A Triple-Layered Business Model Framework for Social Media

Otto Petrovic
Department for Operations and Information Systems, Karl-Franzens-University of Graz, Austria
otto.petrovic@uni-graz.at

Abstract: Social media are increasingly based on commercial business models. Scientific literature and articles in the mass media have been available for some time discussing individual aspects of economic business models and their environmental and social impacts. Often these statements are contradictory, biased towards a certain aspect, and without context by comparison with substitute goods that cover similar needs. This paper aims to develop a framework to understand the business models of social media, including their social and environmental impact, and to identify starting points for innovations. In addition to the economic layer of the business model, the environmental and social layers are also discussed. The latter two are still underrepresented in the domain of business model analysis. First, the elements of the economic layer of social media business models are defined. Then it is shown how the single economic view can be expanded to include the environmental and social impact. Finally, we argue why the different socioeconomic backgrounds of involved stakeholders should be considered to avoid a biased, ethnocentric view of business models.

Keywords: Social Media, Business Model, Triple-Layered, Sustainability, Environmental Impact, Social Impact

1. Research question and methodology used

The research question is to develop a framework to analyze the business models of social media on economic, social, and environmental layers. A special focus is given to the interdependencies of these three layers. The framework is intended to help explain the contradictory findings in the scientific literature and statements in the mass media as well as to provide starting points for innovations. From a methodological point of view, a review of theories in the three levels is carried out. Theories were selected that have both high explanatory value for a single level and are also interconnectable. Then, the first conceptual steps are taken toward a synthesized business model framework for social media.

2. Indicators for the economic, environmental, and social layer of business models

While the economic layers of business models in general and for social media in particular have been discussed for some time, there are still few consistent findings about their impacts on environmental and social layers. This is primarily due to many possible indicators. For the social layer, often qualitative indicators based on subjective assessments must be used. In the economic and environmental layers, mainly quantitative indicators can be used, which are based on monetary and physical variables. In addition, there are pseudo-quantitative indicators describing quantitatively the response behavior to surveys, which is per se biased.

Furthermore, absolute indicators are often used, which are neither placed in the context of development over time nor with substitute goods compared. An example is when YouTube's power consumption is estimated to be higher than Spain's. Since social media meets different needs than a nation and address a different value proposition, such a comparison seems meaningless. Relative indicators relate, for example, to the development of YouTube's electricity consumption per hour streamed or compare it with traditional television, whereby the entire life cycle from production to use is considered. For a comprehensive analysis of the indicators used in all three areas of a business model, see (Joung, Carrell, Sarkar, *et al.* 2013).

3. The economic layer of the framework

The *economic layer* creates monetary and non-monetary values for social media and its stakeholders within the economic domain and mostly impacts the environmental and social domain. The Business Model Canvas by Osterwalder is used as a basis in the following section (Osterwalder 2013), (Osterwalder, Pigneur & Clark 2010). Single elements are discussed in more detail using the YouTube example. For a detailed analysis of the economic aspects of YouTube's business model, see (Pereira 2022) and (Burgess & Green 2018).

3.1 Value proposition and products

The *value proposition* defines which *monetary and non-monetary values* the social media generates for its stakeholders through its products and services. It determines which stakeholder *problems will be solved and which needs* will be satisfied. The stakeholders can be customers, suppliers, value-added partners, or uninvolved third parties, who are not directly integrated into the business model. An example of uninvolved third parties

are external effects on users of IT infrastructure in form of lower available bandwidth caused by video-based social media providers of other users.

Social media have three central value propositions:

1. For viewers/readers: discovering and watching videos and comments at a self-determined time on numerous different devices, often without having to pay for it with money.
2. For content creators: displaying content to make money, for example, as a YouTuber through paid advertising. The opportunity to receive recognition from others and to help others is also an important value proposition of displaying content.
3. For advertisers: access to a specific target group.

These value propositions are provided by products and services in the form of content, channel subscription, sharing functionalities, and different advertising formats.

