Chapter 11
Google/Alphabet Case Study

After having established a fundamental understanding of e-business, this chapter deals with applying e-business management within e-business markets, discussing the case of Google as an outstanding e-business company.[1]

Google is a worldwide Internet software corporation and market leader in the area of online search and text-based online advertising. Headquartered in Mountain View, California, Google became well known through its self-named search engine Google. Nowadays, the search engine is available in 173 languages and has more than 180 domains. According to Google, their search engine covers three times the amount of information provided by other search engines.

The following Sect. 11.1 highlights Google's organizational history and development. Section 11.2 provides insights into Google's integrated business model. The subsequent Sect. 11.3 presents Google's market environment and its most important competitors. Finally, concluding questions offer a deeper examination of the case study at hand and respective hints for solutions provide suitable guidance.

11.1 Google's Organizational History and Development

In 1998, Lawrence Eduard Page and Sergej Michailowisch Brin founded the corporation Google while attending Stanford University. Initially, they participated in a research project about data mining and developed a search engine called BackRub, the precursor of the search engine Google. At this time, BackRub was the only search engine that was capable of analyzing cross references of a website.

[1]See also for the following chapter Wirtz (2017).

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B. W. Wirtz, *Digital Business Models*, Progress in IS,
https://doi.org/10.1007/978-3-030-13005-3_11

Despite receiving recognition from academic society, Page and Brin were not able to find an Internet portal that was willing to use the search engine. Therefore, Page and Brin founded Google Inc. on September 7, 1998. As seed capital, they resorted to 1.1 million USD collected from family and friends. In addition, they received venture capital funding from Andreas von Bechtolsheim, the co-founder of Sun Microsystems.

On Google's day of foundation, the corporation also launched the trial version called Google Beta. A few months later, the soon to be prospering organization moved its five employees into their first office in Palo Alto, Silicon Valley, close to Stanford University and their present headquarter. Already in February 1999, Google had eight employees and 500,000 search requests per day. In September 1999, Google established a partnership with AOL and Netscape. As the number of search requests per day increased to 3 million, they finalized the testing phase.

After officially finishing the test phase, Google concentrated on broadening its range of services. In June 2001, the Google search engine gained market leadership with one billion pages stored by the Google Index. Already by the end of the year 2001, Google recorded more than 3 billion page views. In the course of expanding their service chain, Google took over Blogger.com in February 2003. Moreover, in the year 2004, Google offered a free email service called Gmail.

As part of its expansion strategy, Google acquired the world's leading online video portal YouTube for 1.8 billion USD at the end of 2006. One year later, Google bought the company Double Click for 3.1 billion USD. With this acquisition, Google gained access to Double Click's competency in graphic design of advertisement on websites and to its well-established and well-financed customer base.

Ever since its foundation, Google has been expanding its operations and service spectrum continuously. The 4C-Net Business Model typology provides an analytical framework to classify Google's services. This typology is used for classifying business models on the Internet, comprising the dimensions content (compilation, display and provision of content on own platforms), commerce (initiation, negotiation and/or settlement of business transactions), context (classification and systematization of the information that is available on the Internet) and connection (creation of information exchange in networks).

Within the area of context, services such as Google Catalogs, Google Image Search, Google Toolbar, Google Book Search and Google Scholar exist. Likewise, the services Google Mail, Google Talk and Google Voice are part of the connection segment. Regarding the commerce segment, Google AdWords, Google Checkout and Google Product Search constitute an important supplement to Google's services. Lastly, Google Groups, Google News, Google Maps and Google Earth represent services in the content area. Overarching this typology, there are services that correspond to more than one section like Picasa, YouTube or Google Plus.

At the end of 2007, the Open Handset Alliance (OHA) was founded, aiming to develop open standards for mobile devices, especially Android, an open source mobile phone platform. This alliance includes members from various network providers (T-Mobile, Telefonica), software companies (eBay), manufacturers (Samsung, LG), marketing service providers and companies from the semiconductor industry (Texas Instruments, Broadcom, Nvidia). At the same time, Google expanded its operations in the mobile phone industry and was able to align already existing services with the upcoming mobile segment. Consequently, the Android market offers manifold mobile applications like those from Google but also from many other providers and software developers.

The mobile market became increasingly more important for Google's strategic positioning. Google's acquisition of Motorola's segment called Motorola Mobility for 12.5 billion USD in 2011 highlighted the importance of gaining access to the mobile market. This acquisition granted Google access to one of the largest portfolios of patents within the mobile sector, especially to capacities to produce smartphones based on Google's operating system Android. In the third quarter of 2011, Android dominated the market with a market share of 52.3% and with approximately 180 million devices sold. At this point in time, Google had a broad range of services at its disposal. Nevertheless, changes took place in Google's top management.

In April 2011, Larry Page replaced Eric Schmidt and took over as Google's CEO, while Eric Schmidt became executive Chairman of the board of directors. Because of a simultaneous strategic modification, Google started to reduce its spectrum of services in order to focus on those segments most efficient in terms of costs and benefits. Hence, Google removed 20 services from their offers including, among others, Google Notebooks and Google Desktop. In this respect, Larry Page stated: "We have to make tough decisions about what to focus on."

Since Google's initial public offering in 2004, it has tremendously grown and developed. Within a few years, Google evolved from a startup company to the largest Internet service provider worldwide. Nowadays, Google employs around 70,000 employees and is market leader in the areas of online search and text-based advertisement. Due to the high name recognition of its identically named search engine, Google has become an established worldwide brand. This development is reflected in Google's increasing revenue and profit.

The increasing diversification of its portfolio eventually led Google to found an umbrella company called Alphabet on October 2, 2015. Now, Alphabet serves as a multisector holding that allows its subsidiaries to act more freely than within one company, which was necessary for Google to stay fast and innovative. In 2016, Google generated a revenue of 90.27 billion USD and achieved a year-on-year increase in revenue of 20.3%. Figure 11.1 represents the development of Google's revenue and net profit since the year 2004.

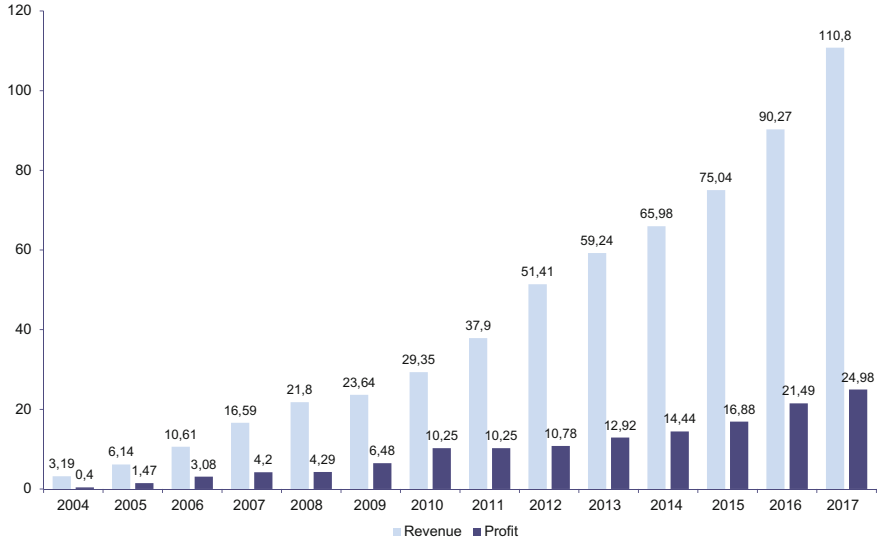

Fig. 11.1 Development of Google/Alphabet's revenue from 2004 to 2017. *Datasource* Google Watch Blog (2018)

11.2 Google's Integrated Business Model

Even though the holding cooperation is called Alphabet, its core brand and most of its Internet-related ventures are keeping the name Google, which is why this case study also uses this name, as it focuses on those areas of activity. In the context of e-business models, the classification of Google's services with the help of the 4C-Net Business Model typology offers insight into the formal structure of the corporation. Although the search engine was previously associated with the context model, its broad service spectrum suggests a highly diversified business structure.

Therefore, one may categorize Google's business model as a hybrid business model, as its service range embraces all four dimension of the 4C-Net Business Model. In order to depict Google's hybrid business model, a detailed overview of various business model components will be presented. Especially the market-supply (competitors, market structure and value offering/product and services) and the revenue models (revenue streams and differentiation) serve as the foundation for analyzing the business model at hand.

