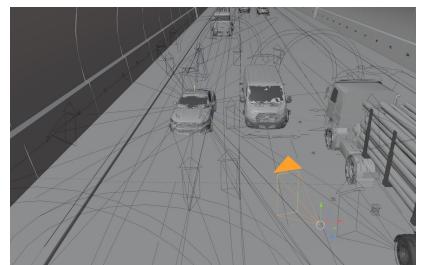


Abb. 75: Cameras present in the scene

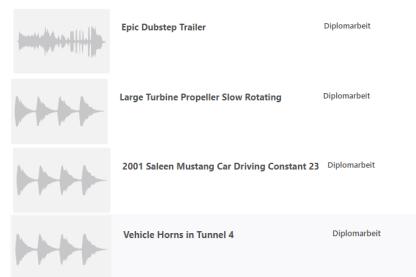


Abb. 76: Audio elements

14.14 Scene Cut, Assembling, Export & Premiere / After Effects Workflow

All series of PNG sequences were initially imported into Adobe After Effects program and turned into compositions with a frame rate set to 24 frames per second and an aspect ratio of 9:16. Each composition was then exported through Adobe Media Encoder, in QuickTime format since it is the format that preserves the most information for video editing. For the video codec option „none (Uncompressed RGB 8-bit)“ was selected.

Each composition was then exported through Adobe Media Encoder, in QuickTime format since it is the format that preserves the most information for video editing. For the video codec option „none (Uncompressed RGB 8-bit)“ was selected.

The option „use maximum render quality“ has also been activated.

After all the scenes had been successfully exported, all the video material obtained was then imported into Adobe Premiere where the best video material was selected, cut, and placed in an order that corresponded to the desired result.

Because the tunnel in which the animation took place was not an enclosed one and the end and beginning of the tunnel were not hidden by curving it, many scenes that were initially intended to be used, could not be. Also, the time pressure did not allow editing and re-rendering of scenes.

The solution found was to work only with clean scenes that could be used, and to obtain a final video that was fluid, as dynamic as possible, with transitions of scenes and cameras as natural as possible.

Example of a scene that could not be used, due to the visibility of the beginning of the tunnel

Final timeline of the selected and cut scenes.

The next step was the conversion of all scenes into an Adobe After Effects composition, where visual effects, sound design, and motion graphics were performed.

The Adobe After Effects work started with the placement of the soundtrack, to see if the dynamics of the scenes fit with it. Small adjustments were made where the scenes did not match the soundtrack.

After a satisfactory result was achieved regarding the timing of the image and soundtrack, the transitions between scenes were worked on.

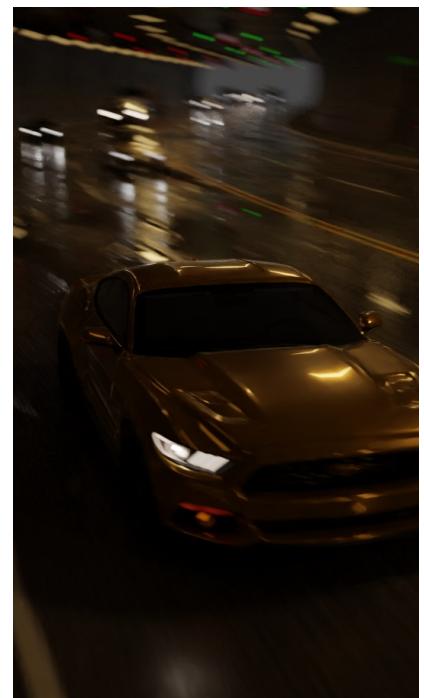


Abb. 77: Example

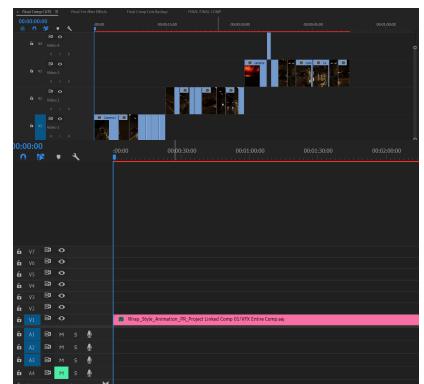


Abb. 78: Final timeline & Conversion

14.15 Transitions

Because it was desired that the final feeling that the animation conveys, to be futuristic and full of dynamism, it was decided that the transition effects to be Glitch type.

To shorten the working time on these effects, the Adobe After Effects plug-in „Motion Bro“ was used together with its „free presets pack for after effects“ package.

This transition effects package also includes specific glitch sound, which brings a fantastic addition to the sound design and the overall effect.

A total of 12 transitions between scenes were used, taking care not to overload the scene, or overdoing it, common mistakes in video editing. Below is an example including 3 key points of a glitch transition.

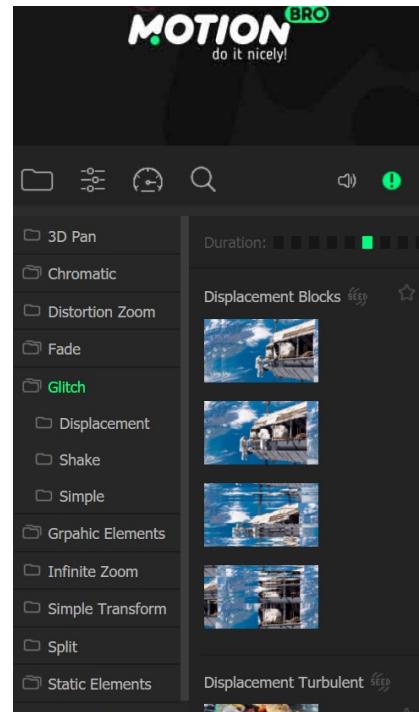


Abb. 79: Transition effects package

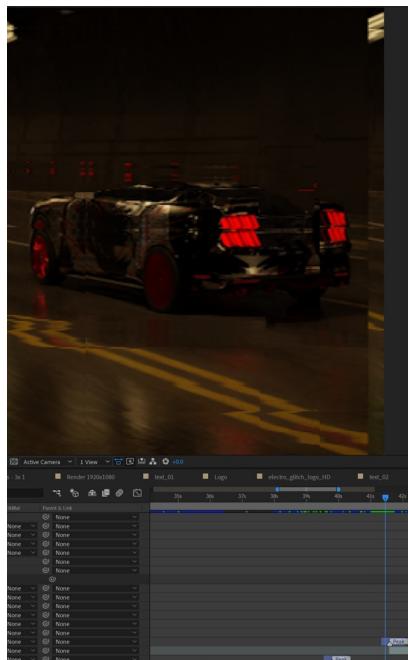


Abb. 80: Beginning of transition



Abb. 81: Transition point

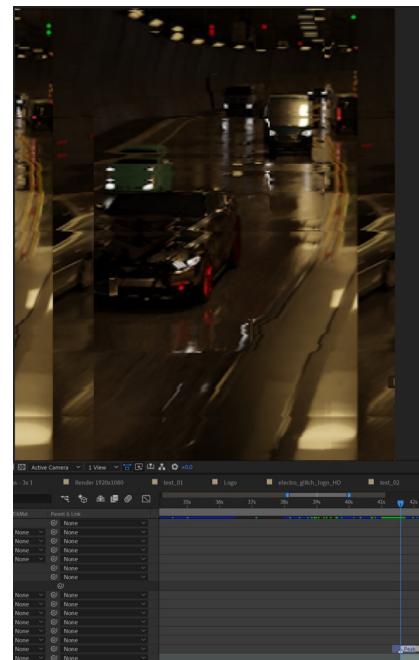


Abb. 82: End of transition

14.16 Motion graphics

Due to time pressure and the need to complete the animation to save time for feedback, the motion graphics were not created from scratch as originally intended.

Research was carried out on the elements.envato.com platform to obtain compositions containing elements of motion graphics that would fit or could be adapted to the scenes created.

As a result of the research, a project called „Glitch Urban“ was found, and it was decided to use it in the video composition.



Abb. 83: Project (Glitch Urban)

The project was imported into after effects, and it was found to have 16 groups that can be independently used and changed.

After viewing each group, it was decided to use only 4 of them to present the video and the names of the car designs, namely Group 10, Group 9, Group 1, and Group 11.

Because the original format of the „Glitch Urban“ project was 16:9, all the elements of the composition of the groups specified above had to be adapted to the 9:16 format to fit the animation.

The text in the composition of the groups was changed to match the video and the corporate design. The color used for the logo and text has the following HEX code: #CCAD50

The animation of the elements was also changed to synchronize with the length of the scenes, while ensuring that sufficient time was allowed for the text to be readable.

It was also necessary to move the video from the main composition to Group 10 to achieve the desired effect.

The placement of the graphic elements to present the video was done considering the pose of the car in the frame. So, the result is one that frames the car in a harmonious way, and at the same time leads the eye from top to bottom.

For the other groups in which design names are presented, changes similar to the one described above have been made.

14.17 Lens Flares

To bring the video as close to reality as possible and to give it a more photorealistic feel, it was necessary to introduce optical reflections of the lens where they might occur given the camera angle from which it was shot.

To achieve this effect, a new black solid layer was created in Adobe After Effects, on which the „Lens Flare“ effect was applied, and the layer blending mode was changed to “Add.”

As can be seen in the image above, only the left headlight of the car is in a position where the light can penetrate through the camera lens, which is why only the left headlight has been assigned a light leak.

The flare center and its opacity have been animated using the keyframing technique, to have a position and intensity in any frame that corresponds to the position of the headlight.

