The IT of two speeds - A systematic review of the literature on the concept of bimodal IT

Seminar paper

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Abstract

As the world becomes more and more digital every day companies see the need to change to prepare for digital disruptions, which could become a major threat to them. Especially this affects the internal IT of these companies. In that course the concept of a bimodal IT came up. It splits the IT into two differently working teams. The first team is responsible for the daily business and works traditionally, the second team focuses on new trends and products and works agilely. With this approach, companies aim to strengthen their core IT and at the same time become more digital. This paper will give a systematic review of the discussion that has occurred over the last few years in literature. It will point out advantages as well as disadvantages and show different concepts companies can use to adopt this concept within their businesses.

Keywords: bimodal IT, IT organisation, digital disruption, two-speed, two-tier, mode two

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1 Introduction

In present days companies face a lot of challenges regarding the digital change. Disruptions shake entire industries and lead to large companies such as Kodak, Nokia or Blackberry not being able to survive the digital change. As this is happening faster and faster, companies need to be better prepared for digital disruptions than ever before. Restructuring a company's business to survive in an increasingly digital world is a complex task (Gies, 2017).

There are different approaches to prepare a company for the digital change. Thereby it is necessary to consider the growing importance of the internal IT (The New York Times, 2017). Since the company's IT is no longer just a separate department but is significantly involved in almost every step of the company's value creation. Therefore, the IT takes a special position within the departments (Pütter, 2018) (Horváth & Partners, 2018).

This paper will focus on a specific approach of organising the IT: the concept of bimodal IT organisation.

The idea of this concept is that the IT of an organisation is split up into two different teams, each working with a different method. The first team works like the "traditional IT" - sometimes referred to as *mode 1 IT*. It focuses on the daily work and ensures that the entire system needed runs reliably. The second team - sometimes referred to as *mode 2 IT* – works agilely and takes care of the immediate needs of the company. It is always prepared to adapt the always changing IT landscape. It works very quickly to get the new product to the customer even when the product is not perfect already. Therefore, this concept is often described as *two speed IT*. By fast adapting to and surviving digital disruptions and strengthening the long-term functionality of their daily business the companies aim to be well prepared for the digital change (Burke, 2015).

1.1 Relevance and aim of the paper

The term *bimodal IT* was primarily coined from the global research and advisory firm Gartner in 2014 (Gartner, 2014). According to them, CIOs face different eras of enterprise IT during the time. Back in 2014 they identified three different eras. The *IT Craftmanship*, the *IT Industrialisation*, and the *Digitalisation*.

The first era focussed on technology and needed capabilities of programming and system management. The output was sporadic automation and innovation. The second era needed special skills in IT and service management to focus on the processes and to gain efficient and effective services and solutions. The last and third era focused on business models to create digital business innovations and new types of value. For that capabilities in digital leadership were necessary.

In 2014 Gartner claimed that the present situation was located between the second and third era.

According to their research there were three main areas leading businesses, governments and public-sector agencies need to prepare for to achieve the transition from the second to the third era: creating a powerful digital leadership, renovating the core of IT, and especially building bimodal capabilities.

Therefore, the concept of bimodal IT organisation seems to be an essential part of the development of the firms within the digital change. It could help the CIOs to deal with speed, innovation and uncertainty which will very likely occur over the time of the company's development.

Since then the global interest in this topic has increased, which the *Google Trend* analysis of the Search Term *bimodal IT* shows (see appendix 1.). Even though the highest peak was between September 2015 and September 2016 it is still a relevant and often searched topic. In addition, according to Gartner's *CIO Agenda Report* already 68% of the top performers have adopted bimodal IT in 2017 (Gartner, 2017).

This paper will focus on the most important literature on this topic and will give a systematic review on this concept.

1.2 Research question and structure of the paper

As this paper is intended to give a systematic overview of the concept of bimodal IT it should clarify which advantages and disadvantages this concept has and which added value bimodal IT offers to the users. Therefore, my research question is: What impact does the concept of bimodal IT has on the organisation of IT in a company? To find an answer to this question this paper is structured as followed.