In general, Google strategically aims to provide, organize and systematize existing information worldwide by means of the Internet. With this, Google formulates a clear mission that is an integral part of its corporate strategy and thus also of the respective strategy model (business model mission, strategic position and development paths, as well as business model value proposition). This way, Google grew to become an integrative Internet player and one of the most important gatekeepers of access to information throughout the Internet in recent years. In this context, the term "gatekeeper" describes the opportunity for the operator of a search engine to influence what information users find and can actually access (see Fig. 11.2).

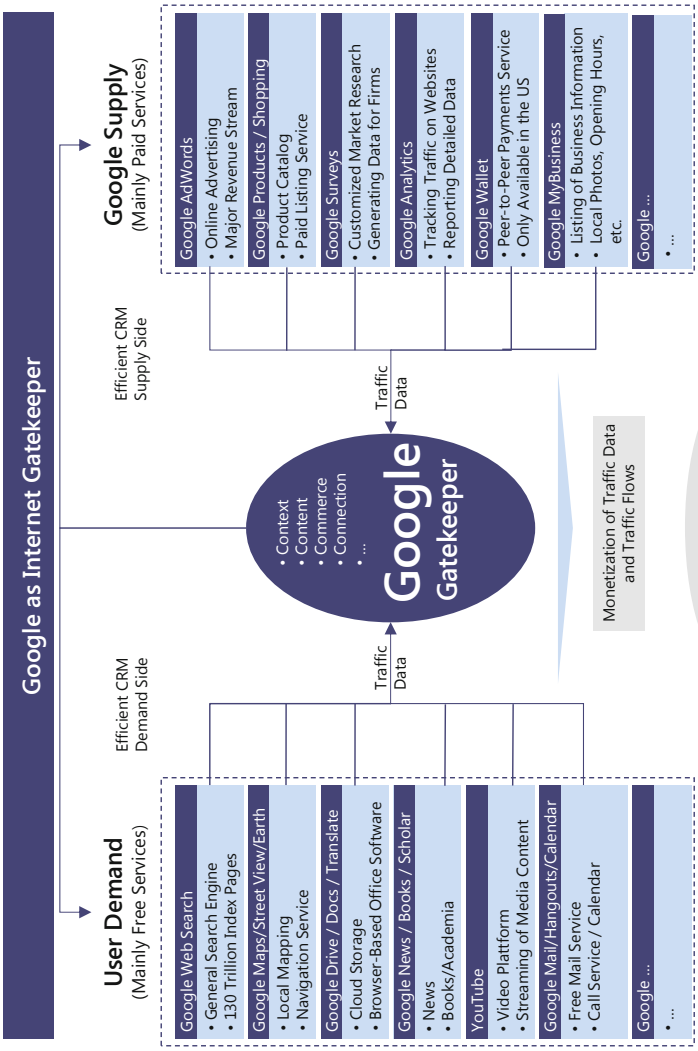

Fig. 11.2 Google as Internet gatekeeper of information. *Source* Based on Wirtz (2010b, 2018b) and own analyses and estimations

Due to the vast amount of existing information and the recent developments in user behavior, providers increasingly rely on the transparency of the Internet in order to be easily found by all users. Consequently, as one of the largest providers of a search engine, Google drew attention to its growing market power.

Google's value proposition mainly rests upon its gratuitous compilation, organization and representation of the immense variety of information on the Internet. Importantly, the value proposition remained the same throughout Google's organizational development and is characterized by a high recognition value and user friendliness. Google achieves a higher customer retention through their complementary service offerings. Private users can make free use of email, digital photo or image management and text processing programs, and they will probably do so repeatedly. Moreover, the high coverage Google promises with regard to advertising purposes attracts business users.

From a resource-based view, Google's manifold competencies and resources are extensive. One major core asset emerges from Google's highly specialized technological infrastructure that is characterized by its high amount of redundancy, efficient load balancing and a predominantly software-based system. Another core asset is Google's corporate brand and simultaneous product brand, which have been manifested through the process of creating a generic trademark. This means it became common to use the term "Google" to search the Internet.

One essential competence of the company is its comprehensive contextualizing competence. Notable in this respect is the criteria-specific localization, classification and systematization of the search engine as well as Google's extension of its services when it comes to illustrating context. Particularly after the year 2004, the company expanded its competencies in content and connection-related areas. This was mainly possible by intensifying business relations and through acquisition activities. Further core competencies of the enterprise are its technological competence, competence at content creation and search, as well as a fully developed competence at promoting advertising efforts.

The network model of Google is characterized by a far-reaching cooperation network, as well as an extensive business-to-business and business-to-customer network. The free supply of the Google search engine is particularly important. Google AdSense enables both companies and individuals to add a search box to their own website, giving them a share in profits when other Internet users click on one of the advertisements that appear on the search engine results page.

Without an innovative network of business partners and profitable business-to-business cooperation, Google would not be as successful and powerful as it is today. Nevertheless, the company has established an extensive network and tremendous user base in the customer area, which especially profited from a digital word-of-mouth effect after the foundation of the company. Users that were happy with the search algorithms personally recommended them to family, friends and acquaintances.

Google's creation of goods and services follows a clear and linear structure. The first step of creating content is to gather, systematize and classify information in order to save it as results for on-demand inquiries and make them available through the search engine. This content-creation process is particularly based on the supply of

information from third parties or oneself. In comparison, the connection supply is characterized by a strong interdependency between user interaction and communication management.

The company receives most of its input from communities, content suppliers and news agencies. Therefore, the transmission of information and interaction follows a simple process, i.e. Google checks websites and registered content and either adds them to the index and utilizes them or classifies them as irrelevant and therefore rejects them.

Another partial model of Google's business model is the revenue model. The AdSense partner program generates one of the most important revenue flows, which unlike the AdWords program places context-dependent advertising on an external website. Within this system, the owner of the website receives a certain amount of remuneration when a user clicks on the advertisement. Simultaneously, Google attains more traffic from partner websites. The fees or portion of ad revenues Google pays to such advertising partners that run Google ads or services on their websites are called traffic acquisition costs (TAC).

Another fundamental subcomponent of Google's business model is the market offer model that consists of context, content and connection offers. The aspects of the company that matter most to industrial customers are the wide-ranging offers of well-developed technical functions and the high number of users. The latter is associated with the great recognition value and the high usage of the search engine. The free usage of various online services offered by Google is highly appealing to private customers. However, the foundation of Google's business model is still its search engine that offers information via the Internet by means of an intuitive search tool. At this point, Page's and Brin's PageRank algorithm evaluates the relevance of the website according to the links it incorporates.

The introduction of PageRank revolutionized those search engines that evaluated websites according to their search terms in texts and meta tags. Today, Google includes over 200 different evaluation criteria for the ranking of websites. With the recent update of the search algorithm called "mobile-friendly 2", Google rolled out another ranking signal boost to benefit mobile-friendly sites on mobile search.

In terms of the 4C-Net Business Model typology, the context model with the search engine as its core service builds the foundation of Google's integrated business model. Due to a continuous and innovative revision and extension with specialized search services for images, news and geographic information, Google is the most frequently used search engine worldwide. Further services within the context segment are, for example, Google Catalogs, Google Images, Google Toolbar, Google Book Search, Google Scholar, Google Reader, Google Blog Search, Google Now and most recently Google Home.

One of the first services besides the search engine was Google Catalogs that offers users the opportunity to look at different print catalogs online. However, Google turned down this service in August 2015. Google Images allows to search for distinct pictures online by means of special search criteria like color, format or the right of use. Google Toolbar is a toolbar for the web browser that allows the user to quickly access the Google search engine and other Google services without changing to the main page. The following Fig. 11.3 presents Google's business model.