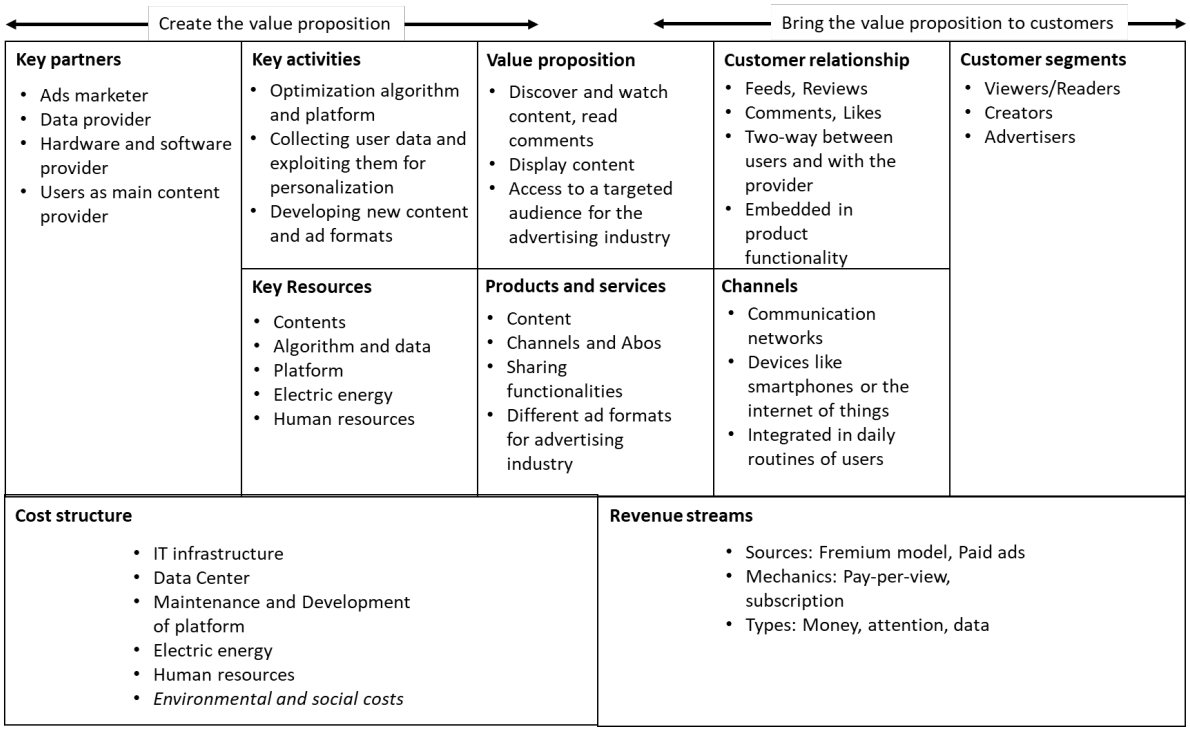

Figure 1: Economic layer of the framework

The value proposition is an abstract promise of value that can be fulfilled with *different products and services.* For example, social media can fulfill the value proposition 'access to a specific target group for the advertising industry' through banner advertising or through forms of advertising that are closely linked in real time to current user behavior, like Google Ads does. There is a high potential for innovation in changing the product or service to deliver an *established value proposition*. Google's success is largely due to providing an established value proposition for the advertising market by utilizing the special characteristics of the digital medium with the innovative Google Ads service. The competitors, however, transferred only the traditional product to the digital medium in the form of banner advertising. On the other hand, the same product and service can provide *different value propositions*. The product YouTube shorts can fulfill both the value proposition 'self-expression' through the uploaded 15-second video and 'information for others' through a short video on the current political unrest in the home country. Therefore, the distinction between value proposition and products and services is of particular importance for understanding the business models of social media.

As well the same product can lead to different value propositions, depending on the respective *sociocultural background* of the stakeholder. The value proposition 'social responsibility' but also 'social surveillance' can be ascribed to the products and services of Chinese WeChat. Regarding YouTube's channels, it is noteworthy that the two channels with the most subscribers use Hindi as their language and not English. This aspect of the dependence of the value proposition on the sociocultural background, which is particularly important and is not receiving much attention in the analysis of business models, will be discussed in section 6 of this paper.

3.2 Customer segments, relationship, and channels

Customer segments determine *for whom* the value proposition is provided. Social media tend to have three basic customer segments: viewers/readers, creators, and advertisers. Like traditional media, they serve a dual market: the viewer/reader market and the advertising market. In contrast to traditional media, viewers/readers and content creators networked directly through the digital platform of social media and are often identical. With user-generated content as a central element of social media, customers are becoming the most important suppliers. In the YouTube example, user-generated content includes videos as well as comments and ratings. Furthermore, frequently viewed and shared videos are placed higher in the display order and viewed even more frequently as a result. Thus, customers do not only create new content but have also a direct influence on the perceived value of the content of others by generating positive network effects based on their behavior.