First, I will present the literature review. This includes the procedure of finding the relevant literature as well as an overview of the papers' key messages and recommendations. I did this to provide a short but meaningful summary for everybody who wants to get into this topic quickly without reading every paper in detail. Second, I will show the results I have found. There I will show how bimodal IT is discussed in the literature and give a deeper understanding of this concept. Third, I will point out the added value for IT management as well as the limitations of this paper. Fourth and finally I will give a short conclusion.

2 Literature Review

In this part I will present the process of identifying the relevant literature for this paper as well as the results of this search. In the beginning, I will explain which databases and search terms I used and how I got the final selection of publications. After that, I will give a tabular display of these findings and give a short overview of their content.

2.1 The process of research

As a first step, I selected the databases I wanted to use for this paper. Due to their relevance and the possibility of getting access to them, I have decided to use the following databases: EBSCOhost, ABI/INFORM Collection, LexisNexis, Web of Science and wiso Wirtschaftswissenschaften. In addition to them, I used the Google Scolar Search.

As a second step, I identified the relevant search terms. To determine the different search terms was an evolving process. In the beginning, I started using the whole term "bi (-) modal IT organisation" realising that the word "organisation" is not used very often in combination with "bi (-) modal IT". Furthermore, the different spelling of this word in the British and the American English and the hyphen complicated the search process. That is why I have decided to use just "bimodal IT" and the German version "bimodale IT". As I started to search the databases, I found additional search words while looking through the literature. Therefore, I included the terms "two speed IT", "two tier IT", and "mode two IT" into my search.

As a third and final step, I read the selected literature in detail and allocated them into different groups by their point of view on bimodal IT. However, this allocation includes a few overlaps. Detailed results of this process will be presented in the following chapter.

2.2 Identified literature

The following table shows the used search terms and the number of publications found in the different databases. The number does not refer to the total number of entries found, but only to relevant literature whose heading or abstract contains the search term and has clearly something to do with the topic.

Database / **Search Term**	EBSCO-host	ABI/ INFORM Collection	Lexis-Nexis	Web of Science	wiso Wirtschafts-wissenschaften	Google Scolar
bimodal IT	8	9	24	0	2	3
bimodale IT	0	0	19	0	0	0

two tier IT	1	0	0	0	0	0
mode two IT	0	0	0	0	0	0
two speed IT	2	2	4	0	1	0
Total (75)	11	11	47	0	3	3

Table 1 found literature by search terms and database

After reading the publications in detail I removed all duplicates and not relevant literature. The number of all remaining literature went down to 60 in total. The following tables shows all publications left grouped by their type and year.

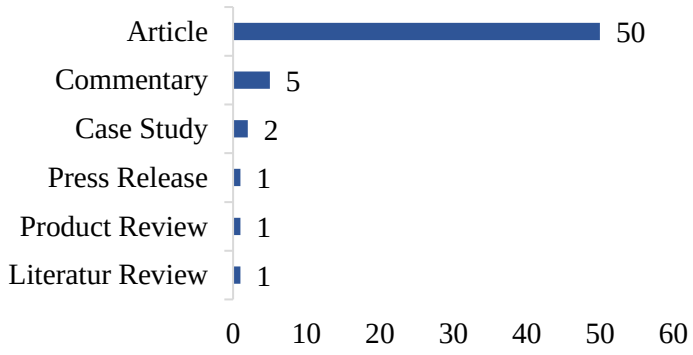


Figure 1 number of identified publications by their type

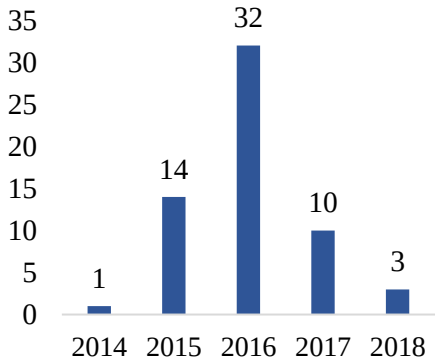


Figure 2 number of publications by year

It is clear to see, that most publications are articles (50) followed by five commentaries and two case studies. Furthermore, literature has been published the most in 2016. It seems to be the peak of the discussion on bimodal IT, which matches the *Google Trend* mentioned in chapter *1.1 Relevance and aim of the paper*. Overall, approximately one third (29 out of 60 papers) of the publications have a critical point of view and two thirds (41 out of 60 papers) have a supportive point of view on this concept. In the first two years most literature had a positive point of view whereas the number of critical papers raised in 2016. Then the ratio of the positive to the negative view decreases just a little bit over the next two years.

