# Effective Business process documentation in federal structures

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**Abstract:** The Swiss eGovernment strategy promotes business process orientation of the public administration. Therefore public administrations have been strongly encouraged to document their business processes. The eCH standards have defined the foundations for the modeling. But in particular in smaller cantons and municipalities the business process identification and modeling can be considered as a serious effort, relative to the organization size. In this article we outline means for the efficient process identification and modeling. Also we discuss the short- and long-term benefits that public administration can obtain from modeling their business processes.

## 1  Introduction

The Swiss eGovernment strategy [Bun07], adopted by the federal council in 2007, is a process-oriented strategy. The goal of the strategy is to allow the administration, enterprises and citizen to carry out their transactions with the authorities by electronic means. Moreover, the strategy explicitly promotes business process orientation of the public administration. Therefore, there is a strong incentive for public administration to modernize their internal procedures and transition from a purely functional organizational to a business process management approach. To attain this goal, the eCH association[1] plays a crucial role. Created as a public-private partnership, its mission is to define standards and best practices in eGovernment, that will be enforced and implemented by public administrations at all three federal levels (federal, cantonal, municipal) in Switzerland.

To be able to implement cross-level electronic procedures (like for example, the building permit procedure which requires the involvement of several services of the public administration at different levels, usually municipal and cantonal), administrations need a way to understand one another's way of handling administrative procedures. In other words, process documentation in a common language is required on all levels of the administration. The eCH association has defined already a number of standards for process documentation

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[1] http://www.ech.ch

for the public administration. For instance, they have fixed BPMN 2.0 as a common language for describing processes [eCH11]. Also eCH has published modeling conventions [eCH13]. This offers some advantages, e.g. in contrast to the National Prozessbibliothek, as the process models, are based on a common base.

Even though Switzerland is considered to be a small country (ca. 8 Mio. inhabitants), its administrative structure is rather fine-grained. Switzerland's federal structure consists out of 26 cantons, which again are formed by ca. 2400 municipalities. Due to the federal principle, and the strong emphasis of local autonomy, processes for providing similar services can be designed differently in different places. Thus, there is no *one fits all* process model that can be used for all entities offering a particular type of service. Each canton and each municipality is responsible to identify their process models and also for the way how they have organized their processes. Modeling the processes in a way that is conform to the eCH standards, requires a particular modeling expertise. But it has to be stated that for a large number of municipalities cannot provide this expertise. In particular, as a lot of Swiss municipalities are small. There exist about 1000 (out of about 2400) municipalities with less than 1000 inhabitants. These small municipalities often employ only 2-3 full time equivalent persons in administrations, which typically do not have the required expertise for modeling their processes in an appropriate way. But also in larger municipalities or on the cantonal level, which in principle have sufficient resources, the modeling of processes should not be done by each and every entity, as a) this would be inappropriate resource intensive, and b) for most administrations the process models will be very similar, and therefore the modeling will be redundant.

For the successful gathering of process models on the level of cantons and municipalities an efficient process identification is key. In particular for municipalities the resource investment is relatively large, and can only be considered as a long term investment. Thus, it is not only important to perform the process identification and modeling effective, but also find ways how to create additional values for municipalities and their citizens based on the process models, short-term.

Within this article we are addressing these issues. We outline here best-practices that have been identified as useful, with a particular focus also to be applicable in smaller organizations. Our focus in this article to give an overview about the field and aspects that needs to be considered, to enable an effective process documentation.

In Section 2 we are going to discuss means to identify and model processes effectively. Nevertheless, we will not put a particular strong emphasis to this aspect, as this has been discussed in the literature quite extensively. We will refer there to the existing body of research, see e.g. [Har07, Sil11]. Also there exists a market for service providers that offer their expertise to companies and administrations.

In Section 3 we will put a special focus on the aspect of sharing process models. Sharing is an promising mean to avoid redundancy and waste of resources in the modeling of processes. We will discuss this point in more details as we consider this aspect of business process management (BPM) as one that has not been explored in to depth, until now. Interesting projects have been established, e.g. in Germany the *Nationale Prozessbibliothek*[2]

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[2]http://www.prozessbibliothek.de

or in Switzerland the *Prozessaustauschplattform*[3]. Within this section we will first discuss required means for quality management of process models (Section 3.1). Then we are going to outline the process platform ech-bpm, in the way it is currently developed and deployed in Switzerland (Section 3.2).

In Section 4 we are going to discuss benefits of process modeling. We will pointing out effects have been observed and (partially) documented in the literature. But will focus on ideas how the created process models could be used to create additional benefits.

