

# Capitalizing on Social Media Analysis – Insights from an Online Review on Business Models

*Completed Research Paper*

**Malsbender, Andrea**

University of Muenster – ERCIS  
andrea.malsbender@ercis.uni-muenster.de

**Voigt, Matthias**

University of Muenster – ERCIS  
matthias.voigt@ercis.uni-muenster.de

**Beverungen, Daniel**

University of Muenster – ERCIS  
daniel.beverungen@ercis.uni-muenster.de

**Becker, Jörg**

University of Muenster – ERCIS  
joerg.becker@ercis.uni-muenster.de

## ABSTRACT

With the rise and proliferation of social media on the Internet, social media analysis is emerging as a new business model for software companies. The purpose of this paper is to provide a systematic overview of different types of such business models. After developing a coding schema based on the business model, we conducted an in-depth analysis of 16 websites of companies that actively promote social media analysis to their clients. We identified three archetypes of business models in this area: specialist content analysts, social data and application integrator, and social media service provider. Future research can build on these insights in order to focus on designing or revising methods for social media analysis to realize either of these business models. Software companies can benefit from the results by positioning their own business models in this emerging market more thoughtfully.

## Keywords

Social Media Analysis, Business Model, Coding Scheme, Archetypes.

## INTRODUCTION

In the social web, abundant user-generated content is created and made available online. The online social network Facebook claims to involve more than one billion active users, 82% of persons which access the network from outside the U.S. and Canada, and some 618 million users accesses the web site every day (“Facebook,” 2013). The online photo sharing platform Flickr involves about 70 million photographers, organized in more than 1.5 million active user groups (“Flickr,” 2013). The list of illustrative examples could easily be continued, with social media data just being the tip of the iceberg of a profound trend to gather and analyze ‘big data’ (Mattmann, 2013).

This trend is powerful enough to change the organizational environment in which companies operate to create value for their clients, with equal importance to consumers, businesses, or public administrations. Changes in the organizational environment demand a process of strategic modernization and at the same time they provide potential for changing companies’ business models to commercialize innovative ideas (Zott, Amit, and Massa, 2011).

The business value of social media analysis must be validated thoughtfully, since it can be limited by serious bias as traced for the micro-blogging system Twitter for the case of the 2008 U.S. presidential election (Gayo-Avello, 2011). Nevertheless, it has been found to hold great potential for various areas of application, e.g. an analysis of sentiments for identifying brand perception (Melville, Gryc, and Lawrence, 2009).

In the IS discipline, most of previous research on social media has focused on its use by individuals. In particular, investigating the rationale behind content sharing in social media and discovering means for platform owners to facilitate content sharing on their platforms have been researched. Wasko and Faraj (2005) suggest that the motivation for sharing knowledge in professional networks of practice is based on the expectation that this would increase their professional reputation. Based on an analysis of user’s content contribution decisions on YouTube, Tang et al. (2012) conclude that the main drivers are the contributors’ wish of exposure and reputation, supplemented by revenue sharing as an extra incentive. In these dimensions, expected future benefits and immediate rewards supplement each other. Focusing on the perspective of social network analytics, Bonchi et al. (2011, p. 1) argue that “While there is a large body of research on different problems and methods for social network mining, there is a gap between the techniques developed by the research community and their

development in real-world applications”. They mourn that most research in social network analysis is focused on solving theoretical or general problems, but lacks a clear contribution for establishing social network analysis as a business model. Based on reviewing techniques for social media analysis, they identify conceivable business applications. Our paper supports the validity of this claim.

We argue that many companies have emerged recently in order to capitalize on techniques of social media analysis by establishing new business models. The research objective of this study is to identify the properties of these new business models. The underlying research question is the following:

RQ: How can we holistically and meaningfully categorize business models in the rapidly emerging market of social media analysis and engagement?

We reach this aim by conducting an analysis of 16 websites of companies that have transformed social media analysis techniques into a business model. We analyze the business models with a coding schema that is based on literature on business model frameworks and social media analysis. Our findings are systematized in a morphological box with which current social media analysis business models can be categorized. Subsequently, we offer a systematization of three business model archetypes that can be frequently encountered in this market.