The following table presents the most relevant literature out of the 60 papers and gives a brief overview of their content and point of view on the concept of bimodal IT. The table is sorted by year of publication and then alphabetically by the author's surname. The entry in "view" shows if the publication's overall point of view is pro (Pro) or contra (Con) the concept of a bimodal IT.

Author	**Year**	**View**	**Key message**	**Recommendation**	**Type**
Pütter, C.	2018	Pro	Discussion of a study about the current state of the digitalisation in companies and their experience using bimodal IT to face the challenges digital disruption causes	Implement the bimodal IT individually for the company by using the eight steps provided by the article	Article
Boulton, C.	2017	Con	Bimodal IT is antiquated; Only the mode 2 is capable of surviving in the long term; Because CIOs have to get an innovative mindset to operate more as product developers rather than order takers	Firms should establish just a version of the second mode with the help of agility and DevOps.	Article

Haffke, I., Kalgovas, B. & Benlian, A.	2017	Pro	Revealed three reasons why firms use bimodal IT, four archetypes of bimodal IT and gives guidelines for transforming the IT function	Suggests switching between these archetypes to develop the IT function even when this means to end up with a "beyond bimodal IT" state	Case Study (Journal Article)
Horlach, B., Drews, P., Ingrid, S. & Tilo, B.	2017	Pro	Identified five different types of bimodal IT by interviewing nine companies in one country; Sees bimodal IT as an unavoidable way towards digital business transformation, which mainly focuses on the IT not the whole company	Suggests further research on best practices and contingency factors that encourage or discourage alignment within the IT function and in relation to the business	Case Study (Conference Paper)
Loten, A.	2017	Pro	Discussion of a study about adopting bimodal IT in firms. Manufacturers are most likely to recruit bimodal IT workers. Followed by energy, oil, gas utilities, and retailers. Healthcare firms are standing last	It appears that there is a negative correlation between the number of full-timer workers and the investment of IT leadership in innovative IT approaches to automate processes and make their systems more agile	Article
Purcell, P.	2017	Pro	Provides a detailed definition of bimodal IT	Implementing bimodal IT in companies with the help of the provided five steps	Article
Reese, L.	2017 (July)	Con	Strict bimodal IT can cause big problems between both teams, which can cost the company a lot of money	Providing a five-step-alternative to bimodal IT (1/2)	Article
Reese, L.	2017 (Dez)	Con	Continuation	Providing a five-step-alternative to bimodal IT (2/2)	Article
UBM	2017	Pro	Shows the results of a research with 247 interview partners (IT decision-makers at large enterprises). The provided infographic shows the current efforts and future plans the companies have regarding bimodal IT; 75% mode 1 and 66% mode 2 adoption		Article (+Infographic)
Boulton, C.	2016	Con	Bimodal IT impedes the company to get a customer-focused orientation, which is essential to survive digital disruption. It would encourage a situation where both teams work against each other; The mode 1 would become unattractive for employees	The IT and in long term the hole business must transform as a unit and not separately in two teams	Article

Campbell, M. A	2016	Con	The approach of agility vs. stability is not new and goes back to the early days of IT; Presents four major negative consequences when using bimodal IT	Companies should put "true innovation" (and not rigid bimodal IT recommendations) at the core of their business using every technique which helps them to meet their customers' needs	Commentary
Donnelly, C.	2016	Con	Bimodal IT lengthens the digital transformation of a company; Primarily because of the different treatment of the two modes due to different investment and development opportunities	Instead of two separate IT departments companies should establish multi-discipline teams featuring a mix of mode one and mode two IT workers as well as individuals from other operative or administrative teams	Article
Horlach, B., Drews, P. & Schirmer, I.	2016	Pro	Discuss many publications regarding bimodal IT	Request more research on this concept since there is less research with an academic background	Literature Review
Nowobilska, A. & Joebges, A.	2016	Pro	Explain the structure of a company's architecture for bimodal IT using Axel Springer as an example		Article
Paredes, D.	2016	Pro	Project management offices (PMOs) must evolve to support technological changes; For example, by ensure that bimodal IT is implementable in the company	PMOs should be established more in firms	Article
Taft, D. K.	2016	Pro	Offers brief information on five tools for managing bimodal enterprise IT		Product Review
Vaske, H.	2016	Con	Discussion of *Forrester's*[1] critical statement regarding bimodal IT; Points out four riskiest consequences for firms using this concept; The three main changes which firms need to do are: using an uncompromising customer-centric approach, reorganising supply chains and to realising that in the future added value will be created in networks	Recommends an integrated approach without two different teams to focus on the customers' needs and to meet them; suggests using *DevOps* to support this process	Article