The form of the *customer relationship* determines how the social medium *acquires and retains customers and further expands its customer base.* It also determines how the social medium *communicates with its customers* and transfers the value specified in the value proposition. Typically, social media communication channels are bidirectional and closely linked. Two-way communication makes it possible to substitute activities like market research based on surveys with analyzing users' communication content which discloses preferences when using product functionalities. An example are search functionalities on YouTube. By entering the search term, a personal interest is disclosed. This allows not only a highly personalized product offer in real-time but also an advertising message that is offered without a time delay and is highly aligned with the interests of the user when the advertising message is displayed. Upstream market research is no longer necessary.

The customer relationship of social media is characterized by feeds, reviews, comments, and various community functions. The functions of YouTube Studio include control of the relationship between the creator and the viewer, for example, by selecting whether a video is visible to all or only to selected target groups. On the other hand, the YouTube Studio also covers the relationship between YouTube and its customers, for example by the timing of the publication of a video on the platform. Another special feature of social media compared to traditional media is that customer relationships are not only carried out by one department in the company, often essentially detached from the product functionality. Social media widely embed customer relationships in product functionalities. For example, lock-in effects result from the high level of personalization of the content, and data on customer behavior is obtained from the search function.

Channels include the technical channels to bring the products to the customer segments and thereby generate the value proposition. In the case of social media, these are transmission channels such as cellular networks, landline connections, or near-field communication protocols, as well as different user devices. These include smartphones, personal computers, smartwatches, and increasingly everyday things, the Internet of Things (Petrovic 2017). One goal of social media channels is to be integrated as closely as possible into daily routines of their customers to increase the frequency of use.

3.3 Key activities, key resources, and key partners

The *key activities* include all activities that are necessary to *provide the value proposition and to develop all other elements of the business model.* For social media, these are in particular the optimization of the algorithms used to display the content and different forms of advertising, the further development of the platform, and the development of new formats for content and ads. Of particular importance is to collect data on the platform about customer behavior to personalize content and ads.

The *key resources* include those tangible and intangible resources that are necessary to carry out the key activities. In the case of social media, this is content in various video and text formats enriched with user comments. A special characteristic of social media is that the customer is also the most important supplier since user-generated content is the most important key resource. Another key resource is data on customer behavior and algorithms to select, combine and rank content and ads in a customer-specific manner. All technical resources for providing the key activities are bundled in the platform. Thus, social media is an ideal type of platform economy (Parker, Van Alstyne & Choudary 2016). Recently, awareness has increased that electric energy is an important resource too that can become scarce. Due to the severe labor shortage in the IT sector, the ability to attract and retain qualified employees is also a key resource.

Key partners enable social media to access customer groups, know-how, and resources that are of great importance for the business model. As they are difficult to replace, they differ from suppliers. Since their services cannot be bought on the market at short notice and are therefore not easily substitutable, close partnerships

are established with key partners and both business models are connected. For social media, such key partners are often ad marketers, data providers, hardware and software suppliers, and users as main content providers. In the YouTube example, the owner Google takes over many of these functions.

3.4 Cost structure

The cost structure includes all costs for the other elements of the business model. For social media, these are in particular costs for the procurement, operation, maintenance, and development of the IT infrastructure, the data center and the platform, electric energy, and human resources costs.

In traditional business model analysis, usually only monetary costs for the company are considered. Also, external effects are not taken into account, i.e. monetary or non-monetary costs that are borne by others, often uninvolved stakeholders. These costs are discussed mainly in the section on the environmental and social layers of business models.

3.5 Revenue streams

In the domain of revenue streams of the social media business model, the focus is on *sources, mechanics, and types.* To determine *revenue sources,* the social medium examines which value propositions and products customers are willing to pay for. The widespread freemium model offers customers free use of the basic product, while premium content and functions as well as ad-free access are subject to a fee. The YouTube example implements the freemium model using YouTube Premium. The largest source of income for social media is paid ads from the advertising industry.

Revenue mechanics can relate to individual service units (pay-per-view) or a subscription period. Social media mostly rely on pay-per-view mechanisms for the advertising market, billing is based on the frequency with which the advertising message is displayed. Freemium models for users, on the other hand, are usually based on subscriptions for a certain period. Pricing can be static or dynamic, depending on supply and demand.

Revenue types can be monetary or non-monetary. In social media, the user market very often uses non-monetary sources of revenue. On the one hand, these include 'attention', which increases the value of the social medium for the advertising market and leads to monetary income there. Collected customer data can also be monetized when selling the company due to an increased company value. While te non-monetary revenue stream of 'attention' has been adopted by traditional media for long time, payment through the disclosure of usage behavior data is an additional revenue stream from social media.

