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# Opportunities and threats when using ServiceNow as an ITIL tool

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# Contents

# Abbreviations

CAB ........... Change Advisory Board

CI ............. Configuration Item

CMDB ........ Configuration Management Database

IT ............. Information Technology

ITIL, ITIL4 .... Abbreviation; Used to be Information Technology Infrastructure Library until ITIL3

ITSM ......... Information Technology Service Management

SaaS .......... Software as a Service

SNOW ........ ServiceNow

SVS ........... Service Value System

SWOT analysis . Strengths, Weaknesses, Threats & Opportunities analysis

# List of Figures

# 1 Introduction

## 1.1 Problem Statement

In the recent years the technologies that were adopted the most changed, IT however, stayed on top for a lot of years. It is currently number one of the most important technologies for 2021 and therefore, most companies try to adopt it as it gets more and more complicated to provide services without any assistance of IT services or products.[1] As a logical consequence almost all companies face the challenge to implement IT services and to provide a suitable service offering with them, this especially affects small and medium sized companies. Large companies however, do not face challenges with implementing, but with continuously improving their service offering. For companies the ITIL framework covers multiple IT practices which fulfills most of the use cases for IT in the business environment. Hence, companies searching for ITIL tools will find ServiceNow as a product and tool for implementation of the ITIL framework. For medium and large companies the question comes up whether this tool is suitable for their complex and unique business processes that are already in place. It both needs a deep feature set as well as customisable processes, views and data sets.

## 1.2 Objectives

Whether ServiceNow is a suitable product for implementing the ITIL4 framework is topic of this seminar paper. The focus here lies on the implementation of ITIL4 models inside ServiceNow by taking the four dimensions model as an example. The focus is on the organisation & people dimension as well as the value streams & processes dimension. Furthermore, it should be evaluated whether the 34 practices of ITIL4 are well suited for companies by taking change enablement from the service management practices as an example and comparing it to the change management inside ServiceNow. At last one additional objective is to find out what limits there are for ServiceNow to cover the four dimensions model, especially in regards to the organisations and people dimension. Concluding the mentioned aspects, this seminar paper will try to answer the following research questions:

1. How is the ITIL Four Dimensions model implemented in ServiceNow with the focus on value streams and processes?

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[1]cf. Szmigiera, 2021.

2. Is the implementation of the Service Management practices in ServiceNow well suited for companies by taking change enablement as example?

3. What are the limits of ServiceNow when it comes to fulfilling the ITIL4 four dimensions model with the focus on the organisations and people dimension?

## 1.3 Approach

In order to find a scientific answer to the research questions mentioned in the objectives, the fundamentals of the ITIL framework will be pointed out covering two of the four dimensions from the ITIL four dimensions model. The dimensions that will be worked out in greater detail to answer the research questions properly are the organisations and people dimension[2] as well as the value streams and processes dimension[3]. After the ITIL fundamentals have been highlighted, a closer look will be taken at ServiceNow by covering the basic information in regards to the tool, furthermore, a deeper look will be taken at the way of implementation of the service management practices by working out how the default change management inside ServiceNow is organised. With those fundamentals outlined and explained, a SWOT analysis will be conducted in which ServiceNow and ITIL will be analysed to find out their characteristics. This will be done separately inside the strengths and weaknesses and consolidated for the opportunities and threats. After the SWOT analysis a consolidation of the results will be made where the most important results will be highlighted out. After this consolidation, the necessary research for answering the research questions is fulfilled. Therefore, a final conclusion for the seminar paper is taken with the focus on answering each research questions with the results from the SWOT analysis.

## 2 Foundations

## 2.1 ITIL4

The ITIL framework was known as the Information Technology Infrastructure Library until the third version of ITIL. Since the fourth iteration of ITIL was released the term ITIL is no longer an abbreviation, it is an acronym as with version four

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[2]cf. Axelos and Office, 2019, p. 25f.
[3]cf. Axelos and Office, 2019, p. 31ff.