The remainder of this paper is organized as follows. In Section 2, previous literature is reviewed from two angles, namely, social media analysis and business model development. In Section 3, the research method is reported. In Section 4, we offer selected results from applying the coding schema. In Section 5, these insights are reflected in order to identify patterns of business models for social media analysis. Section 6 is a summary and outlook section.

## RELATED WORK

### *Social Media Analysis*

Online social network sites have revealed a high potential for research on social media, as well as its usage and its implications in the information systems discipline (Whelan, Golden, and Donnellan, 2011). Research questions related to the application of social network sites in organizations cover a variety of fields, including online team performance and individual behavior in social networks (i.e. (Ganley and Lampe, 2009; Roberts, Hann, and Slaughter, 2006)).

Several analysis methods and techniques have been developed to make sense of the data individuals generate on social media platforms – subsumed by the term social media analysis. The most popular techniques are social network analysis and sentiment analysis. First, *social network analysis (SNA)* can be used for analyzing human relations and social structures. Especially, the kind of network (private or professional), the relationships of individuals and groups in the social network (mathematically and visually represented by nodes and ties), and, the activities between people and objects (e.g., influencers, hubs) are revealed (Cross and Parker, 2004). Second, *sentiment analysis*, as another technique for social media analysis, is subject to many disciplines (Bollen, Pepe, and Mao, 2011; Hu, Tang, Tang, and Liu, 2013; Kamvar and Harris, 2011). The idea of the method is to build on a sophisticated feature space and to represent the sentiment status of a text. Therefore, it is usable in different types of texts (e.g. newspapers (Pang, Lee, and Vaithyanathan, 2002) or micro blogging in online social media (Hu et al., 2013)).

Social media analysis is an emerging research stream that stands in the tradition of *text mining* approaches. Systematic functional linguistic theory (Halliday, 2004) outlines three meta-functions of language. First, the ideational meta-function outlines that language consists of ideas that are communicated to others. Second, the textual meta-function systematizes the syntax of language by outlining that language is organized, so that ideas can be conveyed to others in an interpretable format. Third, the interpretational meta-function conceptualizes language as a medium of exchange for ideas between people.

### *Business Models*

Business models have been established as a mean to generate or innovate business ideas for a long time (Magretta, 2002). To stay competitive, continuous development and redesign are recognized as important to organizations (Menor, Tatikonda, and Sampson, 2002). Although the term “business model” is used commonly in literature, definitions vary significantly and no consensus on the constituting elements of these models exists (Al-Debei and Avison, 2010). Two main views on business models can be identified: On the one hand, they are seen as graphical representations in terms of conceptual tools which illustrate the business logic of a company (Osterwalder and Pigneur, 2009). According to Gordijn et al. (2000) business models visualize how a network of actors creates, exchanges and consumes value and is “an expression of thoughts and conceptions regarding the business and its environment.” (Willars, 1999, p. 306). On the other hand, business models are used to visualize general ideas for value creation, i.e., how an organization is doing business (Galper, 2001) instead of relating to potential strategies or ways to achieve competitive advantage. Hence, a business model refers to the way an

organization organizes its inputs, converts these into valuable outputs, and gets customers to pay for these outputs (McGrath and MacMillan, 2000). For the purpose of this paper, we stick to the second conceptualization and define a business model as a description on how an organization is doing business. Furthermore, a business model comprises key elements, business concepts and values for both, the customer (Timmers, 1998) and the company (Betz, 2002). Regarding the constituting elements of a business model we coincide with the taxonomy suggested by Al-Debei and Avison (2010) who divide business models into the high level categories *value proposition*, *value architecture*, *value network*, and *value finance*. With respect to this taxonomy, relevant categories of a business model can be uncovered as well as a comprehensive analysis of the data presented on the websites can be conducted.