[1] *Forrester Research* is a market research company and a big competitor of *Gartner*

Weilhart, T.	2016	Pro	Points out the importance of IT governance in the process of adopting bimodal IT; Provides a structured catalogue of recommendations	IT governance must be adapted without changing regulatory or legal requirements such as risk management etc.	Article
White, S. K.	2016	Con	Critical discussion about *Gartner's* bimodal IT and *Forrester's* business technology; Both approaches are not made for the long term	Firms must see the growing involvement of technology in every industry and department. Digitalisation affects every department and they have to work together	Article
Bloomberg, J	2015	Con	The separation of both modes leads to a situation where employees do not want to work in the still very important but "boring" mode 1; This would cause a knowledge bottleneck, which can become a major threat to the company's core IT	Both modes must work together to achieve the end-to-end digital transformation objectives of the enterprise	Article
Burke, P. K.	2015	Pro	Bimodal IT – former two-speed IT – is essential for reacting quickly to customer needs while also ensuring the long-term viability of the company		Commentary
Hurley, C.	2015	Pro	Claims that bimodal IT would have four major advantages: (1) Better hires (2) Higher retention (3) Empowering innovation (4) Faster alignment-to-objectives		Article
Pechardscheck, S., Wagner, C. & Scharnetzke, M.	2015	Pro	Provide a detailed course of action to implement the concept of bimodal IT in a company		Article

Table 2 most relevant literature by year and author's surname

3 Results

In this chapter I will present my findings in detail. Firstly, I will give a more precise explanation of the concept of bimodal IT in order to build a basis to contrast theoretical advantages with practical advantages revealed with the help of a research study. Secondly, I will present different concepts of bimodal IT. There are varying ways companies establish bimodal IT in their business, which could be seen as different stages. In contrast to this I will discuss several disadvantages and risks which may occur in companies when following a bimodal IT concept.

3.1 Bimodal IT: Definition and reasons for adoption

In the centre of the bimodal IT stands the separation of the IT function into two different groups. The traditional *mode 1* focuses on reliability and performance. This team ensures that applications that run the business work without major problems. Their main objectives are managing the costs and guaranteeing the properly working function of the business. In contrast to this the exploratory *mode 2* works nonlinear, agile and fast. This team focuses on new consumer-oriented applications and takes on higher risks. Their main objective is not reducing costs but being innovative and - in case of failure - failing fast and try again. (Hurley, 2015) (Purcell, 2017). The advantages firms hope for are especially the following five.

First, the specification to one of the two modes could help to better hire candidates with the right characteristics and qualifications for their specific team.

Second, the candidates can also choose for which mode they want to apply for. This could help their characteristics to better meet the requirements. For example, an employee, who is more comfortable taking risks will be happier to work in *mode 2* than in *mode 1*. This would lead to a higher overall happiness for the employee and in long term to less stuff turnover. Moreover, the contribution of the employee to the business could be maximised.

Third, the two modes would neither waste time convincing each other that their often-contradictory objectives are important, nor do they have to find compromises (Hurley, 2015).

Forth, the *mode 2* would allow the CIO to drive a trail-and-error approach within the agile IT without sacrificing essential systems for new ones.

Last and fifth, this concept could help older, lager firms to face digitalisation's challenges without giving up the traditional IT at once. These companies could not switch from the traditional IT to an agile IT from one day to another. The bimodal IT could help to enable the transition between these two stages in an orderly manner (Purcell, 2017).

In contrast to this, the authors of a study published in 2017 (Haffke, et al., 2017) discussed with business and IT executives from 19 large or very large European companies across different industries to reveal the practical advantages companies experienced using bimodal IT. According to their research there are three main reasons why companies decide to adopt the concept of bimodal IT.