4. Environmental layer of the framework

As discussed above, social media have numerous external effects, particularly through their environmental and social impacts. A purely economic analysis of their business models ignores these effects. Thus, we use the triple-layered business model canvas (Joyce and Paquin, 2016) in a modified form to discuss these two dimensions of social media. For a systematic analysis of indicators in the particular sub-areas of the framework, see (Joung et al., 2013).

The environmental layer is used to analyze which negative and positive effects a company's business model has on the environment. Whether an environmental effect is considered positive or negative, a comparison should be made with an alternative product or service that meets the same customer needs. One example is the replacement of combustion with electric engines. In any case, however, a variant should also be considered where there is a change in the behavior and needs of consumers, such as the gradual replacement of automobile use by public transport and bicycles. It is probably pointless to compare the power consumption of YouTube with that of nations. YouTube's value proposition is completely different from that of a nation. YouTube and a nation are not substituting goods and therefore a comparison is not appropriate.

Reports about the negative environmental impact of social media are increasing, especially in popular science literature. In the scientific literature, statements about the environmental impact of social media are very inhomogeneous (Beuscart, Coavoux & Garrocq 2022). One reason is that the comparison with substitute goods, such as traditional media, is missing. Additionally, often only single indicators of the product life cycle are shown, which does not allow valid statements to be made about the overall environmental impact of social media. In this section we will discuss, based on the Life Cycle Assessment (Joyce and Paquin, 2016), a framework for the environmental layer that takes the entire life cycle into account and enables comparison with substitute goods.

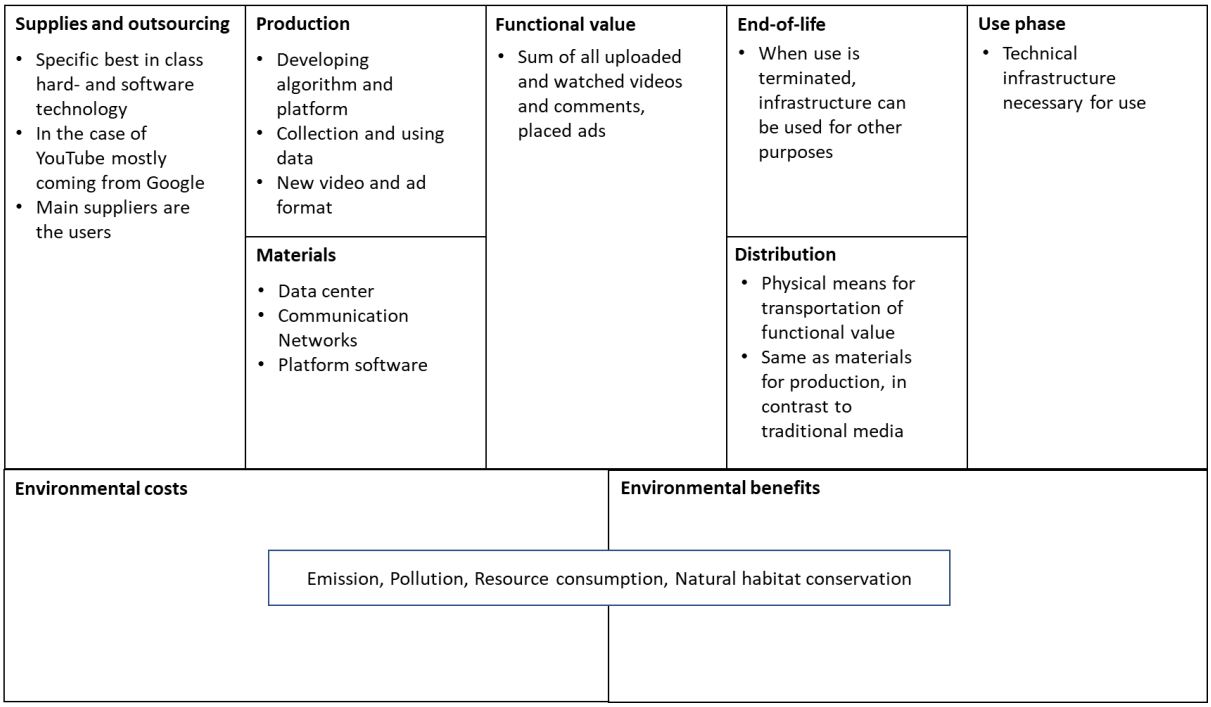

Figure 2: Environmental layer of the framework

4.1 Functional value

The functional value represents the center of the environmental layer. It covers the entire usage process by its users within a certain period. The functional value of YouTube is the sum of all uploaded and watched videos and comments, as well as placed ads within a certain period. This functional value is made possible by the mediatization effect of social media. Due to digitization, atoms are replaced by bits, making tangible products intangible. An example of this is replacing a printed daily newspaper with content from different authors on Twitter.