A total of 4 lens flares were introduced in the video.

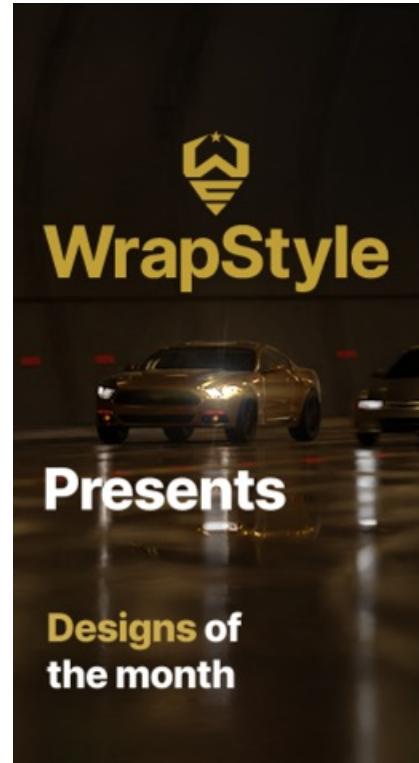


Abb. 84: Placement of graphic elements

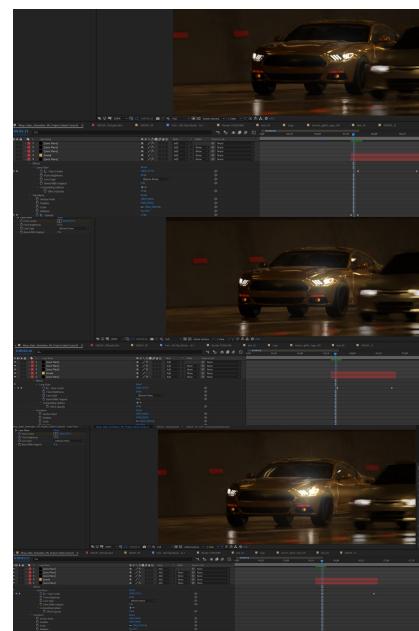


Abb. 85: Lens flare effect

14.18 Sound Design

In order for the sound on the image to be harmonious, it was necessary to apply the Stereo Mixer effect from after effects on the audio files, and to intervene on the number of decibels where necessary.

Keyframing was also used here to gain control over the sound.

First, the main soundtrack chosen for the video was calibrated and edited.

It was decided that initially, the sound level would be 0 and slowly increase in intensity up to 35%, and towards the end, when the logo is revealed, it loses intensity and goes back to 0.

At the very beginning of the video, the sound of the propeller was introduced, whose rotations, although not corresponding to the propeller's rotation present in the video, manages to convey the desired feeling.

The left and right Levels of the Stereo mixers were set to 50%.

The 3rd step was the introduction of the mustang engine sound. From the original file, the time intervals whose engine sounds best correspond to the speed, dynamics and action of the image were selected, trying to simulate as well as possible the number of revolutions per minute of the engine.

The left and right Levels of the Stereo mixers were set to 50%.

Because the position of the camera in relation to the car varies and is not always at the same distance, the sound had to be adjusted considering the distance between the camera and the engine.

To achieve this, the decibel keyframing technique was used. For example, in scenes where the initial position of the camera is far away from the car, and gets very close to it, the decibel number was adjusted to increase from -8.00 dB to 0.00 dB while being synchronized with the image.

This technique has been performed on all audio files with car engine sound, since it is a key factor differentiating a realistic sound design from an unrealistic one.

To enhance the sense of realism of the scenes and advertisement, 3 audio sequences were introduced into the sound design in which other traffic participants are honking the maneuvers of the Mustang.

14.19 Volume intensity checks of the sound design

An improvised method was used to check the volume and intensity of the final soundtrack. On a ZTE phone with android operating system, the application „Sound Meter“ was downloaded and then used to check the decibel count of a YouTube reference song, played at maximum intensity.

As a result of the tests, the volume of the soundtrack had to be turned up to the point where the reference sound and the soundtrack returned similar results.

14.20 Logo Reveal

After finalizing the sound design, work began on unveiling the logo at the end of the video.

The design called „Electro Glitch Logo Reveal“ whose dynamism, coloring, and style match the result of the resulting advertisement, was downloaded from elements.envato.com and used in the project.

Also, here all elements and sub-compositions of the project had to be converted to a 9:16 format, since the original project was executed in 16:9 format.

The logo was replaced with the WrapStyle logo, the colors were also adapted, the slogan and website were added to the scene, and posi-

tion and size changes were made to the flare lens that appears under WrapStyle Austria.

To add professionalism and re-evidence the client's field of activity, at the end of the logo reveal when all elements were presented and fully visible, a short engine revving sound was added.

14.21 Exporting the video

Because the audio files present in the Adobe After Effects composition connected to adobe premiere could not be played by Adobe Premiere, it was decided to export the video in uncompressed format directly from After Effects to be imported into Adobe Premiere, where the color grading process will be performed.

While the color grading process was started, it was found that the settings made affected the brand colors.

The solution to this problem was found by exporting the motion graphics elements, independently, without containing the video scene. To do this, it was necessary to activate the option to export the alpha channel in Adobe Media Encoder, so that the resulting video would be placed on top of the adjustment layers containing the color grading effects.

14.22 Color Grading

The color grading process was started by creating a new adjustment layer that was placed on top of the video, and to which the „Lumetri Color“ effect was assigned.

Adjustments were made to shadows, contrast, saturation, exposure, light intensity, and RGB curves.

Two separate adjustment layers have also been created, one with the function of controlling only the highlights, and the second with the function of controlling the low beam.

14.23 Final export

The export of the final one-minute video was done using Adobe Media Encoder in H.264 format, with a final size of approximately 77 megabytes.

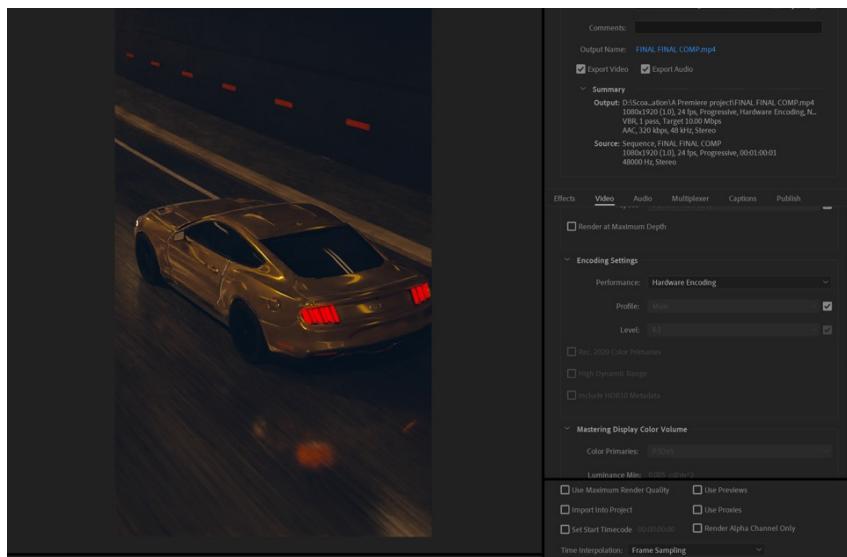


Abb. 86: Final export

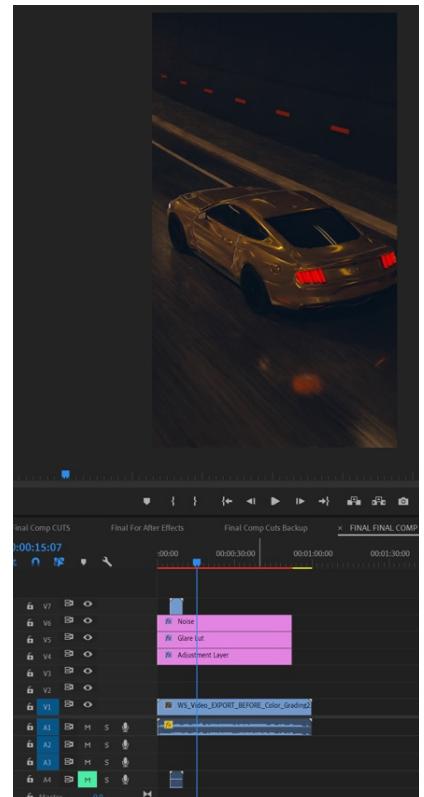
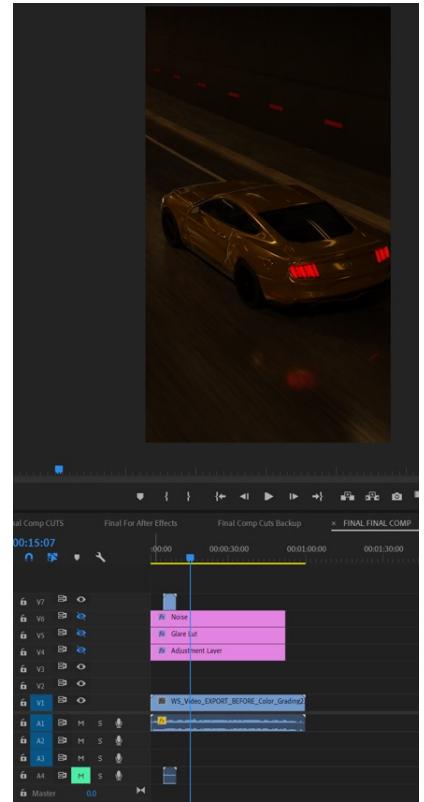


Abb. 87: Before & after color grading

15. Digital Signage & Prototype creation

In the process of creating the prototype, it was decided that it should be made at the lowest possible cost, since the budget came from the team members.