Reason one is that companies face high internal and external pressure to develop digital business solutions. On the one hand, introducing an agilely working team can help the company to react quickly to new developments. On the other hand, this team can focus on the increasing involvement of the IT department in customer-facing digitisation projects where agility is necessary instead of taking care of the extensive day-to-day business.

The second reason is the company's need for IT explorative capabilities. As digital transformation is not so often about optimising costs and implementing incremental IT improvements but more about exploring innovative use of IT the bimodal IT can be very useful. By using methodologies that encourage experimentations, a culture that accepts failure, and an innovative mindset it can help creating the right environment for IT exploration.

The third and last reason is that the digital transformation can lead firms to reorganise their way of doing business. As this affects the IT very often, it has to develop itself as well. Thus, structural alignment with the business is an additional reason for using two differently working IT teams like the concept of bimodal IT suggests.

In conclusion, the comparison of theory and practise shows that the implementation of bimodal IT focuses on two essential advantages: On the one hand, it helps the company to remain competitive in a fast-changing environment by creating a trail-and-error culture. On the other hand, bimodal IT helps the firm's IT to gradually move from traditional to agile working.

3.2 Different Concepts

The study mentioned in the previous chapter (Haffke, et al., 2017) also revealed four different archetypes of bimodal IT with different levels of structural separation between the traditional *mode 1* and the agile *mode 2*. The following chart shows these four types the authors identified in the examined companies.

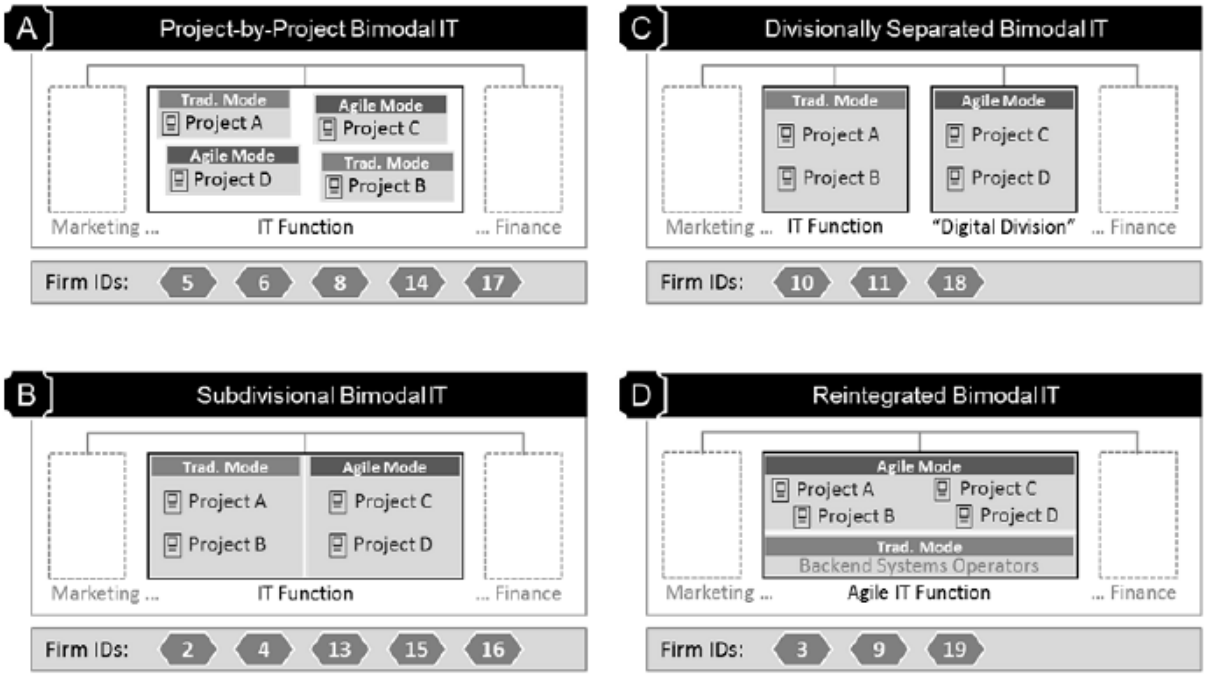


Figure 3 Depiction of the four archetypes of bimodal IT

Using the *Project-by-Project* Type (A) every new team first must decide whether to work in the traditional or the agile mode. This should be especially appropriate for firms, which reluctantly adapt to major changes. Instead of introducing the new agile more all at once they can do it step by step. According to a study discussed by Pütter (Pütter, 2018) most CIOs indicate, that they use this model of bimodal IT.