4.2 Production, materials, supplies, and outsourcing

Production corresponds to the key activities in the economic layer and includes the environmental impact of business processes to provide products and services. In the case of YouTube, this is, for example, the operation of servers. *Materials* correspond to the key resources of the economic layer and include means of production such as data centers, communication networks, and platform software. *Supplies and outsourcing* include all other materials and activities necessary to create the functional value but are not part of the company's core competencies.

4.3 Use phase, end of life, distribution

The *use phase* describes the environmental impact of customers' use of the functional values. A special characteristic of digital compared to printed media is the need for IT infrastructure for use, which has a significant environmental impact. *End-of-life* environmental impacts occur when the customer decides to stop using the product. In the case of a printed newspaper, it is the disposal of the used paper. With social media, there are usually no effects in this domain since the customer's IT infrastructure is used for other purposes. *Distribution* describes the environmental impact of all physical facilities used to bring the functional value to the customer segments. In the case of social media, these often overlap with the materials for providing the functional value: IT infrastructure and networks. There is a particularly big difference between social media and, for example, a printed newspaper. The latter requires printing machines for production and human deliverers with their vehicles for distribution.

4.4 Environmental costs and benefits

The environmental impacts of the functional values lead to environmental costs and benefits, in the form of mostly quantitative indicators for emission, pollution, resource consumption, and natural habitat conservation

(Joung, Carrell, Sarkar, *et al.* 2013). Those costs and benefits can be seen as absolutely concerning the environment or relatively compared with a substitute product. In absolute terms, a reduction in costs is not equated with benefits. For example, YouTube could reduce its environmental costs if the energy required for production comes from renewable sources. But this is a decrease in environmental costs and not a benefit. An environmental benefit is, for example, the reduction of environmental pollution by linking to an e-commerce site enabling a more efficient supply chain through the disintermediation of brick-and-mortar shops. Relative costs and benefits can be identified by comparing a certain social media with a substitute good, e.g., YouTube with traditional TV or movies shown in a cinema.

5. The social layer of the framework

5.1 Social value

The social layer of business models is structured related to stakeholders. Stakeholders are those individuals or organizations that influence social media activities or are influenced by them. Companies that aim for sustainable development try to generate not only economic but also social value for their stakeholders. The focus is on increasing the well-being of the individual stakeholders. Well-being can be described as judging life positively and feeling good. To distinguish two fundamentally different aspects, retrospective life satisfaction and introspective happiness, see (Kahneman 2000), (Kahneman and Riis 2005). In the following, a structure for the social layer that is suitable for the goals of this paper is presented based on (Joyce & Paquin 2016).

5.2 End-user, Societal culture, Scale of outreach

End-users of social media are the consumers of the content, who are often also producers themselves. YouTubers, on the other hand, produce content and are customers and suppliers of YouTube, but not end users. The main social values for end-users are the opportunity to create their own online identities, to communicate with others and to build social networks, to obtain authentic information directly from the source without intermediaries like traditional media, and to be entertained.

Societal culture includes the impact of social media on society as a whole. This includes the freedom to access information from different sources without restrictions and to generate and forward information to as many others as you like. The impact on education is manifold. For example, in addition to traditional teaching authorities such as teachers, parents, and experts, constructivist learning based on a variety of sources is increasingly used (Petrovic 2019). Political participation is influenced by the fact that social media supplementing and replacing traditional media more and more as the fourth force in a democratic state. The medical and health system is influenced by more information on health topics and social media offer new opportunities in the care sector. Within the economic layer, successful business models increase the GNP and thus the material prosperity of society.

The impact of social media on societal culture can have both positive and negative effects depending on the developmental state of media literacy of a certain user group. High media literacy is necessary to take advantage of the possible positive effects and mitigate the negative ones. More information can lead to more disinformation through more fake news, but also to more opportunities to identify fake news, a problem we have known for thousands of years and go directly to authentic information. Media literacy includes a) knowledge about media, b) the ability to use media critically, c) the ability to create your own content, and d) the ability to critically analyze one's own media usage (Kreutzer 2022), (Petrovic 2022).