It was also decided to work with wood since it is a prototype and not a final product. The reason for this decision is that the materials used are low cost and less hard than metal, and do not require hard-to-find tools or processes such as welding.

15.1 Hardware Components

Before starting the design of the prototype, a list of all the hardware components that will be used in the creation process was made.

Undoubtedly, the most important components of the device will be the display and the computer that it will have in its construction.

The role that the display plays in the process of building the prototype is more important than that of the computer, because depending on its size and weight the final device will be built.

15.1.1 Display

The display used comes from an old functional monitor „LG FLATRON W1941S“ which belonged to the project manager.

Product specifications

Display	
Display diagonal	48.3 cm (19")
Display brightness (typical)	300 cd/m ²
Display resolution	1366 x 768 pixels
Native aspect ratio	16:9
Response time	5 ms
Aspect ratio	16:9
Contrast ratio (typical)	1000:1
Contrast ratio (dynamic)	8000:1
Viewing angle, horizontal	160°
Viewing angle, vertical	160°
Pixel pitch	0.3 x 0.3 mm
Horizontal scan range	30 - 61 kHz
Vertical scan range	56 - 75 Hz
RGB color space	sRGB



Abb. 88: LG Flatron

Design	
Product colour *	Black
Certification	TCO03, TCO99, UL(cUL), TUV-GS, SEMKO, FCC-B, CE, EPA, VESA, ISO13406-2
Compliance industry standards	DDC2B
Ports and interfaces	
VGA (D-Sub) ports quantity	1

Ergonomics	
Panel mounting interface	75 x 75 mm
Tilt angle range	-5 - 20°
Plug and Play	yes
LED indicators	Stand-by

Tab. 3: Technical specifications 1

Power	
Power consumption (typical) *	22 W
Power consumption (standby) *	1 W
Multimedia	
Built-in speaker(s)	no
Built-in camera *	no
Weight & dimensions	
Width (with stand)	448.4 mm
Depth (with stand)	198.4 mm
Height (with stand)	357.9 mm
Weight (with stand)	3.3 kg
Width (without stand)	44.8 cm
Depth (without stand)	5.76 cm
Height (without stand)	27.8 cm
Weight (without stand)	3 kg
Other features	
Display	LCD
TV tuner integrated	no
Package dimensions (WxDxH)	518 x 122 x 376 mm
Package weight	4.7 kg
Power requirements	AC 100~240V

Tab. 4: Technical specifications 2

To use it optimally, without the distance between the display and the window through which the image of the device is played being too large, it was necessary to remove the housing and the monitor stand.

15.1.2 Computer

The computer used in the production of the prototype is a Mini-PC, Manufacturer: „BMAX“, Model: „MaxMini B1“.

For its purchase, the costs were borne by the team members.

Product specifications

Processor	2.48 GHz celeron
RAM	4 GB LPDDR3
Memory Speed	1066 MHz
Hard Drive	64 GB eMMC
Graphics Coprocessor	HD Graphics 400
Chipset Brand	Intel
Card Description	Integrated
Wireless Type	802.11ac
Number of USB 2.0 Ports	2



Abb. 89: BMAX (MaxMini B1)

Tab. 5: Technical specifications 3

Brand	BMAX
Series	Mini PC
Item model number	B1
Hardware Platform	PC
Operating System	Windows 10
Item Weight	1.46 pounds
Product Dimensions	4.7 x 4.7 x 0.9 inches
Item Dimensions LxWxH	4.7 x 4.7 x 0.9 inches
Color	Black
Processor Brand	Intel
Processor Count	2
Computer Memory Type	DDR3 SDRAM
Flash Memory Size	128 GB
Hard Drive Interface	Serial ATA-600
Power Source	DC

Tab. 6: Technical specifications 4

Other components

The hardware components of the prototype also included a VGA cable, a VGA-HDMI converter cable, and a plug that was mounted inside the device

15.2 Housing design

In the process of designing the housing of the digital signage device, the number of monitors used, namely 1, and its weight were considered, these playing an essential role in the final dimensions that the housing had to have. Initially it was intended that the device should be as slim as possible, but this was not possible with only one monitor, requiring a second monitor as a counterweight.

Since the device was intended to be mobile, it was designed with lockable wheels.

The first step was to create a sketch of the device, followed by a 3D model prototype.

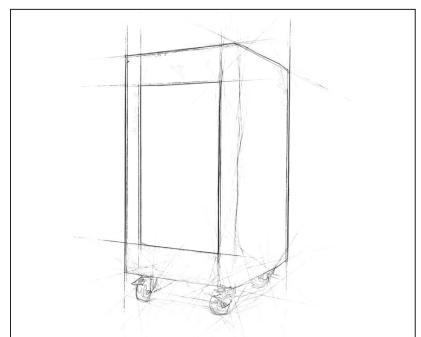


Abb. 90: Sketch prototype

15.2.1 3D Modeling & Prototyping

The software used is an open-source program, more precisely Blender.

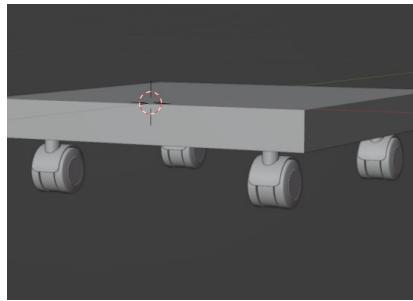


Abb. 91: Base

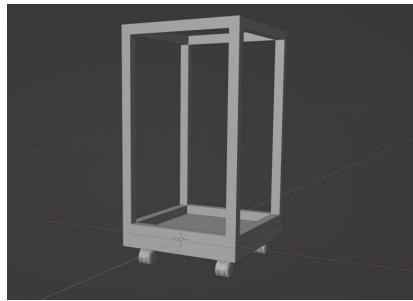


Abb. 92: Base with supporting poles

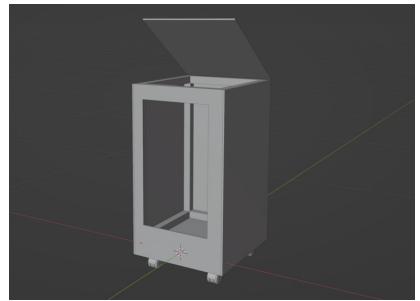


Abb. 93: Final housing

15.3 Construction of the prototype

15.3.1 Materials used

	OSB-3-Verlegeplatte Material used for the outer walls and cover of the device. Cf.: https://www.obi.at/verlegeplatten/osb-3-verlegeplatte-stumpf-15-mm-x-62-5-cm-x-125-cm/p/8266876
	Cubic wooden bars Material used in the construction of the structure of the device. Cf.: https://www.dedeman.ro/ro/sipca-din-lemn-de-rasinoase-patrata-30-x-30-mm-1-mm/p/4013361
	V-type metal collar fixing plate Material used for fixing and fastening the cubic wooden rods, and the skeleton of the base structure of the device Cf.: https://www.onomeus.ro/cumpara/placuta-fixare-coltar-metalic-tip-v-40x40-16x2mm-1707
	Holzscrews Used to join elements Cf.: https://www.staalkabelstunter.com/de/sp/anplattenschrauben.html
	Narrow Hinges Used in securing the device cover Cf.: https://www.obi.at/scharniere/scharnier-schmal-gelb-verzinkt-60-mm-x-34-mm/p/9965195?wt_mc=gs.pla_lia.Technik_EisenwarenBeschlaege.Beschlaege&wt_cc=1-671736388&wt_ccid=&wt_cc9=37827457567&storeid=34&clid=CiwKCAjw9qiTBhBbEiwAp-GE0dZNU9DW6byOpI_8Cdq01HuvjdAYko8CvInD9N4R7iT2MSpeycBuKhoCY3lQAvDBweE

Tab. 7: Material list 1

	Kitchen cabinet handles Used for fixing the screen inside the housing
	Kitchen worktop Used as the base of the device
 <small>Cf: https://www.staalkabelunter.com/de/sp_anplattenschrauben.html</small>	Black spray for wood painting

	Swivel wheels Used as a supporting and moving mechanism of the device
--	--

Tab. 8: Material list 2

15.3.2 Used utensil

In the process of assembling the device electric tools for cutting and sanding wood were used: hammer, pliers, screwdriver, but also a wood and upholstery stapler.

16. Operating system

Initially, it was desired to use the Linux operating system because it requires fewer resources, thus providing a higher computer speed. Linux also offers much better security than the Windows operating system.

After successful installation, following difficulties encountered in working with it, it was decided to install and use the Windows operating system.

The first installation of the windows operating system was done, and several attempts were made to disable the option requiring a PIN or password to operate the computer. The digital signage device is intended to be 100% remote.

controllable, requiring only a power source, thus requiring a password becomes an inconvenience as it requires a keyboard and a person to enter it.

The solution found was to reinstall the operating system, without the computer being connected to the Internet, which made it possible to register a local user, without being required to register with a Microsoft account, so avoiding the need to enter a password.