The *Subdivisional* Type (B) is often used by firms who have a strict separation of the two IT modes due to different capabilities of the employees. Especially the agile IT requires a different employee skill set than the traditional IT and that is why the companies separate those teams. Furthermore, it is possible to spend a suitable amount of money on one mode regardless of the other mode.

An even higher level of bimodality is the *Divisionally Separated* Type (C), which is less used by firms. This type suits companies which need to reorganise their IT because they have fallen behind their increasingly digital competitors. By adopting this concept, they can send a message both internally and externally that they intend to change. Often the agile mode is named as the "digital division" and is let by a chief digital officer (CDO).

The last archetype is the *Reintegrated* Type (D). This is often used as an evolution of one of the other types. By using the Reintegrated Bimodal IT, the department focusses more and more on the agile part and their successes. Furthermore, increasing outsourcing and implementation of best practises in the traditional IT enables the firm to switch IT resources from the traditional to the agile IT.

These four archetypes primarily differentiate from each other in two ways. On the one hand, the extent of internal disruption caused by the bimodal split. On the other hand, the level of cultural divide regarding the management of IT resources, the IT- and the business-orientation as well as the two modes.

Another case study, which was additionally published in 2017, even differentiates between five different types of bimodal IT (Horlach, et al., 2017). They are similar to the four types mentioned previously but vary in one mayor point. The study points out the possibility of outsourcing parts of the IT. This would help the company to solve both modes' problems without impeding each other. In addition, the company

would get necessary competence from the external provider they do not have in their own staff. However, this study is based on only nine different firms in only one country. It can therefore be assumed that these results are not as meaningful as those of the first study. Thus, I will not explain the different types (see appendix 2) in depth in this paper.

3.3 Disadvantages and risks of a bimodal IT organisation

As shown in the previous paragraphs there are many advantages for a company to reconstruct its IT and to adapt the concept of a bimodal IT. And that is why for example *Ford* - as one of the biggest automobile manufacturers worldwide - set up bimodal IT processes as well in 2015. As they recognise that more and more customers do not see a need for owning or even driving a car to get from A to B, they face a big challenge regarding digital disruption. As a result of this they see a need to change and position themselves as a technology-led company which embraces transportation and not cars in particular. Under the new CIO *Marcy Klevorn* they established an additional group of employees which is working on new and emerging topics. In the course of which many changes were made for example the introduction of daily stand-up meetings. Moreover, they adopted a more collaborative work environment in their IT using *paired programming*. This means that two software developers work side-by-side when writing an application (Boulton, 2016) (ICT Monitor Worldwide, 2015). Thus, Ford considers bimodal IT to be the solution to the threat of digital change.

Nevertheless, the concept of a bimodal IT hides also various risks and is often criticised. The main criticism in an article by the business magazine *Forbes* is the strict separation between the two modes (Bloomberg, 2015). This would not be practical as both modes always to some extend dependent on each other. Furthermore, this would lead to a situation in which the teams and their tasks would also be seen, as differently attractive for employees. If *mode 1* is only given maintenance tasks, it is feared that new, young, and well-educated employees will no longer want to work in this field as they fear that they would not be able to achieve much in this team. Therefore, they will be discouraged to work in that field and the knowledge will get lost in the long term.

For example, providers of mainframe tools have the problem that new employees no longer want to work on mainframes but prefer to focus on newer topics. The problem here is that mainframes are still the decisive technology for large companies and will therefore continue to require a lot of expertise in the future.