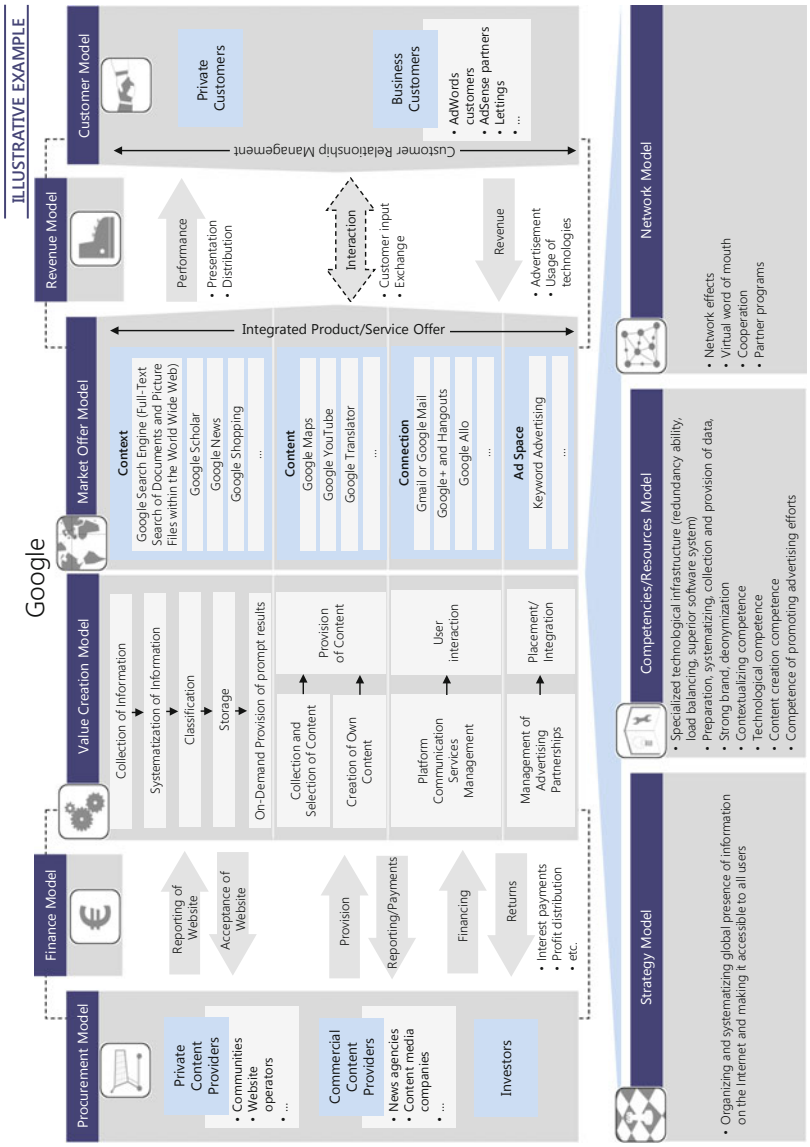

Fig. 11.3 Google's business model. *Source* Based on Wirtz (2010a, 2011a, 2017) and own analyses and estimations

The applications Google Book Search, Google Scholar and Google Blog Search enable to search the Internet for books, academic publications or blogs. Google Reader, a web-based feed reader, informs users automatically about new contributions to their favorite homepages. However, Google turned down this service in July 2013. With the takeover of the software producer ITA in 2007, Google expanded its context segment with the analysis of flight information. This feature presents airfares in a comparable way. The user benefits from these various context services in terms of time saving and information procurement.

In 2012, Google introduced the service Google Now as an extension of the Google Search App. Google Now is an intelligent personal assistant with voice search and a command feature. In 2016, Google launched its smart speaker Google Home that is able to receive acoustic commands via an integrated microphone and serves the user as personal digital assistant at home. Basically, it transfers the functionalities of the personal assistant Google Now to the home environment and enables the user access to Google services such as Google Play Music, YouTube or Chromecast via voice commands.

Another major sector of the market supply is the content segment that is characterized by the provision, preparation and aggregation of multimedia content. This sector contains services like Google Groups, Google News, Google Maps, Google Earth, Google Sketch Up, Google Text and Tables, iGoogle, Google Merchant Center and YouTube. Google extended or merged many of the older services in order to offer the user a broader range of services. For example, Google Local was integrated into Google Earth and Google Maps.

The first content service was Google Groups. This online service allows users to establish or to search for different groups of interest and to publish own content. Here, the connection aspect is also highly important because the service rests upon the Usenet and therefore offers a foundation for interactive communication.

After introducing Google Groups, Google launched a news service called Google News, a platform that automatically creates content in over 35 languages. Google Earth presents a digital globe that uses satellite aerial views and geographical data to create a digital model of the earth. In doings so, it allows users to search for addresses or places and to calculate distances and routes.

Moreover, Google Sketch Up is software to construct a three-dimensional model that allows to create pictures and animations. Google Text and Tables is another online service that offers online access to a word processing and table program. The successor to Google Base, Google Merchant Center, allows retailers to deliver product information to Google in order to integrate it into the Google Product Search.

The most important content service today is the online video channel YouTube. YouTube enables users to watch, upload and publish videos. To do so, they can make use of different channels or individual YouTube websites, through which they can use or offer other information besides those videos. The number of companies using this channel for marketing purposes is rapidly increasing. YouTube is the most popular platform for this kind of video material.

In 2016, YouTube had over 1.3 billion users worldwide, who altogether uploaded more than 300 h of video to YouTube every minute (Statistic Brain 2016b). Recent content offers of Google include Chromecast, a line of digital media players, as well as the virtual reality platform Google Daydream.

The services belonging to the connection business model distinguish themselves by allowing to exchange network-based information. In this segment, Google presents itself with services like Blogger, Google Groups, Google Mail, Google Talk, Google Voice, Google Latitude, Google Plus (Google+), Google Drive, Google Hangouts and most recently with the instant messaging app Google Allo and video chat app Google Duo.

The social network Google+, for instance, is the consequent attempt to extend Google's business model in the connection segment. Launched in September 2011, it counted more than 375 million active members in 2016 (Statistic Brain 2016a). Google+ incorporates various old and new connection services but still struggles to compete with the largest social network Facebook.

With regard to the initiation, negotiation and settlement of business transactions of the commerce business model, the most important services Google offers are AdWords and AdSense. These two services will be presented later on in the context of Google's revenue model. In the commerce segment, Google has rather few services to offer. Google's payment service Google Checkout is primarily used for payment handling in the Android market, whereas its payment service Google Wallet allows users to pay via mobile phone with NFC (Near Field Communication).

Google has been extending this segment by product search engines, product presentation and price comparisons primarily for its services Google Product Search and Google Shopping. Moreover, Google is starting to compete with other classic online retailers, particularly through its service Google Merchant Center. Recently, Google has also acquired Famebit a leading marketing platform that connects brands to creators for branded content creation.

Other services are part of more than one segment at once. For example, the photo community Picasa allows different users to share their photos worldwide and to interact with one another. According to this, Google combines both the content and connection segments in one service.

Since 2008, Google has been following business units outside of the 4C-Net (content, commerce, context and connection). For this purpose, it has developed information technologies like the mobile operating system Android, as well as own mobile consumer electronic devices, like the Google Nexus series and its next generation Google Pixel. Recently, Google has also introduced its augmented reality glasses Google Glass and its virtual reality glasses Google Cardboard. Moreover, it has acquired Nest Labs, a producer of smart appliances for home automation, which now works with the Google Home. Figure 11.4 highlights the development of Google's business model and service offers.

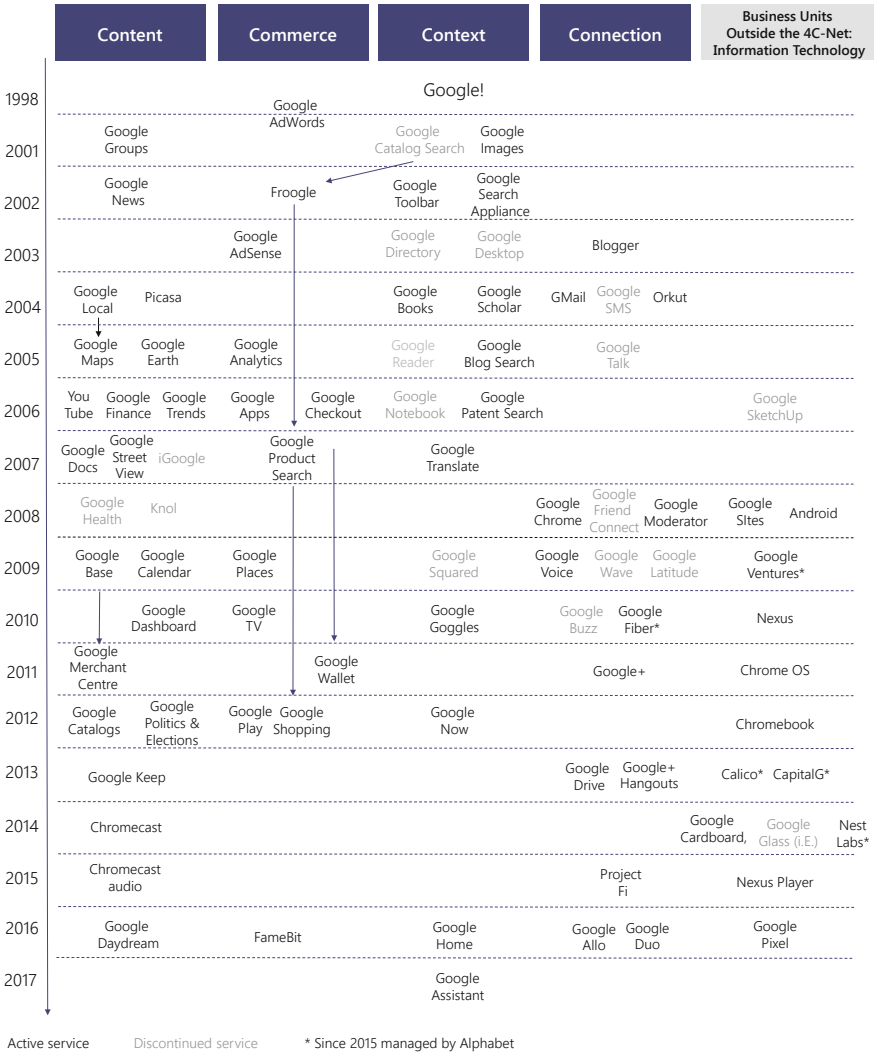

Fig. 11.4 Development of Google's hybrid business model. *Source* Based on Wirtz (2010b, 2018b), including updates

Another central component of Google's business model is the revenue model through which multiple income streams are introduced and analyzed. The most important revenue streams are advertising revenues generated through integrated advertising solutions and keyword advertising by AdWords. The customer chooses various keywords that describe the product or service advertised, so that these products or services appear in the search results. Furthermore, the client determines the maximum price that one has to pay for every click on the advertisement.