A particular challenge in this research is the methodology to ensure that the expected results, in terms of a more efficient process identification and modeling, can be realized by the means proposed here. In particular for aspect like process sharing are rather new, and not much data has been collected, yet. The platforms for sharing process models are currently being under development or just have prototypically deployments. Nevertheless, the value of sharing information and models is in general not doubted. Also a direct comparison between two municipalities is hard to achieve. Another approach would be a comparison within one administrative entity before and after the introduction of the means we have discussed here, but this is neither feasible, as the major part of process identification and modeling is a singular event. After process models exists they need to be maintained and partially optimized, but the required efforts is often magnitudes lower than for the initial process identification and modeling. What can be done is the comparison between the effort of *early adopters* of process modeling, i.e. the administrations that started very early with the process identification and modeling, with the efforts for identifying and modeling the processes by the *late followers*, i.e. the administrations that will identify and model their processes after the infrastructure for sharing process models has been created and is well-established, and therefore also provide a rich base of information. As it has become clear by now, we are currently in the phase of the *early adopters* and pioneers with whom we are currently collaborating to create the process platform. Thus, the article lacks a proper empirical evaluation of the gains in effective process identification and modeling. Nevertheless, we are convinced that the means discussed in this article provide an additional value to the research community, and that the empirical evaluation needs to be done later, when the infrastructure has been established.

## 2 Effective identification and modeling of business processes

When it comes to identifying and modeling business processes, we find it very important to keep in mind that these activities are the requirements of the later stages of analyzing, transform and optimize the processes within a company or administration [Sil11].

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[3]`http://www.ech-bpm.ch`

## 2.1 Method selection for identifying and modeling process models

In the literature a variety of methods for identifying and modeling business processes can be found. There are, nonetheless, points that always have been found in different methods and can be considered as core elements. Also some have been identified as best practice to ensure the effectiveness of the identifying and modeling of the business process. A collection of best-practices for modeling business processes is presented in [Sil11]. According to [Har07] the core elements of the modeling methods are the following.

1. Identify the processes to model

2. Prepare the collect of the information

3. Collect the information about the processes

4. Create the processes models

5. Validate the processes models

As mentioned before, within this papers we do not focus on the creation of process models, themselves. There exist a large body of research, and we have just stated two sources, which already provides meta-analysis of effective business process gathering and model creation. We complement this general guidelines with experience we obtained in our own projects, in particular with the public administration in municipalities in Switzerland, to validate that this guidelines lead to a practical procedures for creating process documentations are useful for public administrations. We outline our experience in the reminder of this section.

## 2.2 Process documentation projects - lessons learned

In the context of the eCH process platform project, described in greater details in Section 3.2, a goal was to acquire process documentation from administrations early on in the course of the project. This was meant as a concrete practical application of eCH standards for BPM and as a way to learn about the challenges administration will face when documenting processes. We need this hand-on knowledge to come up with practical guidelines for effectively documenting processes in public administrations. Although those results qualify as *lessons learned* and are not the result of robust scientific experiments, we believe they provide a qualitative value to the BPM practitioner's community in the public administration.

Two municipalities were involved in our process documentation projects, namely the city of Gossau (SG) and the city of Dübendorf (ZH). Dübendorf provided 14 process documentations in a first project. For that project, the municipality had 2 employees in charge, and 2 external consultants. As the municipality was already ISO 9001:2008 certified, they had process documentation at hand, although not in BPMN. Gossau provided 54 processes

modeled from scratch by two collaborators, without any external help (consultants). Objectives of the process documentation projects were to obtain processes that would showcase the correct use of all eCH standards related to BPM. Therefore, the projects were realized in two stages: (1) modeling and (2) quality assurance of the models. The modeling was done primarily by public servants, and the quality assurance was outsourced to consulting companies well aware of the relevant eCH standards. A final human validation step was taken by the ech-bpm project team when preparing the processes for publication on the ech-bpm platform. Deliverables of the process documentation projects included field reports written by the consultants in charge of the quality assurance and addressed to the municipality and the ech-bpm project team. Those documents describe some problems found in the process models. In particular, they hint to the fact that business process models are mainly communication tools, meant to serve as a documentation that can be provided to all stakeholders (current collaborators, new employees, IT service providers, etc.). Therefore they should be well understandable. This is even more true when those processes are meant to be published in an open process library. We summarize next the main recommendations we could make from these experiences:

- *Follow modeling conventions*. Dübendorf reported that they quickly agreed on conventions to coordinate the independent modeling of four collaborators, two of them being external. Moreover, they organized common sessions, where they handled such cases as granularity of modeling and exceptions.