## RESEARCH METHOD

### *Selection of Data Sample*

There are two approaches for defining the dataset of relevant organizations for website analysis techniques. One way is to identify web addresses of suitable organizations in a business directory. This approach has been utilized frequently in the academic literature (Auger and Gallagher, 1997). However, at this time no directory listings are available for websites of companies analyzing social media. Therefore, we applied the approach of sampling by utilizing a search engine (Google in our case) (Weare and Lin, 2000). We used the following keywords to search for suitable websites: ‘social media analysis’, ‘social media organization’, ‘social network analysis’, ‘social media engagement’. After extracting organizations solely offering services in this field, we further excluded websites without tool/method presentation. Hence, we concentrated on tool/method representations via demo version or clear descriptions. By this, we identified 19 websites potentially relevant to our investigation. After a first analysis of the offerings, we excluded three websites, since they were only marginally related to our focus of social media analysis business models. The resulting set of 16 organizations is listed in Table 1.

<b>Company name</b>	<b>URL</b>
AllFacebook-Stats	www.allfacebookstats.com
Derwent Capital Markets	www.derwentcapitalmarkets.com
FinancialQ	www.financialq.com
Insius	www.insius.com
Lithium	www.lithium.com
Radian6	www.radian6.com
NM incite	www.nmincite.com
PageLever	www.pagelever.com
SentiTrade	www.sentitrade.com
Sharewise	www.de.sharewise.com
Sntmnt	www.sntmnt.com
SocialMetrix	www.socialmetrix.com
Sprout Social	www.sproutsocial.com
Stock Twits	www.stocktwits.com
Sysomos	www.sysomos.com
TwentyFeet	www.twentyfeet.com

**Table 1. Listing of analyzed organizations**

### *Data Collection and Analysis*

We collected and analyzed our data in a three step process: First, we developed a coding schema for business models. The schema should help us to systematically analyze the websites and generate comparable data. For developing the coding schema, we conducted a process of literature based open and selective coding (Strauss and Corbin, 1998): Building on the taxonomy of business models suggested by Al-Debei and Avison (2010), we defined four high level categories of our coding schemes, that is, value proposition, value architecture, value network, and value finance (Table 2). We then refined the high-level categories in a process of open coding of the website data, identifying recurring properties of the business models we encountered on the web. Saturation of the coding schema was reached after no new low-level categories could be identified in the analysis of additional business models. The final version of the coding schema was documented in a mind map, which then was used to document the analysis of the business models. A “flat list” of the coding scheme, including the high level and associated low level categories is subsumed in Table 2.

Subsequently, all business models were analyzed with the saturated coding scheme in a process of selective coding (Strauss and Corbin, 1998). The result of the analysis was documented filling the mind maps with the coding schema, one for each website. The mind maps then represented our concise and structured data set which was the basis for our business model analysis.

Categories	Description
Value proposition	“A way that demonstrates the business logic of creating value for customers and/or to each party involved through offering products and services that satisfy the needs of their target segments.”
Value Statement	Short statement for the central value proposition to the customer.
Products & Services	IT related products, that is, fat client, web-based, or mobile applications and consulting service offerings.
Target customer segment	Addressed customer segments, including specialized offerings for distinct industries, for example healthcare or financial services.
Value architecture	„An architecture for the organization including its technological architecture and organizational infrastructure that allows the provisioning of products and services in addition to information flows.”
Core Resources	Comprises organizational resources, such as expertise, and technology-related resources, such as proprietary data centers and application development environments.
Core competency	Specific offerings made to the customer with reference to application scenarios of those offerings, for example, gaining brand insights, create customer engagement, increase brand loyalty.
Value network	“A way in which an organization enables transactions through coordination and collaboration among parties and multiple companies”
Reference customers	Existent customers which the companies indicate as reference customers.
Strategic Partners	Including sales partner networks for increasing market penetration, and technological partners that allow deep technology integration, for example in existent CRM solutions.
Value finance	“A way in which organizations manage issues related to costing, pricing, and revenue breakdown to sustain and improve its creation of revenue.”
Pricing model	The pricing model for the offered value propositions, including software as a service, “fermium” models (e.g. basic versions of applications are free of charge, advanced versions cost a monthly fee), or individual pricing for consultancy services.