16.1 Self-starting

In order for the device to turn on as soon as it is connected to a power source, the BIOS function „Restore on AC/Power Loss has been set to mode: “Power On”

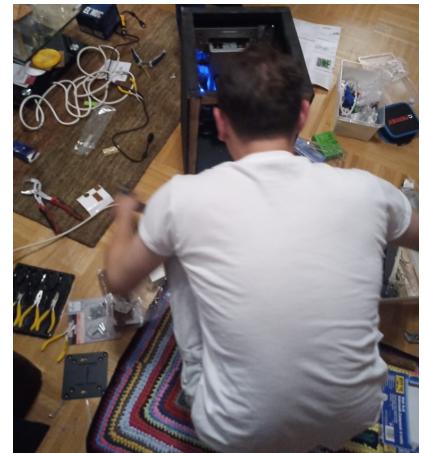


Abb. 94: Building process

Restore on AC/Power Loss	(Power On)
Ring-In Power On	(Disabled)
PCI Devices Power On	(Disabled)
PS/2 Keyboard Power On	(Disabled)
RTC Alarm Power On	(Disabled)

Abb. 95: Mode setting

16.2 Digital Signage Software & Installation

16.2.1 Xibo

As a result of several researches made to find a digital signage software to allow the operation of the advertising device, the software „Xibo“ was chosen, which is an open-source program, having all the necessary features to control the device for the desired purpose.

To be able to control the device remotely, it is necessary that the player installed in the computer can automatically connect to a server. For this reason, it was decided to purchase a cloud server from the company Hetzner, the costs being borne by the team members.

Cloud server and its specifications

Linux operating system along with the docker component were installed on the purchased server, it was necessary for Xibo to run as smoothly as possible, windows requiring too many resources.

To install the Xibo software as a control management system on the cloud server, the installation steps were followed which can be found here: <https://xibo.org.uk/docs/setup/xibo-cms-with-docker-on-ubuntu-18-04>

While trying to accurately follow the steps to install the CMS on the cloud server, it was found that the Server Command Console provided by the browser was not working properly, distorting the copied commands, resulting in the inability to enter the correct commands, necessary for a successful installation.

The solution to this problem was found by using a terminal emulator, serial console, and network file transfer application functionality called PuTTY, also an open-source software, which allowed the connection to the server and the correct entry of commands.

The following commands were further entered through the PuTTY program on the server:

The registration of the screen in CMS

For this to be possible, it was necessary to install the “XIBO Player” on the computer to which the monitor of the digital signage device is connected.

To achieve this, the installation steps provided by Xibo on their website were followed.

<https://xibo.org.uk/docs/setup/xibo-for-windows-installation>

Broadcasting schedule

To highlight the diversity of ads that can run on the built advertising device, another 4 sample ads were designed using the EnvatoElements platform.

Creating a broadcast schedule is only possible through Xibo CMS.

The first step in creating a program is to add a layout.

Then the layout format is assigned, in this case a full screen format was chosen

Later, the layout is named, and its resolution is set.

The region to which the content will be broadcast is further defined.

Further the video is uploaded and dragged over the region in the timeline.

In the end, the layout is saved, then its window will be closed.

The broadcast schedule was made in the „Schedule“ section of the content management system Xibo.

The type of event is specified, the display on which to broadcast the schedule is chosen, the time and period of the schedule is set, the layout is chosen. These are the settings made in this case.

16.3 Testing & Conclusion

The device starts successfully when connected to a power source, without the need to operate the input/output button.

The image is clear, positioned in portrait mode.

After the operating system boot-up process is completed, the Xibo player starts up by itself in full screen format and the advertising device runs the pre-established broadcast schedule.

The device works exactly as intended.

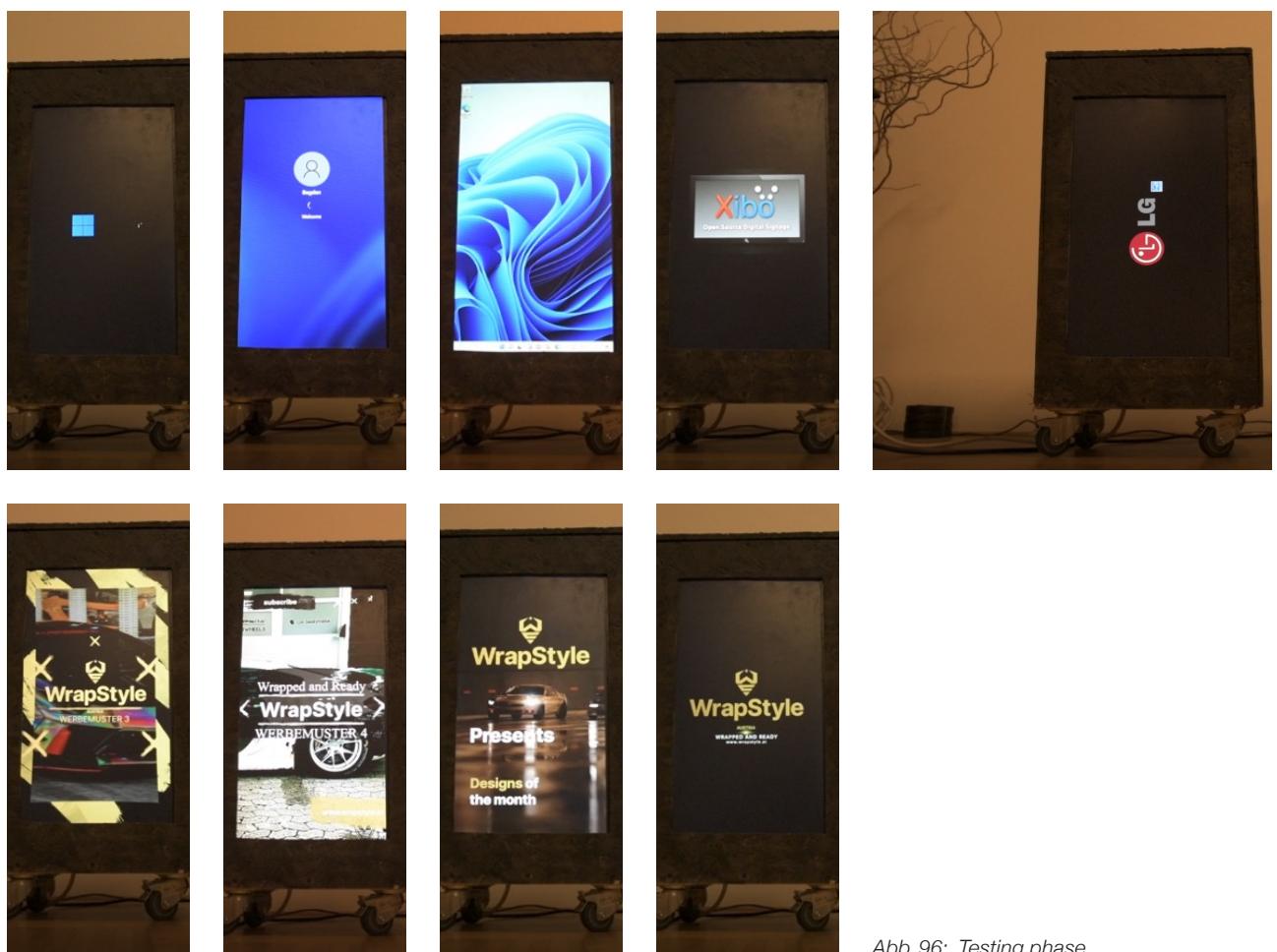


Abb. 96: Testing phase

Resümee & Ausblick

Alexandru Sebastian Bogan

The work I have put into my thesis is an experience that has resulted a growth in my personal and especially professional development.

As a result of this work, I have gained a lot of specialized information in the field of marketing, digital signage, and graphic production, which I wanted to acquire, develop and practice.

Working in a team helped to develop my communication and coordination skills. The constant exchange of information I had with my colleagues led to the enrichment of my knowledge in the field of marketing, corporate identity, and web.

The importance of respecting the deadlines that I set during the project phase with my colleagues, contributed to a much greater responsibility and assumption, as the complexity of the completed project is very high, like the work done by advertising and graphic agencies. This led to improved project management skills.

The marketing research and analysis done for our client led to a better understanding of the market, the client's needs, and the potential clients they target.

Exploring the field of digital signage was something I always wanted to do, as it is a field that interests me enormously, and in which I want to operate professionally in the future. Integrating it as part of my degree work was the perfect opportunity to learn and experiment in this field. A lot of knowledge has been assimilated and I have been able to create an overview of this field. The creation of the prototype of the advertising device required design, identification of optimal hardware and software components, as well as handwork in its production. The solutions found after the research contributed to the acquisition of a better know how about the existing products on the market and the content management software systems used in the digital signage industry.

Setting up the server in the cloud on the Linux platform results in a first contact with this operating system, but the difficulties encountered and solved have successfully contributed to the formation of a minimal knowledge base, which gives me more confidence in my ability to work with it in the future.

Testing the advertising content running in the XIBO content management system made me understand how the broadcasting programs are programmed in digital signage advertising networks.

The 3D graphic production part of the project was a massive challenge. The commercial was one of the most complex projects I have completed. As with Digital Signage, 3D is of major importance to me. Not only I am passionate about it and want to develop my skills and knowledge as much as possible, but it is also a future niche in the field of graphic, advertising and cinematic production.

Integrating it into my degree thesis is perhaps the best thing I could have done to enrich my knowledge but also to practice as much as possible with 3D software. The project was a very complex one, requiring all the knowledge I possessed, but also the accumulation of new knowledge to make possible the production of a 3D commercial that would be as close as possible to photorealism.

Research was carried out to find and acquire 3D objects and materials for them. The skills of 3D modelling, texturing, car rigging, car animation and camera animation were put into practice using the keyframing technique.