The scale of outreach encompasses the breadth and depth of social media's relationships with its stakeholders. The breadth of relationships includes the number of end users, their demographic diversity, and the number of countries and cultures in which a certain social media is used. Depth includes the intensity of use by the end user, the integration in their daily routines, and the coverage of impacts on End-user shown in section 5.2. YouTube has an extraordinarily high scale of outreach. It has 2.5 billion monthly end-users worldwide, of which 467 million are in India, 247 million in the USA, 106 million in Russia, and 62 million in Vietnam. Globally, 7.5% of the 18-24 year-olds and 5% of over 65 year-olds use YouTube (values for April 2022). In 2021, YouTube users in South Korea spent 39.9 hours a month on the mobile app, in India 29.6 hours, in Russia 27.1 hours, and in the United States 22.2 hours (Anon 2022).

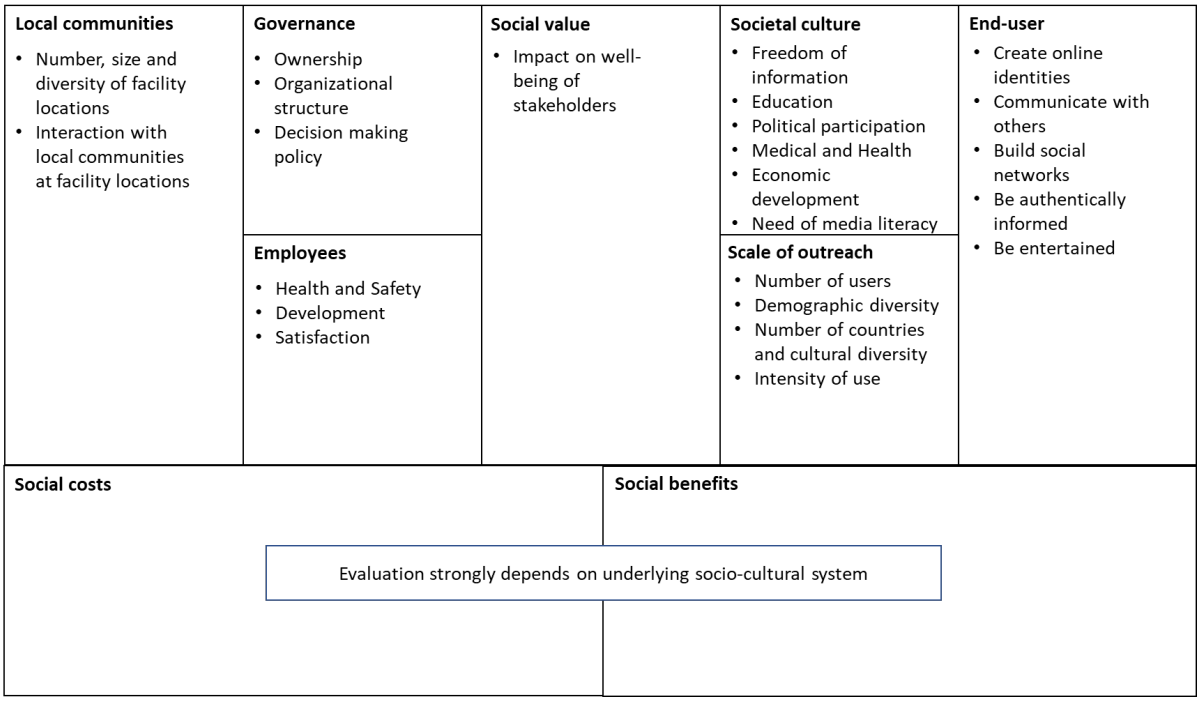

Figure 3: Social layer of the framework

5.3 Governance, employees, local communities

Governance includes the ownership structure, the organizational structure, and the decision-making processes of the respective social media. It is interesting that the leading social media sites were founded by single individuals and are often run autocratically, while those that emerged from established large corporations are less successful. The research on disruptive innovations (Yu and Hang 2010) provides explanations for this.

The social value for *employees* includes company measures for the health and safety of employees, their development, and a high level of satisfaction with their work. As already mentioned within the economic layer in the domain of critical resources, a key goal of social media companies is to hire and retain qualified employees.

Social media firms often have locations in different countries and continents. This is intended to facilitate access to qualified employees and to generate cost advantages for critical resources such as electrical energy. The understanding of sociocultural peculiarities should also be expanded to adjust value proposition and social value accordingly. For this, close interaction with local communities is necessary. This can include sourcing of non-critical resources from local suppliers, such as employee meals, or sponsoring local events. Google as the parent company of YouTube has 32 offices in North America, six in Latin America, 25 in Europe, 20 in Asia Pacific, and five in Africa and the Middle East.