**Table 2.** Coding schema for a qualitative content analysis of business models based on social media analysis (in line with Al-Debei and Avison, 2010).

We then analyzed the business model mind maps by accomplishing a content analysis. Krippendorff (2004, p. 18) states that “content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use”. We conducted the analysis in line with the characteristics of qualitative content analysis (Krippendorff, 2004): First, a content analysis is built on reading comparatively small amounts of text. Still, our data captured in the mind maps allowed us to draw on essential information for characterizing the social media analysis business models. Second, a content analysis requires an interpretation of the text into new narratives and can, therefore, assume an interpretive epistemic position. We interpreted our data in focusing on commonalities and differences of business models and, finally, to identify business model archetypes. Third, text analysis is usually performed in hermeneutic circles of reading and understanding the text. We conducted several analysis workshops, in which all co-authors discussed their insights of analyzing the business model mind maps. The final results of analysis were developed collaboratively and iteratively in a process of discussion, dispute and final consensus.

In the following, we will present the results of our data analysis, which led to the definition of archetypes of business models for social media analysis.

**THE MORPHOLOGICAL BOX OF BUSINESS MODELS IN SOCIAL MEDIA ANALYSIS**

The content analysis of the business models resulted in nine main business model properties. Each property is refined by values which describe the business model on a more detailed level (Table 3). Subsequently, we grouped the properties in three categories: *Organizational level*, *methodological level*, and *technological level*.

Properties	Business model characteristics (values)					
Customer segment I	one specific customer segment			variety of customer segments		
Customer segment II	B-to-C	B-to-B		B-to-A	B-to-G	
Analysis method	text analysis	network effects		social network analysis	sentiment analysis	
Type of analysis	marketing campaign analysis		global trend analysis	specific brand analysis	management of financial news	advanced customer segmentation
Data source	social networks	messaging services	blogs	video portals	communities and forums	(press and news) websites
Type of data	current data		historical data		estimated data	
Features	monitoring		analysis		engagement	
Integration capability	ERP	help desk applications	CRM systems	Business Intelligence solutions	stand-alone systems	
Embedding capability	integration of software applications on the web		integration of third party software tools		stand-alone system	

**Table 3. Morphological box of business model characteristics in social media analysis**

**Organizational Level Properties**

On an organizational level, differences in the analyzed business models follow from *customer segments*. We identified two main properties of a business model.

*Customer segment I*: A business model for social media analysis might be offered on *one specific customer segment*, that is, a specific industry, such as the financial industries, retail/wholesale, or car manufacturing. In this case, the value proposition offered is limited to this customer segment and is tailored to fit specific needs prevailing in this industry. On the other hand, the solution is applicable to a *variety of customer segments*, by offering a general value proposition of analyzing social media data, independent on the type of industries.

*Customer segment II*: A business model might focus different markets. In *B-to-C* (business to customer), companies concentrate on end-consumers, whereas in *B-to-B* (business to business), companies provide services for other companies. *B-to-A* (business to academics) refers to social media analysis services specific for academic institutions (even if not as widely spread), while *B-to-G* (business to government) provides services to the public sector.

**Methodological Level Properties**

From a methodological point of view, business models can be analyzed with respect to the *analysis method* used by the organization (i.e., the means of the analysis) and the *type of analysis* offered by the organization (i.e., the objective of the analysis).

*Analysis method*: As discussed before, social media analysis subsumes a plethora of methods. *Text analysis* is commonly used to analyze posts, news or static information (i.e. profile information). *Network effects* are analyzed to identify dynamic phenomena in social media, such as the diffusion of information or electronic word-of-mouth. *Social network analysis* is focused on analyzing actors in a network and their relationships, including sub networks, or hubs and authorities. *Sentiment analysis* has been used to evaluate the polarity of a text in terms of ‘positive’ or ‘negative’ emotions.