All materials and graphic resources used in the project have been purchased or are licensed as open-source materials to avoid copyright infringement.

Numerous renderings have been carried out and problems have been identified for which solutions had to be found. For many of these problems encountered, finding solutions involved a deep dive to understand the origin of the errors and how they could be solved, thus improving the knowledge considerably.

Postproduction skills, such as video editing, color grading, sound design, storytelling, motion graphics, and the entire Adobe premiere- Adobe After Effects workflow, were also improved by editing scenes obtained after the rendering process was done, and all the scenes were exported.

Throughout the project various issues were identified for which a problem had to be found, which made me aware that the unexpected can happen at any time, regardless of the complexity of a project, and to prevent the inability to finish a project on time, a better planning and a longer execution time is needed.

Erdogan Gölge

Anhand der Lehrausbildung als Medienfachmann mit dem Schwerpunkt „Marktkommunikation und Werbung“ und einige Arbeitsjahre als Medien- bzw. Grafikdesigner kann man viel an Erfahrung mit in die Diplomarbeit einbringen. Viele verschieden erlernte Tools konnten bei der Erstellung eines Werbekonzeptes, eines Logos, der Drucksorten oder eines CD-Handbuches durch die Ausbildung verwendet bzw. angewendet werden. Auch der Umgang mit dem Klienten war nicht allzu schwer oder herausfordernd, weil genug an Erfahrung vorhanden ist. Mit einigen Arbeitsjahren und Kontakt mit verschiedenen Klienten, kann man schon ca. vorhersagen, was die Klienten eigentlich wollen oder denken. Hierbei gibt es natürlich sowohl leichte als auch schwierigere Klienten, die verschiedene Arten von Gedanken und Wünsche haben. Es ist nicht immer leicht, die Wünsche auf Anhieb zu erfüllen oder die Probleme zu lösen. Die Probleme können sein, dass ein Logo bzw. ein komplettes Corporate Design fehlt oder eine Website angepasst werden muss.

Wie schon im Praxisteil beschrieben, wurden CD-Handbücher bis lang immer nur im Full HD Format als PDF erstellt und dem Klienten überreicht. Das Format war immer fixiert, sprich 1920 x 1080 Pixel und sogar der Satzspiegel dafür blieb gleich. Je Projekt, wurden Texte, Bilder und Stil angepasst. Mit dem Stil ist gemeint, dass die Schriftarten und Farben angepasst worden sind. Meistens kamen die Hausschriften und -farben ins Spiel, damit die Wiedererkennung erhalten bleibt und sich dem Corporate Design anpasst. Selbst die Paginierung und die Kolumnentitel blieben fast immer an derselben Stelle, jedoch wurden diese genauso angepasst. Die digitalen Handbücher waren eben je nach Projekt, einmal länger oder kürzer. Dies kommt meistens auf die Designaufgabe an, denn nicht alle Klienten benötigen alle Drucksorten oder Designelemente. Manchmal wurde sogar nur ein Stylesheet für den Klienten erstellt, aus finanzieller Sicht.

Das Sprichwort „Übung macht den Meister“ sagt viel aus und so ist die Einstellung über die ganze Zeit. Da seit 2012 (Beginn der Lehrausbildung) schon vieles verschiedenes design wurde und das Designen an sich wie atmen ist, hat es trotzdem sehr viel Spaß an dem Projekt gemacht. So wurden die gesammelten Erfahrungen und die erlernten Fähigkeiten in das Projekt eingeflossen. Jedoch gab es hier trotzdem eine große Herausforderung bei der Diplomarbeit. Abgesehen von dem schriftlichen Teil, da nie studiert wurde, war das Corporate Design Handbuch trotzdem eine Aufgabe für sich.

Dadurch das ein gedrucktes Werk nicht mehr verbessert werden kann, lag am Anfang eine große Last auf den Schultern. Hier musste die Makrotypografie wohl überlegt werden. Ohne die Bestimmung des Formates und des Satzspiegels, konnte das Handbuch nicht gestaltet werden. Abgesehen vom Format, mussten auch die Inhalte wohl überlegt werden, was da implementiert wird und was nicht. Wie schon erwähnt gibt es nach der Produktion kein Zurück mehr und wenn da etwas in Vergessenheit gerät, wäre dies sehr problematisch. Nach der Bestimmung des Formates, musste genauso an Schriftgröße und Zeilenabstand gedacht werden. Am Bildschirm wirken die Punktgrößen der Schriften anders als auf gedruckten Medien. Wie im theoretischen Teil zu lesen ist, gehört ja die Bestimmung der Schriftgröße genauso zur Makrotypografie. Mit der Bestimmung des Formates und der Schriftgröße inkl. Zeilenabstand war die größte Last von den Schultern somit genommen.

Dank der Diplomarbeit an der Graphischen, wurde wieder neues angeleert und neue Erfahrung gesammelt. Durch die ganzen Pioniere, wie Massimo Vignelli, Josef Müller-Brockmann sowie Otl Aicher, des Grafikdesigns war der Wunsch für die Erstellung eines CD-Handbuches als Printmedium schon immer vorhanden. Durch die Diplomarbeit ist dies nun auch noch in Erfüllung gegangen. Da die Erstellung eines Corporate Designs mit voller Hingabe erfüllt wird, hat der Prozess von Anfang bis Ende sehr viel Spaß gemacht. Dadurch konnten Kenntnisse und Fähigkeiten nochmals gestärkt werden. Die Erstellung des CDs und der Drucksorten war quasi ein Spaziergang, was wiederrum das Handbuch eine Riesenhürde war.

Was die Diplomarbeit bzw. die Arbeit, die dafür geleistet wurde für die Zukunft bedeutet? Ein weiteres starkes Projekt ist nun ein Teil des Grafikdesign Portfolios und das CD-Handbuch als Produkt wird sowohl bei den Bewerbungsgesprächen als auch bei den Klientengesprächen sicherlich ein starkes Fundament darstellen. Die Fähigkeiten sind sattelfester geworden, als diese schon waren. Die Erfahrung, die dank dem Handbuch gemacht wurde, wird in der Zukunft sicherlich in den Designprozessen miteinfließen.

Kevin Englich

Zu Beginn der Diplomarbeit war etwas Angst und Nervosität dabei, nicht nur weil es eine große und wichtige Arbeit ist die viel Zeit und Mühe kostet sondern auch weil ich mit tollen und super professionellen Diplomkollegen zusammenarbeite die die bereits sehr viele Jahre Erfahrung und Wissen über diese Branche besitzen. Gerade als Neuling, vor allem wenn man aus einer komplett anderen Branche kommt und alles Neu-land ist hat man gerade Angst nicht mithalten zu können bei so einer erfahrenen Gruppe. Durch das 1,5 Jahre abgebrochene IT Studium mit dem Schwerpunkt „Programmieren“ und einige Jahre Beschäftigung im Privaten Leben mit Computer und Technik als Hobbie ist es aber zum Glück nicht besonders schwer aufgefallen dies in die Diplomarbeit im Gange zu setzen. Natürlich, IT und Programmieren ist viel technischer aber dabei ist die Flexibilität mit verschiedenen Programmen und Software gemeint, wie schnell man sich angepasst hat um seine Ziele für die Diplomarbeit erfüllen zu können.

Wie im bereits beschriebenen Praxisteil, alles wurde innerhalb der Diplomgruppe im Voraus bewusst geplant und ausgeführt. Das gesamte CD, Hausschriften und Farben, Bilder, Texte, Schriftarten, Stil usw. Mit dem Stil ist gemeint, dass die Schriftarten und Farben angepasst worden sind. Dies wurde nicht nur für die Drucksorten geplant und übernommen sondern bewusst auch im Webdesign so gut wie möglich nachgebildet damit die Wiedererkennung erhalten bleibt und sich dem Corporate Design anpasst. Dafür das dies der erste Versuch war eine Webseite zu designen hat es mit dem CD sehr gut geklappt, normalerweise ist so ein Stil der Schlicht und Modern ist schwer nachzubilden. Trotz des schlichtes Aussehen steckt dahinter viel mehr Arbeit als man denkt. Lob von den Diplomkollegen kamen wegen des Designs der Webseite was das Selbstbewusst und Motivation an dieses Projekt steigerte.

Die richtige Denkweise die einem hier Vorantreiben kann ist immer alles Schritt für Schritt zu machen und die Steine aus dem Weg räumen. An diese Einstellung musste man sich daran gewöhnen und immer das Ziel vor Augen haben. Es hat sehr viel Spaß gemacht die Webseite zu designen und an diesem Projekt zu arbeiten, natürlich gab es tiefen und Höhen, trotzdem hat es im großen und ganzen Spaß gemacht. Durch die Erfahrene Diplomkollegen wurden sehr viele Tipps gesammelt und angewendet die das Ganze um einiges vereinfacht haben. Die gesammelten Erfahrungen und erlernten Fähigkeiten kann man immer wieder im späteren Leben gebrauchen und man freut sich über alles was man bekommen kann. Jedoch war das Schreiben der Diplomarbeit eine große Herausforderung für sich die auch sehr viel Zeit im Anspruch genommen hat, und die Webseite inkl. SEO sowieso.