Four additional consequences are pointed out in an article from *CIO Insight* (Campbell, 2016). The first is the creation of artificial silos for products, processes and people. This would be a great threat to the IT since the negative impact of the “functional silo syndrome” was proven by many studies in the past decades. The second consequence is the stagnation of *mode 1*, similar to the arguments in the previous paragraph. The rigidity of *mode 2* is the third mentioned risk. The author claims, that *Gartner’s* proposed procedure for *mode 2* is less goal-oriented than it looks at first glance. The fourth and last consequence is that bimodal IT would impede the development of *mode 1* applications into more agile *mode 2* products and the other way around that *mode 2* offerings would not be developed into stable back-end offerings.

Moreover, bimodal IT can lead to a situation where the two teams work against each other. In the competition for resources, capabilities and above all for the company's attention (Boulton, 2016). At the same time different cultures will evolve and over time the gap between these two ITs will become bigger and bigger, which will cause problems within the department (Haffke, et al., 2017) (Boulton, 2017).

Therefore, several publications (Donnelly, 2016) (Campbell, 2016) (Reese, 2017) demand not to focus on the division of these two ITs but on building up a whole innovative IT department with employees from both traditional and agile teams using suitable techniques for individual situations. It would be right to address IT service and IT technologies differently but not in a way, that both teams start to work against each other. One possibility would be to prevent this with the help of *DevOps*. This could expand the frequently demanded customer focus, minimise risks and increase agility. A competitive advantage is expected from this in the long term (Bruno, 2017) (Vaske, 2016). Moreover, firms have to realise that the IT is not solely responsible for driving the firm's digital change. Companies must see the growing

involvement of technology in every industry and department. So, product development, e-commerce, customer experience etc. have to work together to prevent the company to get lost in the digitalisation (White, 2016).

4 Discussion

As shown previously the found literature are mostly consists of Articles with a relatively large share of the magazine *CIO*. Thus, this paper does not focus so much on research, but more on the experiences and opinions of experts and journalists. Therefore, I cannot give an explicit advice for or against bimodal IT. Over the last years it has been a constant discussion with supporters and opponents. This also explains why there are big differences between the statements concerning bimodal IT in the found literature. Within a group, however, the authors usually agree with each other.

4.1 Added value for IT management

The papers pointed out many different arguments for or against bimodal IT. For the IT management or the CIO of a specific company it could be difficult to identify the right way. But reviewing the literature globally a few key points can be recognised.

Bimodal IT seems to be a concept which is well adopted across different industries which suggests that this is a good way to face the digitalisation. Nevertheless, not all firms implemented it in full yet. According to a survey conducted by *UBM* about 75% of all 247 IT decision-makers at large enterprises, which were interviewed, indicated that they are primarily in *mode 1*. In contrast to this only about 66% of all firms declared to be half or more in *mode 2* within the next five years (UBM, 2017). So, adopting bimodal IT usually is a journey. However, more and more providers offer solutions to support the bimodal IT. For example, the partnership between *Atos* (a leading international provider of digital services) and *Outsystems* (a leading provider of low-code application development services) provides customers to speed up their application delivery rapidly, which can be very useful for the agile working IT (Atos, 2017).

In addition to all this, the management must not forget about the IT governance. The IT governance is an essential point of view to build up the right environment for the new IT process and working practises (Weilhart, 2016). Therefore, IT governance must be clarified in advance in order to avoid conflicts within the IT. Now, the definition of IT governance between IT and business must be expanded within the IT between *mode 1* and *mode 2* (Laitenberger, 2016).

Moreover, the IT management must be aware of all the risks previously mentioned in chapter *3.3 Disadvantages and risks of a bimodal IT organisation* of this paper. The employees are one of the most important factors driving the company's change and one of the riskiest as well. In addition, the IT manager itself has to develop new skills, such as recognising innovations, having transformation and change competencies, and being able to mediate between employees in different modes (Wartenberg, 2016). Therefore, adopting bimodal IT is a long and complex way. Especially in Germany companies struggle implementing the concept. According to a study published in 2017, CIOs in Germany are less strategic compare to the rest of the world, they neglect bimodal IT and rarely position themselves as allies of the CEO (Pütter, 2016).

4.2 Limitations and further research

This paper is primarily limited by the amount of literature used. My research focuses on literature in only two languages: English and German. Moreover, due to the possibility to get access to databases I chose just a selection of databases and additionally neglected non-digital literature like books. Finally, I limited my research to papers, which are not older than 2014 because in my estimation the main discussion about this topic took place in 2016. All this reduced the amount of possible relevant literature.