the scope changed from being an infrastructure library to being a framework for addressing value streams, customer experience and moreover, digital transformation for any kind of organisation.[4] The goal of ITIL is to assist organisations to meet the challenges imposed by the new technologies especially for the new IT enabled digital services.[5] ITIL4 consists of two key components needed to fulfill the frameworks goal, those components are the service value system and the four dimensions model. ITIL4 uses a lot of terms that are important to know in order to evaluate and understand all models and goals of ITIL. As ITIL is very focused on value, it is very important to clarify the term. Value is defined by "perceived benefits, usefulness, and importance of something"[6]. The key message is that every organisation's goal is to create value either for itself or for other stakeholders. An organisation is a collection of resources, especially people that have their own purpose with dedicated responsibilities, authorities and relationships internally as well as externally that are all needed in order to achieve the goals and objectives of an organisation. An organisation itself is not defined by size or complexity. ITIL takes into consideration how services are provided and consumed. Therefore, we have organisations or parts of it which are able to provide a service to service consumers. Such a service consumer can be inside the organisation or outside of it. As service consumer is a generic role for simplification, in the reality this role is split up into three sub-roles:

1. Customer: The customer role is responsible for defining requirements needed for the service to be consumed and furthermore, takes the responsibility for the outcomes of the service consumption.

2. User: The user role is taken by the person using the service that is provided.

3. Sponsor: The sponsor role provides the budget for the service consumption and has to authorize the use of the budget.

Even though ITIL separates the service consumer into three sub-roles, it is often the case that one person takes the ownership of two or three of them. Service providers and service consumers are two of the main stakeholders, there are however other stakeholders like shareholders, the society and many more.[7]

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[4]cf. Axelos and Office, 2019, p. 2.

[5]cf. Kempter, 2019.

[6]Axelos and Office, 2019, p. 7.

[7]cf. Axelos and Office, 2019, p. 9 ff.
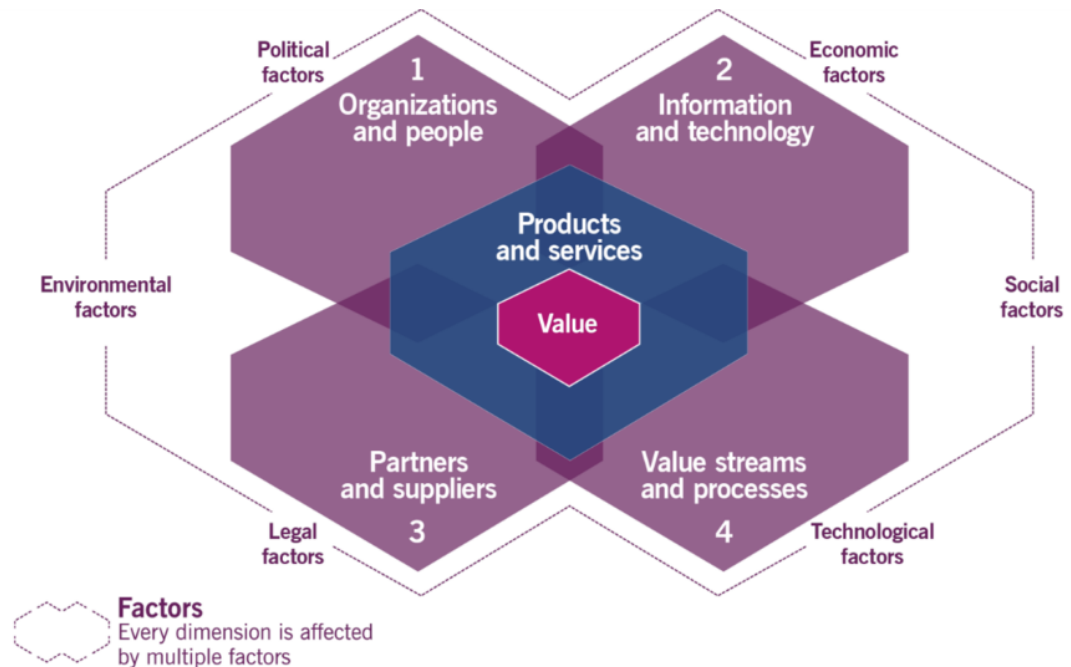
## Four Dimensions Model



Figure 1: ITIL4 Four Dimensions Model[8]

The four dimensions model of service management focuses on value which organisations achieve by providing products and services, this is the reason for the centered placement of products and services inside the model. The production and provision of products and services and therefore, value is based on four dimensions starting at the organizations and people, followed by the information and technology. In addition to those 2 dimensions are the value streams and processes as well as the partners and suppliers.[9] Beside the four dimensions, the model goes one step further and includes external factors according to the PESTLE analysis strategy[10] which helps organisations to analyse their interaction with the external environment.[11]

The four dimensions model is an extension to existing ITIL3 models as it not only includes processes, but also technologies, information, data management and culture and others which enables the four dimensions model to act as a holistic model for companies all around the world. According to the approach, two of the four dimensions will now be taken into a more detailed description.[12]

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[8]Andenmatten, 2019.