Am Anfang war es sehr viel Arbeit und unübersichtlich zugleich. Man hat mit den Gedanken gespielt und nebenbei sehr viel Skizziert wie die Struktur und Aufbau der Webseite ausschauen soll, was man implementieren sollte und was man nicht sollte. Ohne eine gute Idee konnte man keine vernünftige Webseite gestalten, da man nicht einfach unprofessionell vorgehen will und man einen strukturierten Plan braucht. Dann ist der Gedanke gekommen einfach die Webseite so aufzubauen so wie sie ursprünglich auch ist, nur mit einem neuen Design, eben Redesign, den CD Stil anpassen der von Anfang an geplant worden ist. So entstand auch die Website.

Durch die Diplomarbeit an der Graphischen, wurde wieder was neues fürs Leben angelernt und neue Erfahrung wurde gesammelt. Eben durch die Vergangenheit und das IT Studium war der Wunsch an Webdesign am meisten Vorhanden und auch an erster Stelle, da die Interesse für die Schritte und Erstellung einer Webseite schon immer vorhanden waren, auch bevor der Branchenwechsel stattgefunden hat. Dank der Diplomarbeit ist dieser Wunsch der schon lange drauf gewartet hat in Erfüllung gegangen. Dieser Prozess hat von Anfang bis am Ende sehr viel Spaß gemacht, da Kenntnisse, Fähigkeiten und Erfahrungen hiermit gestärkt worden sind, sowohl Webdesign als wie auch SEO.

Die Diplomarbeit hat nicht nur Vorteile im Bereiche wie Kenntnisse, Fähigkeiten und Erfahrungen gebracht sondern auch im Portfolio sowie Arbeitsleben und Bewerbungsgespräche. Das ganze hilft hier einem besser solider darzustellen und ein besseres Erscheinungsbild zu haben. Durch die Diplomarbeit und das ganze Prozess hat man sehr viel an Selbstvertrauen gewonnen und wie weit einer selber gehen kann.

Glossar

#

3D rendering: is the process of turning information from a 3D model into a 2D image. 3D rendering can be used to create a variety of images, from the intentionally non-realistic to what's called photorealistic.

A

Analyse-Tool: Man kann auch ‚Reporting-Tool‘ sagen. Ein bekanntes ist Google Analytics. Mit einem Analyse-Tool misst du die Anzahl der Seitenbesucher und deren Verhalten auf der Website: Man erfährt, wann wie viele Besucher auf die Website kommen, auf welchen Seiten sie sich herumtreiben und wie lange sie dort bleiben. Auch woher die Besucher kommen, also zum Beispiel ob durch direkte Eingabe der Internetadresse, über Social Media-Plattformen oder Werbeanzeigen.

Antiqua: Als Antiqua werden Serifenschriften bezeichnet, deren Form sich aus der römischen Capitalis ableitet.

Außensteg: Der freie Raum zwischen der äußeren Kante des Satzspiegels und der Papirkante.

B

Beschnitt: Der Anschnitt (auch Beschnitt genannt) ist der Rand, der über das angelegte Format einer Drucksache hinausgeht. Der Anschnitt wird von Schneidemaschinen im Druck entfernt und beträgt in der Regel etwa 3 mm an allen Seiten. Ohne diese Beschnittzugabe würden bei Drucksachen sichtbare Blitzer oder Streifen am Rand entstehen. Da weder der Drucker noch die Druckmaschine mikroskopisch genau zuschneiden können, ist eine Beschnittzugabe immer gern gesehen, vor allem, wenn es ans Falzen und Binden geht.

Brand Design: „Brand Design“ beschreibt die Gestaltung und Umsetzung einer Marke. Dabei spielen Faktoren wie Unternehmenskultur, strategische Konzeption und medienspezifische Ästhetik eine wichtige Rolle, um die Wiedererkennung am Markt zu steigern.

Briefing: Das Briefing enthält im Grunde genommen allgemeine Informationen, die Kreative, Werber oder Agenturen zur Umsetzung eines Projektes benötigen. Ein Briefing beschreibt, um was es in dem Auftrag geht, was dabei zu beachten ist, welche Ziele verfolgt werden oder welche weiteren Faktoren es sonst noch gibt. Das Briefing wird häufig vom Kunden selbst oder mit Hilfe von Marketing-Experten entwickelt, um sich ein genauereres Bild über den Umfang der zu erbringenden Leistungen zu verschaffen. Es gibt mehrere Arten von Briefings. Briefings können kurz, lang, ausführlich oder aber auch oberflächlich sein.

Broadcast: electronic transmission of radio and television signals that are intended for general public reception, as distinguished from private signals that are directed to specific receivers.

C

CMS: Kurz für ‚Content Management System‘, Redaktions- oder Inhaltsverwaltungssystem. Man sagt auch ‚Backend‘. Das ist die Oberfläche, auf der du Änderungen an deiner Website vornimmst. Erst nach dem Speichern oder Online-Stellen sehen Website-Besucher die Inhalte und Änderungen. Für die Arbeit mit einem CMS benötigt man keine Programmier- oder HTML-Kenntnisse.

Color grading: is the process of stylizing the color scheme of your footage by “painting” on top of what you’ve established through color correction. After the colorist completes color correction, they can begin the process of grading the footage.

Content: Bedeutet ‚Inhalt‘: Können Texte, Bilder, Videos, Audiofiles, Grafiken etc. sein, alles, womit man Seiten befüllt.

Copyright: is a type of intellectual property that protects original works of authorship as soon as an author fixes the work in a tangible form of expression.

Corporate Color: Ein Corporate Font ist eine eigens für ein Unternehmen oder eine Marke definierte Farbe. Der Corporate Color wird auch als Hausfarbe bezeichnet und ist ein wichtiger Bestandteil des Corporate Designs.

Corporate Design: Das Corporate Design steht im Grunde genommen für die visuelle Darstellung eines Unternehmens. Ein einheitliches Erscheinungsbild trägt außerdem zur Identität der Marke bei. Wichtige Maßnahmen und Elemente wie beispielsweise das Logo werden daher in einem Corporate Design Manual festgehalten. Das Corporate Design ist ferner Teil der Corporate Identity.

Corporate Font: Ein Corporate Font ist eine eigens für ein Unternehmen oder eine Marke gestaltete oder definierte Schrift. Der Corporate Font wird auch als Hausschrift bezeichnet und ist ein wichtiger Bestandteil des Corporate Designs.

Corporate Identity: Die Corporate Identity steht für die Unternehmensidentität und beschreibt die Bestandteile, die das Erscheinungsbild kennzeichnen. Außerdem ist das Ziel einer Corporate Identity die Positionierung des Selbstverständnisses und die Ausarbeitung eines Selbstbildes, das das Unternehmen kennzeichnet und von Mitbewerbern unterscheidet.

D

Design Manual: Im Design Manual (auch Corporate-Design-Handbuch genannt) werden die grundsätzlichen Gestaltungselemente des Corporate Designs festgehalten. Das Handbuch dient somit zur Orientierung und informiert über die verwendeten Schriftarten, Farben, Formen und weiteren Elementen. Ein Design Manual ist sinnvoll, sofern mehrere Dienstleister mit der Umsetzung von Projekten beauftragt sind. Das Design Manual gilt also als eine Art Regelwerk, das dafür sorgt, dass ein einheitliches Erscheinungsbild eingehalten wird.

Design Thinking: Design Thinking beschreibt einen Kreativprozess zum Finden von neuen Ideen und Lösungen. Die Methode beruht darauf, sich am Nutzer zu orientieren, dessen Bedürfnisse zu erkennen und anwenderfreundliche Innovationen herauszubringen. Hierfür werden mehrere Phasen durchlaufen. Mit der Design-Methode Design Thinking verbindet man also gemeinsames Arbeiten im Team. Dabei zielt die Arbeit darauf ab, zu ungewöhnlichen Ergebnissen zu kommen.

Designdisziplinen: Designdisziplinen nennt man die Gebiete im Design-Bereich. Corporate Design, Game Design, Motion Design, Foto Design, Mediendesign, Webdesign etc. sind allesamt Designdisziplinen, auf die sich Kreative spezialisieren können.

Domain: Einzigartige, unverwechselbare Internetadresse, zum Beispiel ‚contentessa.at‘. Jede Website benötigt eine.

Drag and Drop: Ziehen und fallen lassen. Wenn du in einem Editor Elemente einfach mit der Mouse anklicken und verschieben kannst, sodass sie woanders angezeigt werden, ohne dass man den Programmiercode bearbeiten muss.

Durchschuss: Der Begriff stammt aus dem Bleisatz und bezeichnete ursprünglich die nicht druckenden Metallstücke, die zwischen die Zeilen geschoben wurden, um den Abstand zu erhöhen. Heute definiert der Begriff den zusätzlichen Abstand, der sich durch Zeilenabstand minus Kegelgröße ergibt. Beträgt die Schriftgröße 12 Punkt und der Zeilenabstand 14 Punkt, ist die Größe des Durchschusses zwei Punkt.

F

Flattersatz: Eine Satz- bzw. Ausrichtungsart, bei der einer der beiden oder beide Ränder des Textes flattern, der Text also keine gleichmäßige Achsen ausweist.

Font: Ein Font ist eine Schriftart für den Computer. Sehenswerte Free Fonts, die es kostenlos zum Downloaden gibt, werden regelmäßig hier auf Designer in Action vorgestellt. Hochwertige Fonts verfügen über

entsprechend umfangreiche Kerningtabellen und darüber hinaus erweiterte OpenType-Features.

Footer: Der untere Bereich einer Website, dort findet man oft das Impressum.

Form follows function: „Form follows function“ ist ein Designleitsatz und heißt im Grunde genommen nichts anderes als „Form folgt Funktion“. Die äußere Form, insbesondere von Produkten, lässt sich dabei in der Gestaltung von Ihrem Einsatzzweck ableiten. Somit ist die Reduktion auf das Wesentliche ein gängiger Betrachtungsweise von „Form follows function“.