For further research I recommend a more detailed examination of the implementation of a bimodal IT in companies. Since case studies regarding this topic are very scarce right now this could be a valuable

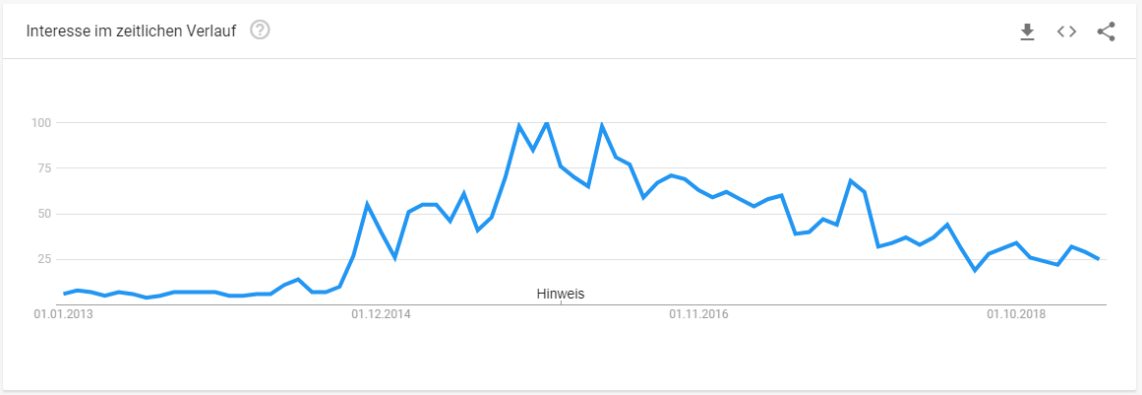
contribution to the discussion. Furthermore, best practises for the adoption should be exposed and published to improve the support for firms using this concept. Lastly, there should be more research into whether there are better alternatives for bimodal IT since the discussion over the last few years revealed many disadvantages of bimodal IT.

5 Conclusion

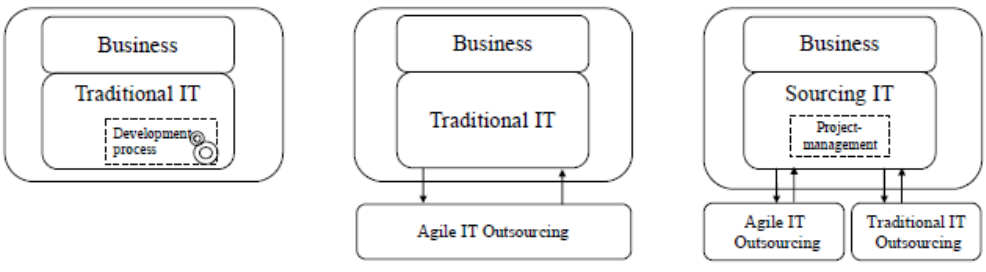
All in all, bimodal IT seems to be one suitable way to face the digitalisation and to prepare the company for digital disruptions. Nevertheless, this concept hides many risks, which may occur when working bimodal. IT governance and digital leadership skills are key factors to set up a framework that allocate resources and eliminate conflicts effectively. Companies should see the adoption as different stages towards a more digital and customer-oriented company. In the long term this journey goes beyond bimodal IT towards a new company-specific concept.

6 Appendix

1. **Google Search Trend** (Search Term (worldwide): bimodal IT; Period: 01.01.2013 to 27.04.2019; from: https://trends.google.de/trends/?geo=DE)



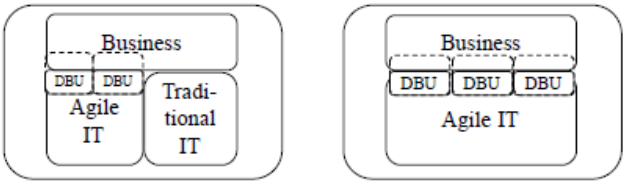
2. **Five identified bimodal IT types** (Horlach, et al., 2017)



4.1 Traditional IT with bimodal development

4.2 Traditional IT with agile IT outsourcing

4.3 Bimodal sourcing IT with or without project management



4.4 Bimodal IT with or without digital business units

4.5 Agile IT with or without digital business units

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