*Type of analysis*: Consistent with the method of analysis, different types of analysis are offered. In *marketing campaign analyses* organizations focus on identifying the success or failure of online marketing interventions. In *global trend analyses* market trends are being uncovered, e.g., to support the re-design of goods and services. In *specific brand analysis*, the perception of a brand (i.e., the image) by customers acting on social media is identified. The *management of financial news* is

geared to monitor and engage with financial information being diffused through social media channels. In *advanced customer segmentations*, online information about customers is identified in order to set up fine-grained customer segments, which can support marketing campaigns or individual configurations of goods and services.

### Technological Level Properties

From a technological point of view, five business model properties could be identified. The *data source* and the *type of data* that serves as data for further analyses, the *features* offered as product component, the *integration capability* of other business software, and the *embedding capability* of external software on the web (such as web services).

*Data source:* Business models vary by the number of different types of data sources. Companies might analyze solely *one data source* (e.g. Twitter feeds only), or integrate *different data sources* in their social media analysis technique. Thereby, micro-blogging services, online social networks, blogs, video portals, communities, forums, or press and news websites are used.

*Type of data:* Social media analysis can be focused on analyzing *current data*, comprising all actual data on social media. In addition, they can analyze *historical data*, which is mainly used to analyze trends. Third, *estimated data* can be focused to generate predictions on the dynamics in social media.

*Features:* Social media analysis can enable organizations to *monitor* their activities, often presenting the identified information on dashboards. Advanced *analysis* allows users to make sense of these data by applying social media analysis techniques. Third, business models can also include *engagement* components in order to enable clients to actively publish information in social media. For example, if negative opinions on services of an organization are recorded (*monitoring*), and evaluated as being critical (*analysis*), an organization might take sufficient countermeasures (*engagement*).

*Integration capability:* This property refers to the capability to integrate social media analysis applications into an existing IT landscape of companies. On the one hand, solutions can offer a *full integration in existing information technology*, such as ERP-systems, help desk applications, CRM systems, or business intelligence systems. On the other hand, a *stand-alone system* might be provided that is not integrated into the suite of applications.

*Embedding capability:* Tools for social media analysis might be integrated with other *applications that are available on the Internet as-a-service* (e.g. Google Analytics). Furthermore, tools offered by *third party data analysts* can be embedded. Other tools might have been designed as *stand-alone solutions* and refrain from integrating online tools via web-services.

### BUSINESS MODEL ARCHETYPES FOR COMMERCIALIZING SOCIAL MEDIA ANALYSIS

Identifying archetypes as “a series of different, though very frequently occurring models” (Miller and Friesen, 1978, p. 921) looks back on a long tradition in management science. We tie in that tradition in defining three social media analysis business model archetypes, each with a specific configuration of business model properties from the morphological box. This is in line with Weill et al. (2005) who propose four basic business and sixteen detailed so-called MIT Business Model Archetypes, based on reviewing the business models of the top 1,000 firms in the U.S. economy, and with Wirtz, Schilke and Ullrich (2010) who propose four business model archetypes for creating value on the Internet.

First, a *Content analysis specialist* performs rather narrow analyses of content on selected social media repositories in order to provide innovative and highly specialized services to their clients. The great majority of companies in this category perform sentiment analyses for classifying opinions users have on stocks or on brand image. In most cases, they are start-up companies that have built up specialized knowledge in the area of performing specialized social media analysis techniques (value architecture). A case in point is the company Sentiment Analysis for Financial Markets (Sntmnt). Sntmnt offers software tools (Trading Indicator API, Financial Sentiment API, Consumer Sentiment API) for conducting sentiment analysis and social network analysis for evaluating the online perceptions of brands and providing stock market recommendations (value proposition). The tool analyses data on messaging services (such as the micro-blogging service Twitter). It is a stand-alone solution that does not interface with common software applications used in companies, such as ERP-systems or CRM-systems (value network). Other examples for this archetype comprise Derwent Capital Markets, financialQ, sharewise, and Insius. The specific value proposition of that business model archetype rests on its very specific and unique technology, which is mostly sold as out-of-the-box solution for an anonymous market of private users (B2C) and business users (B2B). The pricing models are mostly not published on the website (value finance).