Fußsteg: Fuß oder Fußsteg bezeichnet den unteren, freien Rand unterhalb des Satzspiegels.

G

Gemeine: Mit dem Begriff Gemeine meint man in der heutigen Zeit meist Kleinbuchstaben. Eine Gemeine besteht ausschließlich aus Kleinbuchstaben. Ein einzelner Großbuchstabe wird Minsukel genannt.

Glyphe: Ein Zeichen, das innerhalb eines Schriftschnitts in unterschiedlichen Varianten vorliegt.

Goldener Schnitt: Der Goldene Schnitt ist eine Proportionsregel, mit der sich eine ästhetisch ansprechende Darstellung erzielen lässt. Es handelt sich dabei um ein Teilungsverhältnis, das oft in der Natur vorkommt und von Menschen (unterbewusst) als harmonisch empfunden wird. Ein Bildaufbau in der Gestaltung oder in der Fotografie beruht auf der „Golden Spirale“ (auch „Fibonacci-Spirale“ genannt). Das Seitenverhältnis der Strecke a) zur Strecke b) beträgt dabei 61,8% zu 38,2%.

Grundlinie: Auch Schriftlinie genannt, die Linie, auf der die Mittellängen aufsitzen.

Grundlinienraster: Imaginäres Raster, auf dem die Grundlinien des Grundtextes entlanglaufen. Seine Schrittweite entspricht in der Regel dem Zeilenabstand des Grundtextes. Spielt für die Registerhaltigkeit eine wichtige Rolle.

H

H1, H2, H3: Das ‚H‘ steht für ‚Heading‘ (Überschrift) und die Zahlen für die Gliederungsstufen. H1 ist die höchste Stufe, danach kommt H2 und H3. H1 etc. ist ein Überbleibsel aus der Programmiersprache. H1 ist die wichtigste, die größte Überschrift in einem Webtext. Hier sollten auch deine Keywords vorkommen.

Homepage: Ist technisch gesehen nur die Startseite, das heißt die erste Seite einer Website. Wird umgangssprachlich jedoch häufig gleichgesetzt mit ‚Website‘.

Hurenkind: Ein Umbruchfehler, bei dem die letzte Zeile eines Absatzes am Anfang einer neuen Spalte oder Seite steht.

I

Icon: Als Icon wird ein kleines Symbol oder Piktogramm bezeichnet, das innerhalb von grafischen Gestaltungen auf Websites und im Printbereich verwendet wird. Icons gibt es folglich in vielen Varianten, Formaten und auch als Webfonts.

Illustrator: Illustrator ist das Vektorprogramm von Adobe und Bestandteil der Creative Cloud. Mit Illustrator lassen sich Logos, Icons, Piktogramme und typografische Gestaltungen für Web, Print und Videos realisieren.

InDesign: InDesign ist das aktuell führende Programm für Layout und Design. Mit InDesign lassen sich Broschüren, Bücher, Magazine, Poster, eBooks, interaktive PDFs und mehr erstellen. InDesign ist außerdem Teil der Creative Cloud und kann einzeln oder zusammen mit anderen Programmen im Paket abonniert werden.

K

Kegel: Den Körper eines Bleibuchstabens bezeichnet man als Kegel.

Kerning: Der typografische Begriff Kerning bezeichnet den optischen Ausgleich von Buchstaben und Wortzwischenräumen. Durch Kerning kann eine Schrift harmonischer und gleichmäßiger wirken. Typische Kerningpaare in der Typografie sind zum Beispiel die Buchstabenkombinationen „AV“, „Ty“ oder „LT“. Für die Detailtypografie ist ein „manuelles Kerning“ erforderlich.

Keyframe: A key frame (or keyframe) in animation and filmmaking is a drawing or shot that defines the starting and ending points of any smooth transition. These are called frames because their position in time is measured in frames on a strip of film or on a digital video editing timeline.

Kopfsteg: Der freie, nicht bedruckte Bereich über dem Satzspiegel am Kopf der Seite.

L

Layout: Eine kombinierte Seite mit Text- und anderen grafischen Elementen und Bildern.

Lebender Kolumnentitel: Eine Zeile mit Seitenzahl und Text, die meist am Kopf des Layouts steht und Informationen zur Seite wie z.B. die Kapitelüberschrift enthält. Beim lebenden Kolumnentitel wechselt abhängig vom Inhalt der Seite der Text.

Legende: Eine Erklärung zu Seitenelementen, beispielsweise zu einem Bild.

Lens flare: A lens flare happens when light is scattered or flared in a lens system, often in response to a bright light, producing a sometimes undesirable artifact in the image.

Ligatur: Eine Buchstabenkombination von mindestens zwei Zeichen, die im Bleisatz auf einen Kegel gegossen wurden. Ligaturen verbessern die Lesbarkeit.

Linearschrift: Bei diesen Schriften weisen alle Zeichen die gleiche optische Strichbreite auf. Bei genauerem Hinsehen zeigt sich häufig, dass eine optisch gleiche Strichbreite bei den Rundungen nur erreicht werden kann, wenn die Breite leicht variiert.

Link: Kurz für ‚Hyperlink‘. Über einen Link navigiert man im Internet durch verschiedene Seiten. Über diesen Link landet man zum Beispiel auf die Home-Seite.

M

Marginalien: Bemerkungen, die Zusatzinformationen oder Bilder zum Grundtext liefern und in der Regel am äußeren Seitenrand platziert sind.

Mobile Endgeräte: Damit sind Handys, Tablets und Laptops gemeint, also alle Geräte, die rumgetragen und mit denen man unterwegs arbeiten, surfen, telefonieren, skypen etc. kann.

mobile first: ‚Mobil zuerst‘. Ist ein Denkansatz und wird meist in dem Zusammenhang verwendet, dass man sich bei der Darstellung einer Website zuerst vor allem der guten mobilen Darstellung am Handy widmet.

Mockup: Unter Mock-ups versteht man Dateien, die eine Szene mit einem oder mehreren Platzhaltern beinhalten. Diese Bereiche können durch eigenes Material ersetzt werden. So lassen sich beispielsweise Screenshots von Webseiten in Abbildungen von mobilen Geräten und Bildschirmen positionieren oder die Darstellung und Wirkung eines gedruckten Heftes nachahmen. Kreative nutzen diese Art der Vorlagen häufig dazu, um ihre eigenen Arbeiten und Projekte vorzustellen.

Moodboard: Ein Moodboard ist ein Arbeits- und Präsentationsmittel für Kreative. Es dient der bildlichen Darstellung von Ideen und soll die „Stimmung“ (Englisch: „Mood“) einfangen. Hierzu werden Farben, Beispiele und Ideen gesammelt, um sich eine bessere Vorstellung über das Projekt zu verschaffen. Das Moodboard hilft bei der Festlegung von Elementen und Eigenschaften und ebnet somit den Weg in die passende Richtung.

Motion Graphics: many times, is also called Motion Design, making the relationship between movement and design elements easier to understand.

O

OBJ file: OBJ is a geometry definition file format first developed by Wavefront Technologies for its Advanced Visualizer animation package. The file format is open and has been adopted by other 3D graphics application vendors.

P

Parallax: Einzelne Elemente der Website bewegen sich beim Runterscrollen unterschiedlich schnell. Zum Beispiel, wenn sich das Hintergrundbild langsam, ein anderes Element im Vordergrund aber schneller. Dadurch wird ein 3-D-Effekt erzeugt.

PBR material: a PBR material, which actually stands for Physics-Based Rendering material, is a virtual material pipeline that can simulate any kind of physical material to particularly improve a 3D model. It includes a multitude of parameters such as base color, metalness and roughness.

Permalink: Ein Permalink ist ein dauerhafter Identifikator in Form einer URL. Beim Anlegen eines Permalinks macht man bestimmte Inhalte wie einen Blogartikel dauerhaft und primär über die URL verfügbar.

Personas: Mit Personas meint man in der Werbung und Marketing eine Nutzergruppe, die bestimmte Merkmale teilen. Der Begriff leitet sich vom Lateinischen ab und bedeutet „Maske“. Es handelt sich dabei um fiktive Personen, die in ihrem Verhalten echten Menschen nahekommen sollen. Personas werden oft mit einem Gesicht, Namen und einem Werdegang versehen. So soll ein typischer Nutzer nachgebildet werden. Grundlage für die Entwicklung von Personas sind häufig Befragungen und Interviews.

Photoshop: Photoshop ist ein Bildbearbeitungsprogramm von Adobe und Teil der Creative Cloud. Die Software gilt als Standard in der Kreativbranche. Durch Plug-ins lässt sich der große Funktionsumfang von Photoshop ergänzen und durch Actions, Brushes (Pinselspitzen) oder Texturen noch weiter ausbauen und somit den eigenen Bedürfnissen anpassen.

Photoshop gibt es einzeln oder im Paket mit weiterer Software im Abonnement. Eine 30 Tage laufende Testversion steht zudem zum Ausprobieren bereit.

Plugin: Eine ‚Funktionserweiterung‘ oder ‚Zusatzmodul‘ für Websites. Wordpress-Websites sind zum Beispiel um unzählige Plugins erweiterbar.

Punkt: Eine Interpunktionszeichen und gleichzeitig die kleinste Einheit im typografischen Maßsystem.

Punze: Der Innenraum eines Buchstabens, wie er bei b, o oder d entsteht.