Combining the cost per click (CPC) with the quality of the keyword or product provides a basis to assess the advertising and thus the priority with which Google advertises it. Moreover, the customer defines a monthly budget and is able to change some settings regarding the networks or languages.

Besides the basic search page (google.com), possible advertising networks are Google Search Network and Google Display Network. The Google Search Network contains websites that have licensed Google's search function as an independent toolbar. The Google Display Network comprises a large number of different websites that disseminate the display advertising. Nevertheless, considerably high costs in the form of traffic acquisition costs (TAC) emerge.

Furthermore, Google has expanded keyword advertising also to other services such as Google Product Search and Google Mail. Besides the classic text display, other forms of multimedia like videos or images are also possible. In addition, location data can be integrated to combine the advertising with services like Google Earth or Google Maps.

Since the year 2007, Google has also generated considerable revenue from other income streams than advertising, which we will discuss later on. However, Google's total revenue is mainly composed of advertising revenues that accounted for 90% of Google's total revenue in 2017. Figure 11.5 shows the development of Google's revenue.

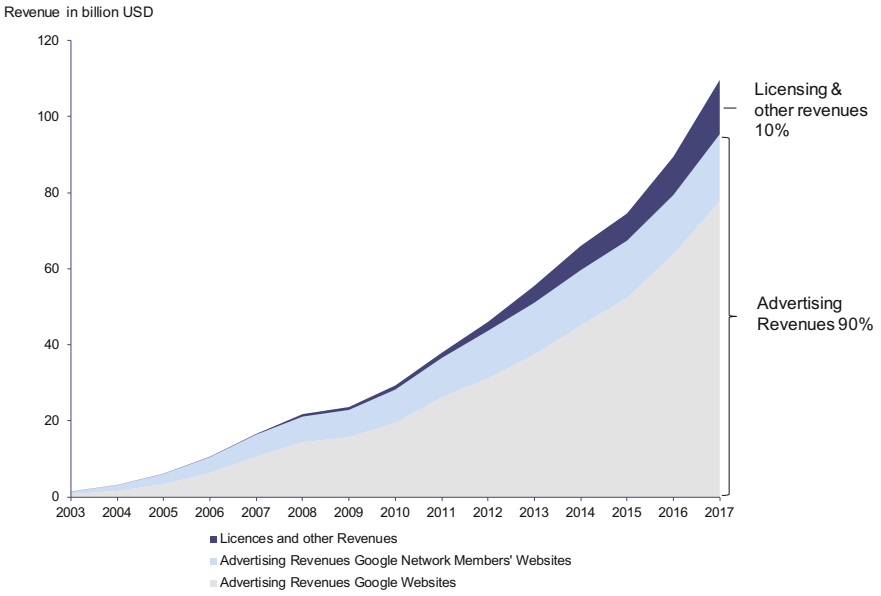

Fig. 11.5 Development of Google Alphabet's revenue. *Datasource* Alphabet Inc. (2017b)

Besides the huge amount of advertising revenues, the second revenue stream originates from royalties for the usage of software, as Google offers various software solutions in the form of fee-based versions with extended usability for professionals. Such programs are, for example, SketchUp Pro, Google Earth Plus and Google Earth Pro. In this extended version, Google Earth Plus offers the integration of GPS and a program to virtually construct buildings.

Moreover, Google sells the server hardware Search Appliance that companies can utilize for their document management and indexation. Google is also active in the mobile market with its smartphones (e.g., Nexus 5X and Nexus 6P) produced by LG and Huawei, but only generates comparably low sales revenue in this market. However, according to Google, nexus devices are not primarily intended to drive revenue but are rather an experimental bearer for Google's innovation for Android (Fortune 2015). Google also receives revenue over the Android market, where developers of fee-based applications earn a transaction fee of 30% on the sales price.

According to the highly diversified service spectrum, Google's revenue streams comprise transaction-dependent and transaction-independent revenues. Figure 11.6 presents these different forms of revenue, showing that Google has various revenue streams that are differently structured. Nevertheless, one always needs to acknowledge the importance of keyword advertising in this context.

	Direct revenue generation	Indirect revenue generation
Transaction-based	• Sale of Hardware • Transaction Charges on the Android Apps' Market: PlayStore	• Cost Per Click – Keyword Advertising • Cost Per View – YouTube Video Ads
Transaction-independent	• Royalties, for example, fees for using extended program packages • AdWords activation fee	• YouTube Custom Brand Channel

Fig. 11.6 Google's revenue structure. *Source* Based on Wirtz (2000c, 2016a)

11.3 Google's Market Environment

As one of the world's leading Internet organizations with a broad service range, Google competes with numerous players in different markets. The following section identifies and presents various markets according to their strategic importance for Google. The most essential market for the company is the search engine market. This is not only the company's origin and core business, but also accounts for about

70% (more than 90% including the network) of the revenue streams. A market share of 63.0% makes Google the most frequented search engine in the U.S. Figure 11.7 depicts the four largest providers of search engines worldwide.

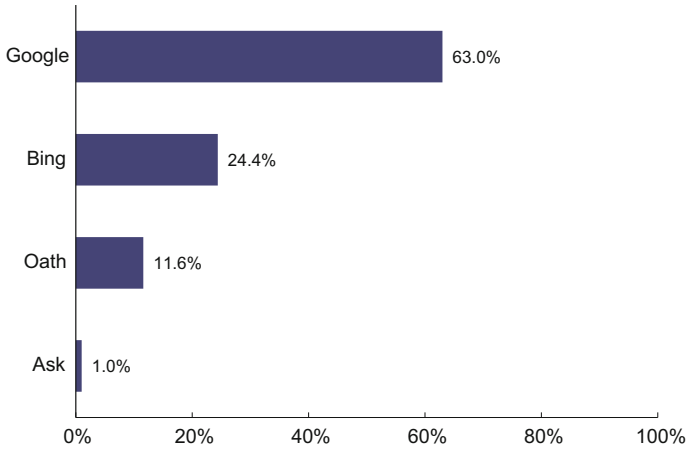

Fig. 11.7 Market share of search engines in the United States in September 2018. *Datasource* comScore (2018)

One should also pay attention to the fact that the search engine market is part of the superordinate advertising market. Due to the effective search engine marketing, not only the communication quality is important but also the coverage respectively the number of site views. In this respect, Facebook emerged as one of the most important competitors, gaining more stake particularly in the areas of social advertising and display advertising.

Another crucial market is the mobile Internet market in which Google operates as a provider of advertising services and a content provider. Just like in the classic markets, Google positioned itself with the search engine in the mobile segment so that location-dependent search and marketing, as well as services like Google Maps and Google Latitude gained in importance. The market share of Google's mobile search engine is even higher than that of the classic search engine, accounting for almost 93% of the mobile search market in the U.S. in October 2016 (Statista 2016). Consequently, Google occupies a strong position in the mobile market as well.

However, due to different proprietary systems, the mobile market is highly competitive in terms of classic online advertising. Apple's marketing platform iAd serves as an example. iAd is able to integrate advertising messages seamlessly into applications and thus operates in the same way as Google's system AdMob. Moreover, other social networks like Foursquare and Facebook play an important role in the mobile segment and strongly focus on local social advertising offers.