5.4 Social costs and benefits

While in the economic and environmental layer, primarily monetary and physical indicators are used, social impacts are more difficult to measure due to their mostly qualitative character. Social costs are based on the subjective assessment by members of a specific community with their own sociocultural values. Thus, their judgment as costs or benefits depends on the underlying sociocultural system of certain stakeholders. For example, the sociocultural value 'Freedom of information' can be judged as a welcome social benefit in a democratic form of society, in a paternalistic-authoritarian, however, as undesirable social costs. This aspect is dealt with in the next chapter.

6. The problem of ethnocentric analysis of social media

'Price massacre in e-learning stocks - China plans deathblow' The shareholder, July 23, 2021

'Am I a teacher to the Chinese...it is presumptuous to teach other peoples how to live' Former Chancellor of Germany Helmut Schmidt, ARD special broadcast, November 10, 2015

Among the 12 largest social media platforms in the world in terms of user numbers, there are seven that originated in China. Weixin/WeChat, TikTok, Douyin, QQ, Sina Weibo, and Kuaishou together have 4.5 billion users (Statista 2022, including double counts). The country with the most YouTube users is India, with almost twice as many as the United States (Statista 2022). Understanding the business models of social media, therefore, requires a truly global perspective. This should be understood as the best possible abandon of the ethnocentric glasses that are shaped by the societal value-norm system of the individual researcher, but which does not have universal validity. See also the work of the British evolutionary biologist Richard Dawkins, who explains scientifically why every person wears a veil with a narrow slit that is determined by their value-norm system. It is the task of science to widen this slit (Dawkins 2008).

The distinction between products and services on the one hand and value proposition, on the other hand, is particularly important for understanding the value proposition in the economic layer, as well as all domains in the social layer. While products and services are observable and measurable, the value they generate depends always on stakeholders' socioeconomic backgrounds. However, researchers and mass media often judge products and services based on their own socioeconomic backgrounds, and an ethnocentric analysis takes place.

The WeChat platform operated by the Chinese company Tencent is often judged by western commentators as a 'social surveillance tool of the state'. With a different socioeconomic background, it can be assessed a 'Tool for increasing social responsibility'. One's own culturally determined values and norms lead to the risk of stereotypical assessments, preventing an understanding of WeChat's value proposition for Chinese stakeholders.

Customers' perceptions and behavior shape all business models, also those of social media. Thus, it is particularly noteworthy that most of the behavioral science research relates to people who come from WEIRD societies (Western, Educated, Industrialized, Rich, and Democratic). (Henrich et al. 2010) show in their analysis of the leading journals in psychology, that 96% of the subjects come from countries comprising 12% of the world's population Due to their special characteristics, they belong to that group that allows the least generalizable conclusions.

Another example of the limiting WEIRD perspective is the Chinese government's recent intervention in one of the world's largest information markets, the education market. Western commentators mostly see this critically as an authoritarian economic intervention by the state into the business models of companies. The Chinese government argues that the de-commercialization of the education market will increase equal opportunities and reduce excessive pressure to perform. At the same time, the view of the USA is shaped by the 'rags-to-riches' myth based on meritocratic ethics. In contrast, (Sandel, 2020) shows that there are more students at Harvard, Princeton, and other Ivy League universities from families in the top one percent than from the entire bottom half of the income distribution of the US population.

7. Conclusion and further research

The current work on social media has a strong focus on single aspects of the underlying business model. While the economic aspects can be based on established elements and indicators, the analyses of the environmental and social impacts are still very inconsistent. For decades, business model analyses focused on economic aspects and were carried out in the disciplines of business and economics. Largely independent of this, representatives of environmental science developed indicator sets for the environmental impact, and media scientists, psychologists, and sociologists are working on the social impact. In addition, there is a high degree of ethnocentric perspective, without considering the different sociocultural backgrounds of stakeholders.

The presented framework for analyzing business models of social media supports an integrated view of all three layers. Thus, it enables coherence within a layer, but also between the economic, environmental, and social layers. The widely isolated work on a company's environmental and social issues within its CSR department should be integrated into all departments. That leads to innovation potentials, with a strong impact on the economic layer that goes far beyond a 'voluntary assumption of environmental and social responsibility'. Business models are strongly changing because of the increasing mandatory internalization of external effects. As a result of internalization, companies must bear an increased share of the environmental and social costs they cause.