- *Avoid ambiguities* in naming elements: for example activities within a process that bear the same name as the whole process should be avoided. Similarly, abbreviations should be avoided or at least well documented. The majority of findings in the quality insurance at Gossau fell in this category.

- *Anonymization*: names of persons or external companies should be anonymized.

- Dübendorf reported that the *BPMN skills* in the participating public administration needs to be already good (i.e. not beginner-level) in order to understand some of the eCH standards (e.g. the modeling conventions [eCH13]).

## 3   Sharing Models

The value of sharing information has been documented, even before terms like shared-economy have become popular. Even though sharing processes and process related information is not completely new, it has been less explored in commercial environment. Only for supporting actions for the value creations processes, standards and best practices have been documented and shared in commercial settings, e.g. ITIL for managing the IT [BÏ3]. Processes and procedures within the core value creation processes have been documented for internal purposes, but have been considered as secret or at least unaccessible from outside. In case of public administration the situation differs in at least two aspects.

First: The public administration has to provide a large number of different services, which are all considered as public tasks, ranging from domains like defense, education or social

welfare, depending on the type of administration several hundreds different services have been identified [DES14]. So while in company the number of activities considered to be part of the core competences are often only a few dozen, the number in public administrations is magnitudes larger.

Second: Most processes of the core administration services are not secret. The value creation of a public service is, mostly public available. Note that for instances the processes in the German process repository (Nationale Prozessbibliothek) are only accessible for the German public administration. But the processes in the Swiss process platform are publicly available as it follows the open data principles. In principle it is easier in the public administration to collect business processes in repositories and share them. Process repositories usually provide functionalities like storing business processes, categorizing and querying and versioning. More advanced functionalities, often at the level of research prototypes, include similarity search, variants management, merging, refactoring, requirements mining or support for the reuse of process patterns [DRH11, Awa07, CJ07, YDG10, ZZ10, WRMR11]. The use of repositories for public processes can therefore facilitate the research about process repositories, which have, up to now, mainly used within companies or their service providers. Potential fields of research can be the field of repositories itself and also the quantitative and comparative research on real-world processes, which often requires to have a larger number of processes available.

## 3.1 Quality management of process models

Before process models should be shared it is important to make sure they are of a high quality. Otherwise the value of sharing process models is diminished, or even worst becomes negative, as false information is shared and eventually applied in several places. Quality assurance is feasible for the Swiss process platform, as a uniform process representation is facilitated by the eCH standards, in particular [eCH11, eCH13].

Modeling constraints for process models can origin from different sources, like the eCH standard [eCH13] or other sources, e.g. [Sil11, GL10]. The overall quality of a process model depends on two aspects a) its correct content and b) its formal correct representation. Both needs to be validated within the quality management process. Our goal here is to automate the validation of the formal correct representation of a process model. This is done by the *formal validation*. Within the formal validation three different aspects have to be validated.

1. **Schema validation**, i.e. making sure the model is a valid BPMN 2.0 model

2. **Style validation**, i.e. making sure the modeling conventions have been respected

3. **Structural validation**, i.e. trying to find structural problems, like deadlocks and lacks of synchronization

Note that the formal validation explicitly does not address the content of the model. The *content validation*, i.e. checking if the process is modeled correctly, cannot be automa-
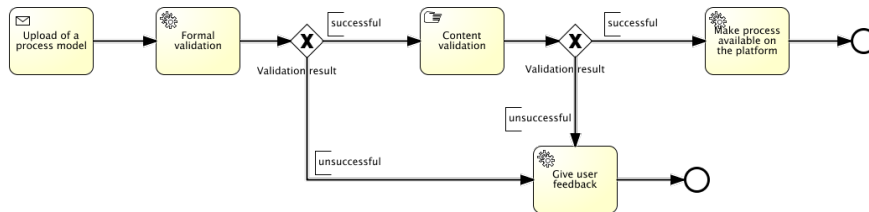
Abbildung 1: Quality management process of the Swiss process library (simplified)

ted, as it would require that the validation tool already has a correct representation of the process, which is not the case, and also would make modeling obsolete. The *content validation* needs to be done by a human expert that has insight knowledge about the process, so she can judge if the model reflects the process in reality correctly.