R

Rastersysteme: Mit einem Raster oder Rastersystem (Englisch: „Grid“) wird Ordnung in die Gestaltung gebracht. Ein Raster besteht zudem aus einer Anzahl von vertikalen oder horizontalen Linien, die genutzt werden, um Elemente daran auszurichten. Folglich sind sogenannte Grid-Systeme ein beliebtes Stilmittel im Webdesign.

Responsive: Die automatisch angepasste Darstellung einer Website an verschiedene Bildschirme wie Smartphones, Tablets, Desktops. Eine responsive Website reagiert auf das aufrufende Gerät und passt sich in der Darstellung so an, dass sie für die Bildschirmgröße ideal ist, sprich die Inhalte optimal gelesen werden können.

Rigging: 3D rigging is the process of creating a skeleton for a 3D model so it can move. Most commonly, characters are rigged before they are animated because if a character model doesn't have a rig, they can't be deformed and moved around.

S

Satzspiegel: Der Satzspiegel oder Schriftspiegel beschreibt in der Typografie die Nutzfläche einer Seite – also den Textbereich im Layout.

Schusterjunge: Der Begriff Schusterjunge meint eine einsam stehende Zeile eines Absatzes am Ende einer Spalte oder Seite.

SEO: Abkürzung für ‚Search Engine Optimization‘ und bedeutet ‚Suchmaschinen-Optimierung‘. Alle Maßnahmen, damit deine Webpräsenz in den Suchergebnissen möglichst weit vorne angezeigt wird, idealerweise auf Seite 1 der Suchergebnisse.

Serifenlose Schrift: Die seriflose Schrift („Sans Serif“) geht bis auf das 19. Jahrhundert zurück und wird auch „Grotesk“ genannt. Serifenlose Schriften haben sich erst seit Anfang des 20. Jahrhunderts in der Typografie etabliert. Zu den seriflosen Schriften zählen Klassiker wie Helvetica, Frutiger und Futura.

Serifen-Schrift: Unter Serifen-Schriften versteht man Schriften, die kleine Rundungen und Kehlungen am Übergang zum angrenzenden Strich aufweisen. Durch die Stärke und Form dieser Serifen lassen sich Schriften unterschiedlichen Klassen zuordnen.

Slogan: Ein Slogan ist ein einprägsamer Werbespruch mit treffender Werbebotschaft. Slogans dienen somit der Orientierung und Positionierung von Unternehmen, Produkten und Dienstleistungen.

Sound Design: is the process of recording, acquiring, manipulating, or generating audio elements. It is employed in a variety of disciplines including filmmaking, television production, theatre, sound recording and

reproduction, live performance, sound art, post-production, and video game software development.

Spaltenzwischenschlag: Auch Zwischenbeschlag; der Abstand zwischen zwei nebeneinander angeordneten Textspalten.

Spationieren: Auch Sperren; der Begriff leitet sich vom Spatium ab und bedeutet das Ausgleichen der Buchstabenabstände durch Hinzufügen von Spatien.

Spatium: Dünnes, nicht druckendes Metallstück aus dem Bleisatz. Mit einem Spatium wurden Zeilen oder Buchstabenabstände erhöht.

SSL-Verschlüsselung: „SSL“ (für ‚Secure Sockets Layer‘) ist ein Verschlüsselungsprotokoll zur sicheren Datenübertragung im Internet. Ob eine Website SSL hat erkennst du an dem kleinen grünen Sicherheitsschloss neben der Adresszeile oben im Browserfenster.

Startseite: Wird die erste Seite einer Webpräsenz genannt, meistens die ‚Home‘-Seite. Die Seite, von der aus die anderen Seiten einer Website besucht werden.

Styleguide: In einem Styleguide werden für die Gestaltung wichtigen Design-Elemente bildlich dargestellt. Die Richtlinien und Vorlagen dienen zudem der einheitlichen Umsetzung von Druckerzeugnissen oder Websites im Rahmen des Corporate Design. Styleguides gibt es in gedruckter sowie in digital Form – zum Beispiel als PDF-Datei.

Suchmaschine: Zum Beispiel Google, aber auch Ecosia, Duck Duck Go, Bing, Yahoo ... Damit werden die Inhalte des Internet durchsucht. Google ist in Österreich die meistgenutzte, mit über 90 % Marktanteil.

Suchmaschinen-Optimierung: Siehe SEO

T

Tablet: Zum Beispiel der iPad von Apple, im Gegensatz zu Handy oder Laptop. Mobiles Endgerät.

Template: Zu Deutsch: ‚Schablone‘. Eine Programmier oder Designvorlage für den Website-Bau. Es ist ein vorgefertigtes Layout, dass man mit Inhalt füllen kann. Der Vorteil ist, dass man nicht jedes Detail der Homepage selbst erstellen muss.

Texturing: Texturing in 3D animation is the process of dressing up 3D models with 2D pictures. Texture artists oversee giving 3D objects physical characteristics. The overall goal is to match the surface of the model to its concept art or real-world equivalent.

Thumbnail: Vorschaubild, Miniaturbild

Timeline: a graphical representation of a period of time, on which important events are marked.

Toter Kolumnentitel: Eine Zeile, die entweder nur die Pagina oder Pagina mit gleichbleibender Textzeile enthält. Der tote Kolumnentitel steht außerhalb des Satzspiegels.

Typografie: Mit Typografie wird das Design von Buchstaben, Schriften und Zeichen sowie deren Anwendung in Rahmen von Gestaltungen bei Druckerzeugnissen und digitalen Medien beschrieben. Zur Typografie zählen außerdem Detailbereiche wie Mikrotypografie und Makrotypografie. Die Kunst an der Arbeit eines Typografen besteht darin, die Gestaltungsmerkmale auf geeigneter, ansprechender oder künstlerischer Art und Weise miteinander in Einklang zu bringen. Unsere Links zu Typografie enthalten viele Quellen und Verweise zu Typoseiten und Schriftenanbietern.

U

UI: User Interface. Die Benutzerschnittstelle als Grenze zwischen Mensch und Technik. Zum Beispiel ein Touchscreen.

URL: ‚Uniform Ressource Locator‘. Im allgemeinen Sprachgebrauch wird damit die Internetadresse einer Website gemeint.

UV-Mapping: UV mapping is the 3D modeling process of projecting a 2D image onto a 3D model’s surface. The term ‐UV‐ refers to the bidimensional (2D) nature of the process: the letters ‐U‐ and ‐V‐ denote the axes of the 2D texture because ‐X‐, ‐Y‐ and ‐Z‐ are already used to denote the axes of the 3D model.

UX: ‚User Experience‘. Bedeutet (Be)Nutzererfahrung. Sie sollte möglichst gut sein, damit Seitenbesucher sich auf der Website gut zurecht finden, lange verweilen, alles sofort sehen, was sie brauchen und idealerweise dann auch tun, was man gerne hätte (zum Beispiel Kontakt aufnehmen). Ist das erfüllt, spricht man auch von hoher Benutzerfreundlichkeit oder guter Usability.

V

Versalien: Mit dem Begriff Versalien meint man in der heutigen Zeit meist Großbuchstaben. Eine Versalschrift besteht ausschließlich aus Großbuchstaben. Ein einzelner Großbuchstabe wird Majuskel genannt.

W

Webdesign: Laut Wikipedia ‚die visuelle, funktionale und strukturelle Gestaltung von Websites für das Internet.‘ Die technische Implementierung von Websites wird dagegen als Webentwicklung bezeichnet.

Webhosting: Host ist der ‚Gastgeber‘. Ist die Bereitstellung von Webspace und die Unterbringung von Websites auf einem Server.

Website: Auch Webauftritt, Webpräsenz, Internetauftritt oder –Präsenz genannt. Es gibt Unternehmens- und Privatwebsites. Websites sind über eine Domain erreichbar und können eine bis beliebig viele Seiten umfassen.

Webspace: Speicherplatz. Er wird von Internetdienstleistern zur Verfügung gestellt, um Websites zu speichern und zu veröffentlichen.

Wordpress: Eine freie Webanwendung zur Verwaltung der Inhalte einer Website. Es ist eine Plattform, auf der man ein Blog oder eine Website bauen kann.

Wort-/Bildmarke: Eine Bildmarke ist ein grafisches Element, wie es zum Beispiel in einem Logo vorkommt. Eine Wort-/Bildmarke ist eine Kombination aus Text und Grafik. Der Begriff wird auch verwendet, wenn es um markenrechtliche Aspekte von Marken geht. Wort-/Bildmarken werden im Rahmen des Corporate Design zum Beispiel in Styleguides definiert.

X

X-Höhe: Der Begriff X-Höhe kommt aus der Typografie und dient dazu, die Größe einer Schrift zu definieren. Die X-Höhe wird auch Mittellänge genannt, da sie für den mittleren Bereich eines Buchstabens steht.

Z

Zeilenabstand: Der Zeilenabstand beschreibt den Abstand zwischen den Zeilen eines Textes. Er wird auch als Zeilenhöhe bezeichnet.

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Abkürzungsverzeichnis

Abb.	=	Abbildung
bzw.	=	beziehungsweise
ca.	=	circa, zirka
cm	=	Zentimeter
DTP	=	Desktop-Publishing
etc.	=	und die Übrigen
inkl.	=	inklusive
Jh.	=	Jahrhundert
mm	=	Millimeter
pt	=	Punkt
S	=	Seite
usw.	=	und so weiter
vgl.	=	Vergleiche
z.B.	=	zum Beispiel
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