[9]cf. Axelos and Office, 2019, p. 24.

[10]Rastogi and Trivedi, 2016.

[11]cf. Taipalus, 2020, p. 29.

[12]cf. Reiter and Miklosik, 2020, p. 9.

Organisations and people:

One of the key driving factors for the success of organisations are people. Therefore, it is highly relevant to motivate the staff to be innovative and creative to face the rising levels of world wide innovation.[13] In addition people inside an organisation have the responsibility to drive the value creation which also brings up the needs of an flexible structure and role system inside the organisation.[14] For this matter, the organisations and people dimension of ITIL focuses on the structure and role systems inside organisations and hence, the authority parties and responsibility as well as the communication. The goal of this dimension is to support the overall strategy and operating model.[15]

Every person inside the organisation should have a common conception of the goals and strategy of their workplace so that they know their part and contribution to the holistic success. As every person should be aware of their contribution, this policy applies to all stakeholders such as employees, customers, suppliers and every other stakeholder. Hereby, the focus should not only be on skills and competence, but also the leadership style and team-working abilities as the success in large companies is mostly driven by collaboration.[16]

Value streams and processes:

The value streams and processes dimension[17] of ITIL4 is comparable to a supply chain except that it is focusing not only on products, but also services. The stakeholders are also not outside of the organisation which means that a value stream according to ITIL4 is an internal stream: "A series of steps an organisation undertakes to create and deliver products and services to consumers"[18]

An organisation often has more than one value stream involved therefore, it is of importance to separate them and show dependencies to have a streamlined picture of what the organisation is delivering and in what way. This is also highly relevant to fulfill the continual improvement aspect as it easier to identify improvement potential which leads to tidied up streams. As ITIL4 states, wasteful activities should be eliminated in order for productivity to rise.[19]

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[13]cf. Bello, 2020, p. 1f.

[14]cf. Patterson et al., 2009, p. 11, p. 17ff., p. 23.

[15]cf. Axelos and Office, 2019, p. 26.

[16]cf. Steinmo and Rasmussen, 2018, p. 1972.

[17]cf. Axelos and Office, 2019, p. 31.

[18]Axelos and Office, 2019, p. 32.

[19]cf. Axelos and Office, 2019, p. 32.

In order for value streams to work properly and to show the internal links between them, processes need to be defined. A process in ITIL4 is defined by the transformation of one or more inputs into one output by a set of activities that are interrelating or interacting in a structured way. Hence, a process is a sequence of actions and their dependencies.[20]

## 2.2 ServiceNow

ServiceNow is both a company, but also a product related term. The company ServiceNow was founded in 2004 by Fred Luddy with the vision "to build a cloud-based platform that would enable [...] to route work effectively [...]"[21]. ServiceNow provides multiple software as a service(SaaS) solutions as a cloud model with the target of automating and standardising business processes for enterprises and organisations. It focuses on the tool based integration of these processes inside the whole organisation.[22]

The product related term ServiceNow can be understood as a big framework in which you can add multiple product categories for example IT workflows like the 'IT Service Management' sub-product. The 'IT Service Management' sub-product includes multiple ITSM practices like incident management, problem management and a lot of additional features.[23] Before stepping inside the ITSM module, a few features of the ServiceNow SaaS are important to mention. The SaaS solutions of ServiceNow provide a very strict separation of the platform the product is hosted on and the application layer, this allows companies to adapt quickly to new versions of the product, even for big releases. For companies, especially large ones, the wide range of process and technical documentations will help to understand the tool based possibilities and hence, it improves the quality for the users if custom processes wanted to be designed.[24]

### ITSM Implementation

ServiceNow's ITSM product has three offers: 'ITSM', 'ITSM Professional', 'ITSM Enterprise'. The ITSM Enterprise product offers the most practices and features