Second, a *social data and application integrator* draws a comprehensive picture of social media content for its customers, based on analyzing and integrating data from multiple sources on a dashboard. As with the specialized social data analyst, software is the core of the value proposition of this archetype (value proposition). However, the level of functionality and integration is much higher. Often, these providers are medium-sized companies that have been doing business in the social

media market for several years (value architecture). With the help of highly integrated applications, they provide analyses for companies in different industry sectors (B2B), providing an integrated view on social media activities on different platforms. In many cases, the applications also offer functionality for engaging in those platforms. To allow for integrating the social media data with proprietary customer data, the applications interface to standard business applications, such as CRM or help desk applications (value network). Generally, some basic pricing models are published on the website (value finance). A case in point is the company TwentyFeet. TwentyFeet provides a tool for social media monitoring, including diverse platforms, such as online social networks, messaging services, blogs, websites, and video portals. At its core, the tool is geared to perform text mining and social network analysis, in order to identify any important events on these platforms at one glance. It includes functionality from third party providers, such as Google Analytics, but is a stand-alone tool that does not natively integrate with business software. Other business models consistent with this archetype are PageLever, AllFacebookStats, Sprout Social, and Lithium.

Third, a *social media service provider* offers advanced business services to its clients based on utilizing results derived from various methods for social media analyses. Importantly, the value proposition offered is not primarily a software tool, but rather the business services to enable companies to actively deal with social media in their daily business (value architecture). Therefore, the customer base targeted is the B2B market. A case in point is the company Radian 6 that at the time of writing has been incorporated into Salesforce's Marketing Cloud. Radian 6 offers advanced functionality for monitoring and analyzing large subsets of the social web, amongst others with social listening, social ads, social network analysis. Value propositions include marketing campaign analyses, global trend analyses, brand analyses, and customer segmentation. In addition, an active engagement of users in social media can be planned and conducted, aided by the tool. Radian 6 offers various professional services for transforming an enterprise, like training, decision making, social media coordination, or providing social media management as a turnkey solution provided by Salesforce (value proposition). Radian 6 offers various pricing models for different market segments (value finance). The company acts as a resource integrator, since it interfaces with other providers, most of which are also *content analysis specialists*, in order to provide aggregated solutions in a value network of companies (value network). The solution interfaces with other business software components, predominantly CRM systems. Other business models consistent with this archetype include Nmincrite and Sysomos.

## CONCLUSION, LIMITATION AND OUTLOOK

With reference to our research question, we present two major contributions, which help to holistically and meaningfully categorize business models in the social media analysis and engagement market. On the basis of a literature analysis (refined by findings of the open coding procedure), we designed a morphological box to categorize business models for social media analysis with respect to nine business model properties. Based on coding the 16 business models with this schema, we classified three business model archetypes, representing generalized configurations of business models: the content analysis specialist, the social data and application integrator, and the social media service provider. From a theoretical perspective, we thereby contribute to theory by presenting a novel approach for analyzing and classifying business models for social media analysis. From a practical point of view, organizations thereby receive a classification schema to decide on a specific business model type for their market entry.

As all research, our business model analysis is subject to limitations. First our analysis could not be exhaustive. We systematically selected 16 websites of companies with social media analysis offerings. Since the market for these business models is growing fast, future analyses should consider an extended set of organizations. Second, our insights are subject to the data available on the website of the companies, which might reflect the underlying business models incompletely. Our coding schema helped us to collect data in a structured way. Still, it is cumbersome to assess the maturity of offerings. Moreover, the data identified on the websites might be subject to "marketing bias", since company websites can be assumed to be vehicle of selling products to customers.

From a technological point of view, we see one trend as especially interesting for future research: there is a tendency that the applications for social media analysis and engagement need to increasingly integrate into existent business applications in order to deliver meaningful results. This trend has far reaching implications: What are future promising integration scenarios of social media and business applications? How can the integration of those applications be realized technically? Which business opportunities can be derived from the integration of public social data and company-owned customer data? What are privacy issues that have to be considered in the process of integrating these data? Are there new business model opportunities emerging from these privacy issues? We consider these research questions, which might extent our analysis of market trends, as outset for relevant research in social media analysis and engagement, both for the IS community and practice.

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