The comparative analysis of business models of social media on all three layers with substitute goods, especially traditional media, is an essential future research question. Furthermore, a major aim should be to increase insight into different sociocultural backgrounds to understand the value propositions and social values of

business models in other societies. It seems necessary to discard the ethnocentric glasses as far as possible and to be cautious with normative statements. Even if it is particularly time-consuming and tedious for the researcher, this requires more participatory fieldwork in different cultures.

References

Anon (2022) *YouTube Dossier*. [Online]. 2022. Statista. Available at: https://www.statista.com/study/15475/youtube-statista-dossier/ (Accessed: 6 December 2022).

Beuscart, J.-S., Coavoux, S. and Garrocq, J.-B. (2022) Listening to music videos on YouTube. Digital consumption practices and the environmental impact of streaming. *Journal of Consumer Culture*. [Online] 146954052211332. Available at: doi:10.1177/14695405221133266.

Burgess, J. and Green, J. (2018) *Youtube: online video and participatory culture*. Digital media and society. Second edition. Cambridge, UK ; Medford, MA, Polity Press.

Dawkins, R. (2008) *The God delusion*. 1st Mariner Books ed. Boston, Houghton Mifflin Co.

Joung, C.B., Carrell, J., Sarkar, P. and Feng, S.C. (2013) Categorization of indicators for sustainable manufacturing. *Ecological Indicators*. [Online] 24148–157. Available at: doi:10.1016/j.ecolind.2012.05.030.

Joyce, A. and Paquin, R.L. (2016) The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*. [Online] 1351474–1486. Available at: doi:10.1016/j.jclepro.2016.06.067.

Kahneman, D. (2000) Experienced Utility and Objective Happiness: A Moment-Based Approach. In: Daniel Kahneman and Amos Tversky (eds.). *Choices, Values, and Frames*. 1st edition. [Online]. Cambridge University Press. pp. 673–692. Available at: doi:10.1017/CBO9780511803475.038 (Accessed: 6 December 2022).

Kahneman, D. and Riis, J. (2005) Living, and thinking about it: two perspectives on life. In: Felicia A. Huppert, Nick Baylis, and Barry Keverne (eds.). *The Science of Well-Being*. [Online]. Oxford University Press. pp. 284–305. Available at: doi:10.1093/acprof:oso/9780198567523.003.0011 (Accessed: 6 December 2022).

Kreutzer, R. (2022) *Definition: Medienkompetenz*. [Online]. 2022. Available at: https://wirtschaftslexikon.gabler.de/definition/medienkompetenz-122191 (Accessed: 30 August 2022).

Osterwalder, A. (2013) A Better Way to Think About Your Business Model *Harvard Business Review*. [Online]. Available at: https://hbr.org/2013/05/a-better-way-to-think-about-yo (Accessed: 12 August 2022).

Osterwalder, A., Pigneur, Y. and Clark, T. (2010) *Business model generation: a handbook for visionaries, game changers, and challengers*. Hoboken, NJ, Wiley.

Parker, G., Van Alstyne, M. and Choudary, S.P. (2016) *Platform revolution: how networked markets are transforming the economy and how to make them work for you*. First Edition. New York, W. W. NORTON & COMPANY.

Pereira, D. (2022) *Youtube Business Model* [Online]. Available at: https://businessmodelanalyst.com/youtube-business-model/ (Accessed: 1 December 2022).

Petrovic, O. (2022) Die Zukunft der „Wiener Zeitung“ – geht es nicht um mehr? *Wiener Zeitung*. 23913.

Petrovic, O. (2019) Digital Media and Informal Learning: Alteration Mechanism and Captured Episodes. In: Bruce M. McLaren, Rob Reilly, Susan Zvacek, and James Uhomoibhi (eds.). *Computer Supported Education*. Communications in Computer and Information Science. [Online]. Cham, Springer International Publishing. pp. 433–469. Available at: doi:10.1007/978-3-030-21151-6_21 (Accessed: 24 September 2021).

Petrovic, O. (2017) Wie das Internet der Dinge die Kommunikation von Unternehmen verändert. *Wirtschaftsinformatik & Management*. [Online] 9 (4), 68–73. Available at: doi:10.1007/s35764-017-0078-2.

Yu, D. and Hang, C.C. (2010) A Reflective Review of Disruptive Innovation Theory: A Reflective Review of Disruptive Innovation Theory. *International Journal of Management Reviews*. [Online] 12 (4), 435–452. Available at: doi:10.1111/j.1468-2370.2009.00272.x.