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[20]cf. Axelos and Office, 2019, p. 33.
[21]ServiceNow, 2022a.
[22]cf. Nechyporenko, 2015, p. 5.
[23]cf. ServiceNow, 2022b.
[24]cf. Nechyporenko, 2015, p. 6.

therefore, when screening the enterprise solution, it turns out that this product does not include all ITIL service management practices according to the ITIL4 framework like service validation and testing. However, the most important ITIL practices initial implemented in ITILv3 are also implemented in ServiceNow like change management which is covered under the ITIL4 term change enablement.[25]

**Change Enablement Implementation**

Change Management in ServiceNow is implemented with a default implementation which includes multiple standardised features like a change advisory board (CAB) workbench which offers a process supported risk evaluation by change managers. Therefore, the possibility of identifying change scheduling conflicts rises enormously.[26] The implementation also includes a configuration management database(CMDB) which allows change artefacts inside the tool to recognize impacted configuration items(CI) and their business critically and hence giving the change management the option to provide a built-in risk assessment calculation.[27]
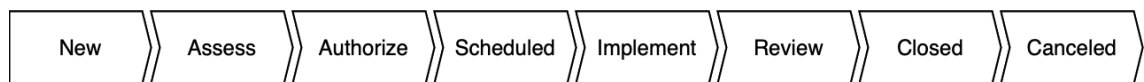
Default Process:



Figure 2: Default Change Process in ServiceNow[28]

The default process includes 8 phases, the 'New' state acts as a draft state in which the change requester role can fulfill the different fields the artefact offers. After submitting the change, it reaches the 'Assess' phase where a peer review will be conducted and a technical approval will be received. Next is the 'Authorize' state, here the CAB will give a final authorisation for the change including the scheduling. After this phase, the change remains in 'Scheduled' until it's planned start date is reached. Next will be the implementation of the technical change inside 'Implement' and followed by the 'Review' in which the change requester checks whether the change was successful. If all reviews are done, a change reaches the 'Closed' state. There is one additional step 'Canceled', this phase is only accessible if the change is canceled at any time in the process except the closed state. Worth mentioning is that there are different change types like emergency changes that do not have all

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[25]cf. ServiceNow, 2022g.
[26]cf. ServiceNow, 2022d.
[27]cf. ServiceNow, 2022c.
[28]cf. ServiceNow, 2022e.

phases due to time savings and standard changes which can skip the approvals as there is a planned impact-less standard way of the technical implementation.[29]

# 3 Analysis

## 3.1 SWOT Analysis

<u>Strengths</u>
As ITIL is a framework consisting of a lot of different topics, there are many strengths that can be mapped to individual parts. However, there are general strengths of using ITIL. By the provision of budget control and elimination of unnecessary and overloaded processes, ITIL proves to be very efficient in its philosophy. Additionally it proves transparency across all the dimensions by the cost transparency rule.[30] ITIL also improves the knowledge management by the addition, training and development of human resources. Hence, ITIL reduces the number of existing silos inside organisations by stakheolder management and documentation.[31] By the definition of terms which describe the daily work, ITIL provides a glossary that organisations can adapt to which proves to reduce misunderstandings that resulted from using different vocabularies for the same matter. Beside this, the process documentation supports the individuals by having an aligned understanding of the value streams.[32]

ServiceNow's biggest strength is considered the implementation according to the ITILv3 framework. As the product was designed after ITILv3, the default processes and value streams are easily adoptable by organisations. The provision of a well built default ITSM functionality out of the box makes the organisation-wide implementation very easy. Nevertheless, SNOW also gives the user the opportunity to take it further by customising the default processes or the creation of own (sub)processes.[33] This modular approach makes it possible to build up a network of processes so that, for example, a demand can become a project as soon as certain self-defined parameters are reached. In addition, SNOW offers a basic product that can be upgraded with various components such as change management, creating

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[29]cf. ServiceNow, 2022e.
[30]cf. Khazieva, 2016, p. 62.
[31]cf. Kashanchi and Toland, 2006, p. 343.
[32]cf. Khazieva, 2016, p. 63.
[33]Woodruff, 2018.

an efficient use of the purchased product portfolio and thus a more effective use of money.[34]