With regard to content provision, Apple launched its platform iTunes in 2003, which has quickly become the market leader in this segment and one of Google's strongest competitors. Thus, iTunes serves as a model company for Google's Android marketplace that distributes content for the operating system Android. Google further expanded its mobile offers with Google Music, a competitive platform to iTunes, using One Pass as a suitable operating system.

Because of its high growth rate and market leadership Android finds itself with 70.85% market share in mobile devices (mobile phones, smartphones, tablets) clearly ahead of Apple's iOS with around 23.1% market share. Another competitor in the mobile segment is Microsoft that also owns a proprietary platform with a market share of 2.57%, i.e. the Windows Phone and Windows 10 that runs on different devices such as desktop computers, tablets and mobile phones (Netmarketshare 2016).

Besides these core markets, Google constantly aims to enter other markets and enhance its position in the Internet market. Google's advancements in e-commerce are especially significant. By aggregating product information, Google is increasingly gaining importance as an intermediary in online retailing. Thus, competition among actors like Amazon, Google and so on is rising. With regard to Google's presence via YouTube in the classic and mobile Internet, Google competes, for example, with the content aggregator Hulu.

11.4 Case Analyses and Structure of Solutions

Case studies have their origin in the so-called 'Harvard Case Studies' and are nowadays a commonly applied and widely accepted scientific method within in the field of business administration and respective teaching. One particular characteristic of the case study analysis is that there is often no unique solution. Instead, one considers a specific problem and searches for an approximately optimal solution.

This characteristic is at the same time the criterion to differentiate the case study analysis from normal exercises that are characterized by right and wrong solutions (e.g., in the field of law). This section defines the meaning of a case study and presents a methodological approach for handling and solving case studies.

The case study analysis is a heuristic method and thus a method of self-regulated learning for the respective person that deals with the case study and works out conclusions by means of analyses. Within the scope of this strategy of investigation, one examines a certain phenomenon in the respective and real existing context by using one or multiple objects of study, like individuals, groups and organizations.

The persons dealing with the case study should not be bound by particular methods or limited to a single solution method. Looking at a case study from multiple perspectives generates different approaches to solving a problem, but at the same time requires a broad spectrum of different approaches and solution methods. The case study analysis enables to achieve a variety of different goals of learning and teaching.

However, the primary focus of interest refers to the connection of theory and practice. Here, one can distinguish, on the one hand, between approaches that apply theories to practice and, on the other hand, approaches that move from practical thinking and procedures to theories.

Given the comprehensive approach to the research context and the inductive procedure of case study research, this approach generally refers to qualitative research. The following three characteristics of a case study clarify this closeness to qualitative research (Merriam 1998):

- Context-related: The case study focuses on a group or an individual, a program, a phenomenon or an event.
- Descriptive: The final product or result of the case study contains a detailed and multilayered consideration of the object investigated.
- Heuristic: The case study does not test already existing hypotheses, but rather generates new insights into the object of study, for instance, conditions, consequences and causal relationships.

Since one should consider every case study individually, specific cases cannot be generalized. However, if underlying conditions or characteristics of the objects of study are similar, one can at least partially transfer them. Consequently, the case study approach is particularly suitable when the objective is to look at complex underexplored phenomena in a broad manner and against the background of their dependence on context. The following illustrates a methodological approach for handling and solving case studies.

The procedure for approaching case studies usually comprises six steps that build on each other: (1) analysis of actual situation and SWOT analysis, (2) specification of problem, (3) deduction of strategic courses of action, (4) determination of crucial success factors, (5) decision on strategic alternatives and (6) deduction of recommendations. The first step should aim to analyze the actual situation. A SWOT analysis considers internal characteristics (e.g., strategy, structure and resources) of the business but also the external general conditions (e.g., market structure, customer and supplier potential).

The second step of the solution method of case studies involves specifying the respective problem. Potential issues, for instance, can trace back to the procurement, production or the corporate strategy. Based on this elaboration of the problem, one can derive strategic courses of action in a third step, for instance, strategies of diversification, cooperation and market entry. The fourth step of the solution method of case studies includes determining or defining crucial success factors, before subsequently deciding on the strategic alternatives in the fifth step. In this connection, one examines the courses of action identified, for instance, for specific advantages and disadvantages or their feasibility. The sixth and final step of this approach involves deducing or giving strategic and/or operational recommendations. Figure 11.8 presents an overview of the solution method of case studies.

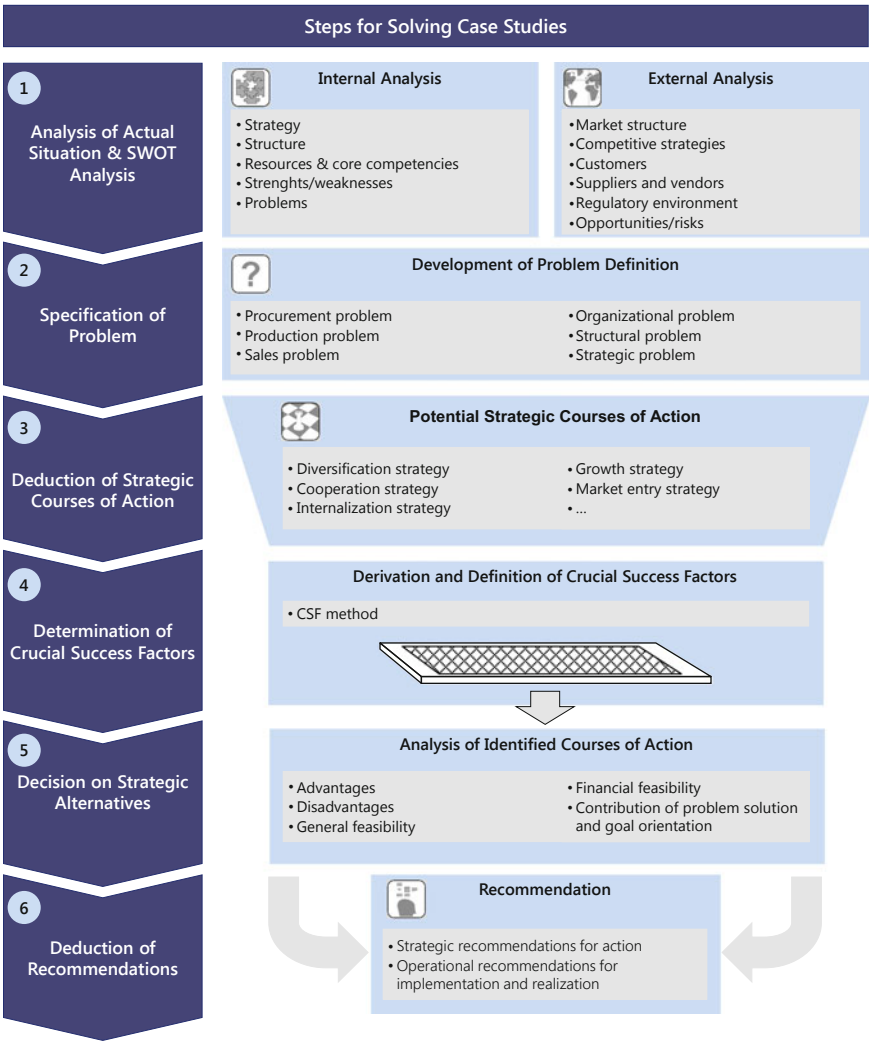

Fig. 11.8 Solution method of case studies. *Source* Wirtz (2013c, 2017)

- Analysis of Actual Situation and SWOT Analysis

Within the scope of a case study analysis, one can apply the systematics of strategy development to examine the actual situation of a company. An important part of strategy development is analyzing the situation by means of situation analysis (Wirtz 2013d), which comprises analyses of environment, market, competitors, as well as competencies and resources. The competitive analysis and competence-resources analysis merge into an analysis of strengths-weaknesses. This in turn combines with an environment analysis and market analysis to form

an analysis of opportunities and risks. The following section explains this procedure.

Within a situation analysis, one first examines the environment to describe the general conditions under which the respective company acts. In this connection, the sociopolitical, technical, regulatory and economic environment plays an important role. After the environment analysis, it is necessary to analyze the industry and market in which the respective company operates particularly the market structure and behavior of the demanding actors.

In the next step, one should perform a competitive analysis that aims to identify relevant actual and potential competitors and to examine their behavior on the market. Subsequently, one needs to consider the resources of the competitors. Along with this competitive analysis, one should also investigate the company's own competencies and resources. This competence-resources analysis needs to take place in much more detail than the competitive analysis and distinguishes between core competencies, complementary competencies and peripheral competencies (Wirtz 2000f).

Core competencies are mandatory resources that the company requires in internalized form to provide products and services. Complementary competencies, by contrast, are necessary resources that can also be provided by cooperation partners. Peripheral competencies refer to resources that are not essential and thus may be acquired from the market.