**Weaknesses**

When ITILv3 became known, some weaknesses of the framework were already identified, which can also be found in ITIL4, especially in the ITSM area of ITIL4. Sometimes the solutions provided by ITIL are not concrete enough, and often organisations are still required to invest a lot of resources in order to have a landscape built according to ITIL. This is a consequence of the holistic approach of ITIL. Furthermore, ITIL can be an oversimplified picture of the reality and often fails to address existing problems, especially in the legal area of PESTLE.[35] Beside the content delivered by Axelos in regards to ITIL, the fulfillment and implementation has some weaknesses too. The adoption of new company defining frameworks is a major change in the company affecting not only the hierarchical structure, but also the companies values and culture which might damage the companies internal reputation.[36]

As ServiceNow has the characteristics of a SaaS solution, there are weaknesses in the way the product is offered. ITSM tools often manage sensitive company data with all the related information. A good example of this are projects that are managed with SNOW. As this data is held by SNOW, the cloud provider, the digital as well as physical security has to be left to SNOW. This is a high risk for companies that consider the security and integrity of their data as very important.[37] SNOW's products, regardless of the type of product, are all built on the same foundation. This basis requires a high level of know-how to get into and especially between the processes. Moreover, SNOW largely only offers the functionality to document activities that are already running inside the company. This does not take into account future demands which can result in missed business opportunities.[38]

**Opportunities**

Companies that follow ITIL can have clean and well-defined processes that focus on stakeholder value and value cocreation. Organisations are equipped with state-of-the-art IT service management and can operate effective IT asset management according to ISO/IEC20000[39] standards. This enables the provision and support

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[34]cf. Schaffer et al., 2021, p. 9f.
[35]cf. Cronholm and Persson, 2016, p. 64f.
[36]cf. Doppler and Lauterburg, 2019, p. 455f.
[37]cf. Tang and Liu, 2015, p. 62f.
[38]cf. Fern Fort University, ServiceNow SWOT, 2022.
[39]cf. Asrowardi et al., 2018, p.2.

of high-quality IT services.[40] By focusing on resources and stakeholders, ITIL goes beyond processes and acts as a fulfilling company model. It looks at structure and hierarchy and brings out concepts on how to avoid silos so that everyone with the same information can participate and contribute to the vision of the company.[41] To be successful as a company, you need a good relationship with your own suppliers and external partners.[42] Therefore, ITIL includes the suppliers and partners in their value creation concept, as every organisation is somewhat a service provider as well as a service consumer fulfilling the service relationship model.[43] Together with ServiceNow organisations get the ability to generate opportunities out of the strengths of ITIL. ServiceNow focuses on processes however, it is worth mentioning that human resources are included in the product. The processes ITIL, especially ITILv3, mentions are implemented in ServiceNow hence there is a wide fulfillment of the practices of ITIL. The ITSM practices are well interconnected in ServiceNow and provide a well established network of SNOW artefacts. Besides that SNOW continues to focus on employees as stakeholders and express themselves as productive tool for employees and insightful platform for leaders.[44] Taking change enablement as described in the fundamentals, it turns out that the default implementation of process should suit most companies not having the resources for a custom development. The possibility to develop custom processes can be very important for complex and large companies and is only possible by SNOW's modular approach.[45]

**Threats**

If organisations rely solely on ServiceNow for their ITIL fulfilment, not all areas of the ITIL4 Four Dimension Model will be considered. ServiceNow currently does not offer a product that sufficiently addresses the 'Organizations and people' dimension. The four dimension model focuses on the development and individual training of the contributors. Additionally, it specifies that responsibilities must be clearly defined and the company vision must be communicated. ServiceNow can make roles clearly visible, but it cannot take away the decision which approval processes have to be conducted by whom. Furthermore, there are currently no modules in SNOW that train contributors. The company vision needs to be communicated alongside the tool.[46] The highlighted weaknesses create a risk for companies trying to implement ITIL. ITIL processes are described at a very generic level, which means that the

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[40]cf. AXELOS, 2018, p. 19.
[41]cf. Axelos and Office, 2019, p. 2, p. 4, p. 26.
[42]cf. Anirudh et al., 2020, p. 1393f.
[43]cf. Axelos and Office, 2019, p. 15.
[44]cf. ServiceNow, 2022f.
[45]cf. ServiceNow, 2022h.
[46]cf. Axelos and Office, 2019, p. 25f.