Based on the competitive analysis and the competence-resources analysis, one can analyze strength and weaknesses. Here, the aim is to identify advantages and disadvantages over the most important competitors and hence to derive the respective scope of action. The results of this strengths-weaknesses analysis together with those of the environment and market analysis jointly form an opportunities-risks analysis. In this connection, one compares the external situation with the internal situation of the respective company in order to identify development trends of the environment and the markets at an early stage and subsequently, to determine whether these future developments pertain to a strength or weakness of the business. On this basis, one can deduce indications of a potential strategic demand for action and use the results to develop the corporate strategy.

- Specification of Problem

After analyzing the actual situation, one has to specify the respective problem of the case study. This step focuses on identifying all problematic issues of the case study. If, for instance, several problems occur, it is recommended to prioritize them or to form a processing sequence and describe their relationships among each other. When working out the basic problems, one may not make the mistake of identifying symptoms as indicators or consequences of an underlying problem as the actual problem, because otherwise it is not possible to achieve adequate proposals for solution. One needs to summarize the symptoms and investigate the reasons behind in order to reveal the causal main problem. In case there are several central issues,

one should consolidate them and bring them in order according to their meaning and importance.

- Deduction of Strategic Courses of Action

After analyzing the actual situation and specifying the problem, one needs to derive strategic courses of action. Based on the case study-specific problem, one first develops different alternative solution approaches, the so-called strategic courses of action. The following evaluation of these options takes place under uncertainty since case studies often do not provide complete information and thus require to make assumptions. Examples of strategic courses of action are strategies of market entry, diversification, growth, cooperation and internalization. After deriving strategic courses of action, one can determine the key success factors of the business. The following section therefore discusses the procedure of identifying crucial success factors.

- Determination of Crucial Success Factors

Crucial success factors (CSF) are a small number of characteristics that significantly influence the success of companies. They differ from business unit to business unit because they are affected by both internal and external conditions. CSF need to have a certain minimum characteristic in order to enable the desired degree of goal attainment. The procedure of determining CSF and their application not only includes identifying the CSF, but also measuring the degree of goal attainment, as well as making an ongoing target-performance comparison.

Besides creating a strategic frame of reference, the CSF method also involves analyzing own objectives in order to identify the CSF afterwards. In the following, one needs to develop measuring criteria and determine so-called critical thresholds as standards. Subsequently, one can identify the control quantities and capture occurring changes. Having determined the CSF, one needs to decide on the different strategic alternatives, which is described in more detail in the following section.

- Decision on Strategic Alternatives

Within the scope of deciding on the strategic alternatives identified, one should first analyze and assess the degree of fulfillment of the CSF for every strategic course of action. Then, one should examine the congruency between business potentials and market-specific requirements by means of strategic fit analysis (e.g., SWOT analysis). Finally, the criteria of feasibility indicate whether the respective company possess the resources and skills necessary to realize the respective strategic option. The analysis of the individual aspects leads to a so-called strategic evaluation matrix that allows to select the best strategic alternative. Based on this evaluation and selection, one can deduce recommendations for action, which is explained in the following section.

- Deduction of Recommendations

Deriving recommendations involves explicitly verbalizing and presenting the optimal strategic course of action selected with regard to the problem identified earlier. It is then necessary to operationalize the strategic decision and transfer it into specific recommendations for action in order to implement the decision. In this connection, one first needs to demonstrate the concrete measures and necessary consequences of the alternative selected, before adjusting operational action by means of operational measures (who, where, what, when).

The last step involves planning the financial realization of the strategic option selected. For this purpose, one needs to plan a detailed budget not only to ensure the actual financing after having analyzed the general feasibility, but also to show that the costs are justifiable with regard to the expected benefit.

11.5 Google Case: Questions and Solutions

Question 1
Discuss Google's initial situation by means of the SWOT analysis with regard to Google's current financial circumstances. What kind of problem statement can be deduced?

Question 2
Based on this analysis, derive strategic opportunities of action and critical success factors for the management of Google. Name present success factors of Google.

Question 3
Reflect upon these potential strategic alternatives and choose the dominant one.

Question 4
Discuss various opportunities for Google to differentiate itself in the context of revenue optimization. Which recommendation for action would you give Google?

This section hints at solutions to the summarizing questions about the Google case study, following a step-by-step procedure. Against the background of Google's present revenue situation, the SWOT analysis focuses on and presents Google's current situation. Based on this analysis, a problem statement can be derived. Then, strategic alternatives and essential success factors are established and critically assessed. Subsequently, several opportunities for revenue differentiation and extension of the service range are discussed and evaluated, finally leading to recommendations for actions for Google. Figure 11.9 offers a schematic overview and describes core aspects, tasks and hints for solutions with regard to the Google case study.

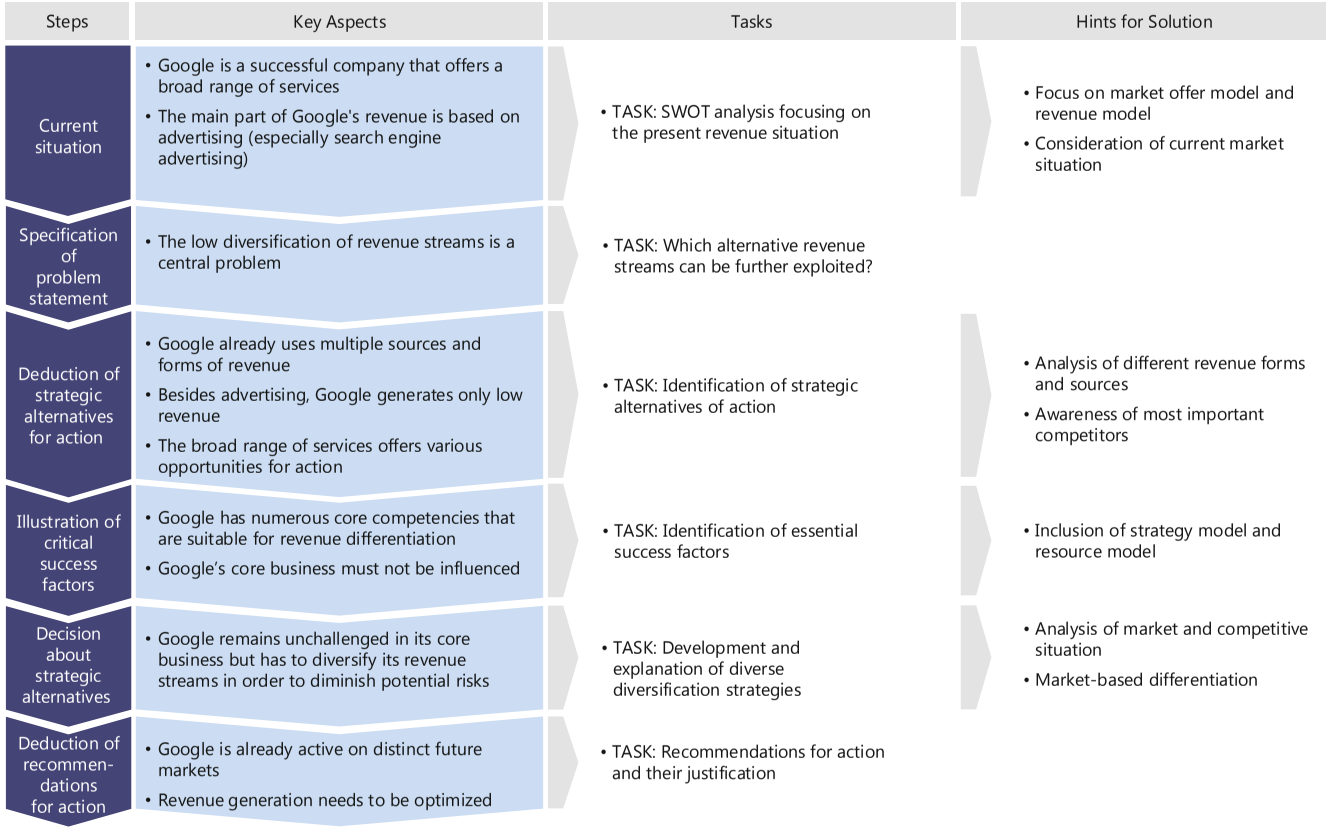

Fig. 11.9 Key aspects, tasks and hints for solution in the Google case study

Solution to Question 1

Discuss Google's initial situation by means of the SWOT analysis with regard to Google's current financial circumstances. What kind of problem statement can be deduced?

The SWOT analysis framework contains an internal and external dimension. While the internal dimension comprises the strengths and weakness of a business, the external dimension involves its opportunities and threats. Google's strengths are particularly its dominant position in the online and mobile advertising market including a broad advertising network, as well as its strong position as online and mobile content provider. Further strengths are its very broad range of online services and technological leadership.

Among Google's weaknesses are its missing revenue differentiation and unclear range of services. Moreover, many services have no clear revenue purpose or unexploited revenue potential. Further weaknesses are Google's varyingly strong positions in different geographic markets and its generally weak position in the social media market

Opportunities for Google lie in the introduction of new or the expansion of existing revenue streams for the current service range or in growing markets. In this connection, promising growing markets are particularly mobile business (e.g., Google Nexus, Google Pixel, Google Allo Google Duo), social media (e.g., Google+), Internet of things and automation (e.g., Google Home, acquisition of Nest Labs), augmented and virtual reality (e.g., Google Glass, Google Cardboard), artificial intelligence, machine learning and big data. A further opportunity for Google is the expansion of their market leadership in online marketing.

Threats to Google may be its vulnerable revenue monoculture that may pose a high risk through a decrease in advertising revenue (e.g., customer turnover to Facebook), a recession-driven decline or replacement through other search engine providers (e.g., Bing's increase in market share). Moreover, Google could experience brand dilution through too many unsuccessful services.

The combined consideration of the individual aspects of the internal and external dimensions results in four different basic strategies: SO strategies (strengths-opportunities combination), ST strategies (strengths-threats combination), WO strategies (weaknesses-opportunities combination) and WT strategies (weaknesses-threats combination). Figure 11.10 describes the specific elements of the SWOT analysis adapted to the Google case study.

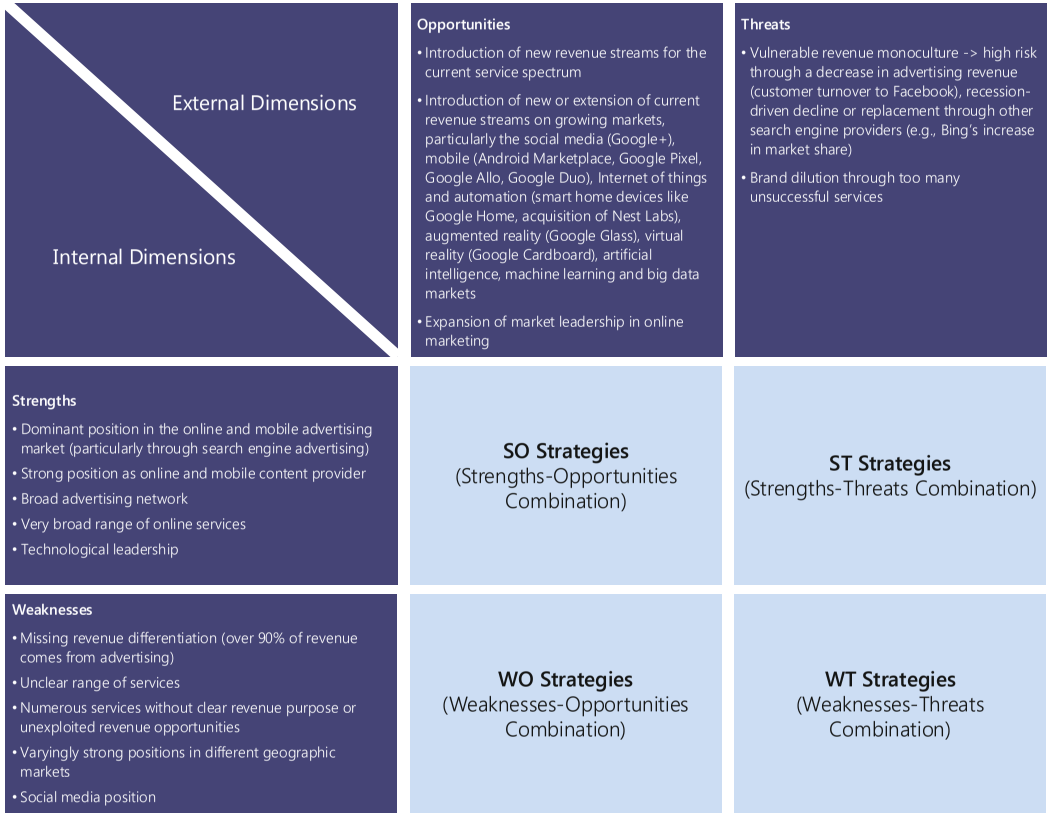

Fig. 11.10 Analysis of Google's strengths, weaknesses, opportunities and risks

Based on the results of the SWOT analysis, the following problem statement can be derived: despite Google's market leadership in online business, the company has not yet managed to extend its revenue basis through multiple income streams. The unsystematic and unclear extension of Google's range of services offered through trial and error has not yielded sustainable revenue options.

Solution to Question 2

Based on this analysis, derive strategic opportunities of action and critical success factors for the management of Google. Name present success factors of Google.

As mentioned earlier, there are four basic strategic opportunities of action according to the SWOT analysis. To begin with, Google can follow SO (strengths-opportunities) strategies, taking advantage of existing opportunities through own strengths. More specifically, it may use the existing service range for revenue differentiation or extend activities in growing markets in order to establish new forms of revenue and extend existing ones. These particularly include mobile business (e.g., Google Nexus, Google Pixel, Google Allo Google Duo), social media (e.g., Google+), Internet of things and automation (e.g., Google Home, acquisition of Nest Labs), augmented and virtual reality (e.g., Google Glass, Google Cardboard), artificial intelligence, machine learning and big data. In addition, Google has also further opportunities through monetizing its broad range of services (especially its content offers).

Google can also pursue ST (strengths-threats) strategies, using its own strengths to avert existing threats. In this connection, it can encounter risks by enhancing and extending the current service spectrum. Moreover, Google can utilize its dominant position in the search engine market and its technological leadership to outperform competitors. It may also focus on core markets to safeguard sustainable market positions.

Furthermore, Google can follow WO (weaknesses-opportunities) strategies, eliminating own weaknesses to take advantage of opportunities. In this context, Google can encounter its weaknesses by exploiting existing revenue potential by streamlining its range of services and monetizing services with no or low revenue. In addition, Google can extend its market leadership in online marketing through market expansion.

Finally, Google can engage in WT (weaknesses-threats) strategies, eliminating own weaknesses to be able to face threats. For the purposes of eliminating own weaknesses, Google can abandon those services that generate no or low revenue and refocus its market offer model. In addition, Google should not only define the revenue purpose of all services to extend its revenue basis, but also expand its online marketing activities even in weak markets in order to prevent being driven completely out of the market by competitors. Figure 11.11 summarizes the strategic options for Google based on a SWOT analysis.

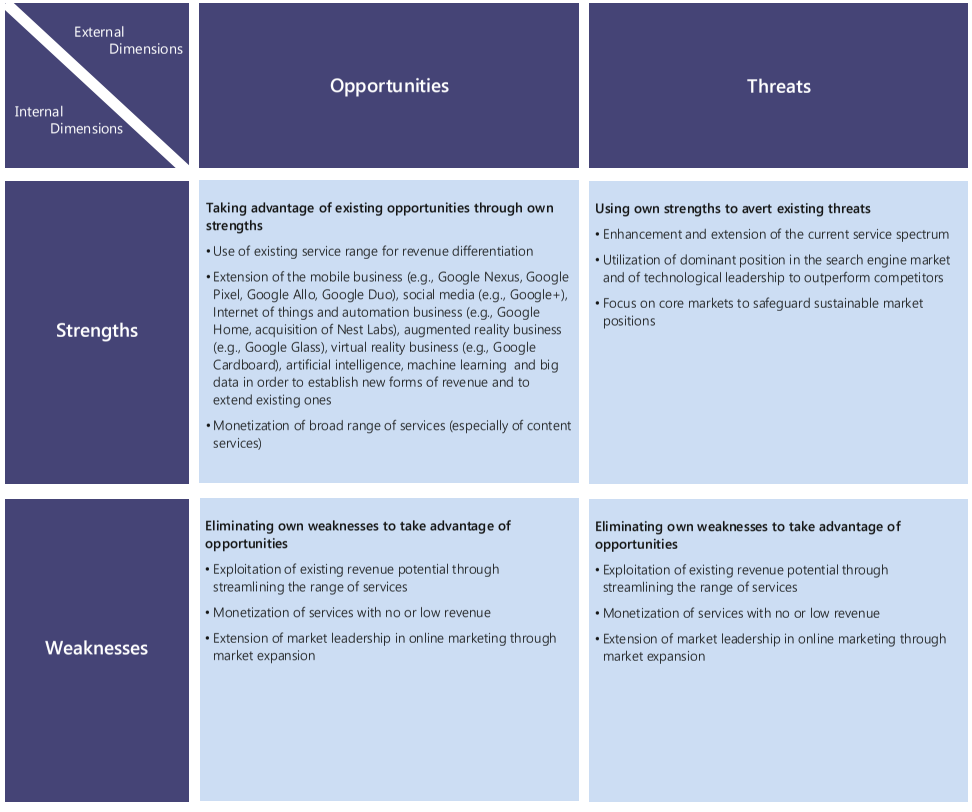

Fig. 11.11 Strategic options for Google based on a SWOT analysis

Beyond these strategic opportunities for action, Google has the following core competencies at its disposal, which at the same time are critical success factors of Google:

- An essential success factor of Google is its technologically cutting-edge search algorithm that is continuously enhanced. Thus, Google's technology competence represents one of its key strengths.
- For a long time and in contrast to other competitors (e.g., Yahoo), Google's business model management has focused its core business on its search engine and search engine marketing. Google's focus competence and business model management competence is another core asset.
- Google created a huge network that generates a major amount of revenue today. Google's ability to manage this diverse portfolio is its networking competence.
- The high diffusion and acceptance of Google's search engine leads to Google's market leadership. With regard to its brand management, this market position allows Google to maintain a unique and differentiated corporate profile. Google has demonstrated its very strong brand management competence.

Solution to Question 3

Reflect upon these potential strategic alternatives and choose the dominant one.

Given Google's dominant position in the online business sector (especially in the advertising market) and its strong position in other markets, the SO strategy seems suitable, as opportunities can be exploited with own strengths. A crucial element of this strategy is revenue differentiation:

- Utilization of the existing service spectrum for revenue differentiation.
- Extension of the mobile, social media, Internet of things and big data segments to establish new revenue flows and extend existing ones.
- Monetization of the broad range of service offers.

Solution to Question 4

Discuss various opportunities for Google to differentiate itself in the context of revenue optimization. Which recommendation for action would you give Google?

Google has a lot of potential for revenue differentiation resulting from various measures that generate revenue. These can be classified according to different revenue categories, comprising direct transaction-dependent, indirect transaction-dependent, direct transaction-independent and indirect transaction-independent revenues. Measures for generating direct transaction-dependent revenue include software sales, hardware offers for the mobile sector (e.g., smartphones or tablets), as well as extending the hardware offers in the server segment and range of payment service offers.

Software sales have a low revenue potential because many products are based on open source and are therefore difficult to realize with the current structure of service offers. In addition, this carries a high risk due to the reduced coverage and negative impact on the core business (advertising). Consequently, software sales are not suitable for revenue differentiation.

Hardware offers for the mobile sector show a very high revenue potential, but also a high risk of losing important network partners and risks with regard to competition law. Overall, this measure for revenue generation appears as highly suitable for revenue generation and differentiation. Extending hardware offers in the server segment has a low to medium revenue potential due to the highly competitive market and its special distribution structures. This measure only carries a medium risk due to Google's high technological competence. Therefore, this measure of revenue generation appears to be moderately suitable for revenue generation and differentiation.

Extending the range of payment service offers has a high revenue potential particularly in the mobile area. Although there is strong competition with providers like PayPal, this measure bears a low risk because Google already has an appropriate infrastructure, making it very highly suitable for revenue generation and differentiation.

Extending the hardware and software offers in the field of Internet of things, automation, artificial intelligence and machine learning has a high revenue potential especially with regard to smart home appliances. There is a low risk due to Google's technological leadership and moderate competition in the market. As a result, this measure is very highly suitable for revenue generation and differentiation.

In addition, extending hardware offers in the field of augmented or virtual reality are characterized by a low to medium revenue potential and a medium risk due to the moderately to highly competitive market environment. Therefore, this measure is only moderately suitable for revenue differentiation.

Moreover, measures for generating indirect transaction-independent revenues include commission fees that Google receives in its role as e-commerce intermediary (e.g., Google Product Search, Google Merchant Center and Google Shopping). Here, Google has a high revenue potential due to its role as a gatekeeper in online shopping, but at the same time a medium to high risk of engaging in competition with current customers. Overall, this measure appears as highly suitable for revenue differentiation.

Furthermore, measures for generating direct transaction-independent revenues comprise price differentiation for licenses of premium products or for business customers, as well as fee-based licenses and letting of server capacities (cloud computing). Price differentiation for licenses of premium products have a low to medium revenue potential, as only few services are suitable for this model. Given that it provides an added benefit, there is a relatively low risk, not least because it is an approved instrument (see Google Earth Plus). However, in view of the formerly free functions such price differentiations also carry a high risk of user churn. Altogether, this measure is moderately suitable for revenue differentiation.

Price differentiation for licenses for business customers has a medium revenue potential because the model is quite established but not suitable for all services. Similarly, there is a medium risk as it is an established model in online business, making it overall a moderately suitable measure for revenue differentiation. Fee-based licenses have a high revenue potential due to the high number of users. Yet, there is not only a very high risk of end user churn and a certain risk of brand

erosion, but also a medium risk in the business sector because here it is already partially established (Google Maps API). Accordingly, this measure is less suitable for revenue differentiation.

The letting of server capacities (cloud computing) has a very high revenue potential for Google, as necessary structures are already established in the emerging market. While this measure is characterized by a medium to high risk in the private customer segment due to competing offers that are free of charge, it only carries a low risk in the business customer segment and thus is very highly suitable for revenue generation and differentiation.

Finally, measures for generating indirect transaction-independent revenues particularly refer to the extension of revenues from data mining and big data analysis (selling user data). Here, Google has a high revenue potential due to its broad portfolio of diverse user data. However, this is also associated with a high risk due to problems of acceptance among users and potential user churn, thus negatively influencing Google's core business. In addition, this also carries legal risks and therefore appears to be only moderately suitable for revenue differentiation. Table 11.1 summarizes various measures of revenue generation and evaluates them in terms of their revenue potential and risk. Due to the great differentiation, not all kinds of advertising revenues are considered.

Table 11.1 Opportunities for differentiation with regard to revenue generation

	Measures for revenue generation	Revenue potential	Risk	Rating
Direct transaction-dependent	Software sales	Low potential because a lot of products are based on open source and therefore difficult to realize with the current structure of service offers	High risk due to reduced coverage and negative impact on core business (advertising market)	○
	Hardware offers for the mobile sector (smartphones, tablets, etc.)	Very high potential (see Apple)	High risk of losing important network partners, risks with regard to competition law	◕
	Extension of the hardware offers in the server segment	Low to medium potential due to highly competitive market and its special distribution structures	Medium risk due to high technology competence	◑
	Extension of the payment service range	High potential, especially in the mobile sector	Low due to existing infrastructure, but strong competition with other providers (e.g., PayPal)	●
	Extension of hardware and software offers in the field of Internet of things, automation, artificial intelligence and machine learning	High potential, especially with regard to smart home appliances	Low due to technological leadership and moderate competition	●
	Extension of hardware offers in the field of augmented or virtual reality (e.g., wearables)	Low to medium potential	Medium risk due to moderate to high competition	◑

(continued)

Table 11.1 (continued)

	Measures for revenue generation	Revenue potential	Risk	Rating
Indirect transaction-dependent	Commission fees as e-commerce intermediary (e.g., through Google Product Search, Google Merchant Center, and Google Shopping)	High potential due to Google's role as gatekeeper in online shopping	Medium to high risk due to competition with current customers	◕
Direct transaction-independent	Price differentiation for licenses (premium products)	Low to medium potential because only few services are suitable for this model	Relatively low risk as long as there is a recognizable added benefit, approved instrument (see Google Earth Plus), high risk of user churn in view of formerly free functions	◑
	Price differentiation for licenses (charged for business customers)	Medium potential because the model is quite established, but not suitable for all services	Medium risk because it is an established model in online business	◑
	License fees	High potential due to high number of users	Very high risk of end user churn, risk of brand erosion, medium risk in the business sector because here it is already partially established (Google Maps API)	◔
	Letting of server capacities (cloud computing)	Very high potential because necessary structures are already established in the emerging market	Medium to high risk in the private customer segment, low risk in the business customer segment	●
Indirect transaction-independent	Extension of revenues from data mining and big data (sale of user data)	High potential due to Google's broad portfolio of diverse user data	High risk due to problems of acceptance among users, resulting in user churn (impact on core business) and legal risks	◑

○ Not suitable ◔ Less suitable ◑ Moderately suitable ◕ Highly suitable ● Very highly suitable