design for the dedicated organisation requires resources dedicated to ITIL concepts and implementing them according to their own values. Furthermore, if not enough resources are invested in this, the business does not improve. Hence, the ITIL implementation is very expensive and sometimes not worth the costs.[47]

## 3.2 Interpretation of the Results

After evaluating the aspects from the strengths, weaknesses, opportunities and threats there are multiple conclusion to draw from this. First, ITIL is a good starting point for companies and can act as a framework for organisations when they are trying to built up an efficient, modern and value focused system. However, ITIL has its limits as the framework is holistic and therefore, only a general approach to the current challenges, organisations face. Potentially many resources still have to be used for establishing a whole ITIL based system and in addition, the success of a company is not only dependent on the fact that ITIL is used, but much more on how it is used. Using ServiceNow as an ITIL implementation solves a lot of challenges for companies, especially for the value streams and processes dimension of the ITIL4 four dimensions model. Nevertheless, ServiceNow has a good standard implementation of processes, but companies may need to put some additional resources into the fulfillment of ServiceNow to have custom processes. While ServiceNow covers ITSM related topics such as change enablement, it does not help with human resources. The development of the staff, like described in ITIL4's organisation and people dimension, is not covered by the tool and hence you will need additional tools for planning holidays, creating contracts etc. Processes are very well documented in SNOW, ITIL however, focuses on stakeholder management and value creation. SNOW supports those goals, but it is worth mentioning that the creation of value is only achievable when all four dimensions are fulfilled therefore, SNOW is a good way to start with one of the dimensions, but not an all-round tool.

## 4 Conclusion

In the following the key results that came up in the SWOT analysis will be held against the research questions to answer the research goal of this paper.

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[47]cf. Cronholm and Persson, 2016, p. 64f.

**Question 1:** ServiceNow proves to be a good implementation for the value streams and processes dimension. Processes are interlinked with each other and can show how and at which step value is created in certain ways. ServiceNow based documentation is very comprehensive and very centralised which supports the ITIL objectives of the value streams and processes dimensions acting as a single point of truth.

**Question 2:** The default implementation of the ITIL service management practices should fulfill the basic needs. Each process like the change enablement has certain well evaluated phases including draft, approval and deployment states. What makes the implementation in theory well suited for any company is that the processes are highly customisable as SNOW provides the ability to create processes or subprocesses if for example an additional management approval step is needed. However, if a default process does not fit an organisations needs, the development of a custom process can take up a lot of time and resources and therefore, organisations should evaluate whether the default implementation which can be found in the documentation fits their needs and if not, an evaluation of the efforts for custom processes should be conducted before using SNOW.

**Question 3:** ServiceNow fulfills the value streams and processes dimension[48] of ITIL4 four dimensions model very well. However, ITIL considers more than processes. ITIL focuses on the organisation's ability to act as a cohesive system which means that the staff knows the vision of the organisation and their part in reaching this vision. Responsibilities should be known and the staff should be trained according to the business needs. ServiceNow is not able to cover this which means that if a organisation decides to build their system after the ITIL framework, they should not forget that it is a framework and ServiceNow cannot help fulfilling every goal of it. The management of the people inside a organisation and the decision on which values and which culture should be lived inside of it cannot be taken over by a tool.

Drawing a general conclusion, it has to be highlighted that this paper is based on a theoretically based analysis. Hence, its results are only a brief overview on an enormous topic. Therefore, for a more detailed consideration of the research questions, it would be advisable to conduct expert interviews and to do practical tests. Whether it is a good idea to implement ServiceNow as an ITIL tool depends on multiple stakeholder opinions and it would also be of merit to take a look at a fully implemented solution in order to evaluate all of ServiceNow's capabilities.

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[48]cf. Axelos and Office, 2019, p. 31ff.

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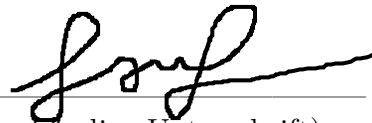
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# Ehrenwörtliche Erklärung

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Barth, 27. 2. 2022

(Ort, Datum)

(Eigenhändige Unterschrift)