It becomes clear that the task of the human expert is crucial for the overall quality management process, in which the expert can be considered as a *scarce* resource. Thus, her time needs to be used carefully. Therefore it is required that only formally correct process models are presented to the expert, so she can concentrate on the content validation, and is not distracted by focusing on models with structural or style problems. Based on this principle the quality management process of the Swiss process library, depicted in Figure 1 has been designed. Note, we consider that after the user receives feedback, he has to upload a new version of the process model, and the quality management process is restarted from the beginning. To implement the formal validation it needs to be decomposed into single checks that can be automated. We will discuss this here in brief. We have implemented all these validation checks in form of web services, which allows a simple integration into the quality management process, but also offer the option to use the services for different purposes, or to add or exchange single checks if necessary. Due to space constraints we are not going into much detail here. The validation tool can be accessed via `http://val2pro.hevs.ch`[4].

### 3.1.1 Schema validation

The first important aspect of the formal validation is to assure that the process model is a valid BPMN 2.0 model. To validate this, we check, if the XML representation of the model complies with the XML schema defined in the BPMN 2.0 standard [OMG11]. If this check failed, the process is not a standard BPMN 2.0 process model, and subsequently does not comply with eCH standards [eCH11] and cannot be shared on the platform. If the first check is passed, the structure and the style of the process model needs to be validated.

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[4]Fast validation is recommended, as the full validation uses extensively queries in dictionaries with consumes a lot of time; performance improvement is planned

### 3.1.2 Structural validation

We base our structural validation on the heuristics presented by Gruhn and Laue [GL10]. They have derived 6 patterns that could lead to problems. A process model will be checked if non of the patterns as defined in [GL10] can be found in the process model. We used *Refined Process Structure Tree* (RPST) introduced in [VVK08]. The goal of RPST is to find a unique, modular and as fine as possible decomposition into a hierarchy of sub-workflows of a given workflow. The graph-based process description is translated into a block-based process description. The idea is to create the RPST of the process and then use the different blocks of this tree to analyze the underlying structure of the process. This allows the detection of deadlocks and lack of synchronization problems. For example we investigate blocks that begins and ends with a gateway to control if the both gateways have the same type. If this is not the case it indicates that a structural problem could be persistent. To compute the RPST from the BPMN diagrams we have written a parser to use the jbpt library[5].

### 3.1.3 Style validation

The translation of the modeling conventions [eCH13] is probably the most challenging aspect, as the current eCH standard is addressing descriptive process models [Sil11]. Thus, the target audience of the standards are primarily modelers and less tool providers, as it is relatively vague and needs to be operationalized.

Up to now, we have identified and implemented 72 different style validation tests. All these tests are implemented by analyzing elements in the XML representation of the process model. Analysis are typically done by parsing the XML representation for the occurrence of particular patterns or anti-patterns. We cannot give more details on these patterns here, due to space limitations. To parse the XML we used a Java library named jsoup[6]. It is a Java/HTML Parser, but works very well with XML files, too. This library use CSS, DOM, and jquery-like methods to provide a convenient API for extracting and manipulating data

### 3.2 The Process Exchange Platform in Switzerland

The eCH process platform[7] is primarily targeted towards public servants involved in business process management, e.g. assuming the role of Chief Process Officers (CPO), in their organization. The vision of the platform as defined by the eCH association is that it should foster the use of BPM in Swiss administrations, accelerate the creation of skills amongst public servants, and foster the reuse of existing processes in other administrations to avoid redundant developments (i.e. harmonization). To implement this vision, the platform is designed around three main parts: (1) Resources, (2) Community, and (3) the Process Library, which is its core component. We briefly describe hereafter the different parts.

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[5]https://code.google.com/p/jbpt/
[6]http://jsoup.org
[7]http://www.ech-bpm.ch

The Resources are typically documents describing standards and best practices for implementing BPM in Switzerland. Those resources are mainly prescriptive eCH documents and additional didactic material. They are made available for everyone, curated on the platform, and presented in a didactic fashion. The Community part of the platform encompasses all the features meant to foster the active participation of the actors of BPM in Switzerland. There, people can share their experiences, ask for advice, comment existing processes, standards or methodologies, and get in touch with one another. It is also foreseen that the content of the platform (Resources and Process Library) is maintained up-to-date thanks to the active participation of the community. Finally, the process library is the heart of the process platform. It contains the business process descriptions of the public administrations in Switzerland. For each process, a BPMN 2.0 model is available, as well as a textual description following a common template. Additional metadata for each process is also given, e.g. name of the administration responsible for the process, contact person, classification of the process according to the Swiss reference cartography framework (eCH-0145 Aufgabenlandkarte) [eCH14], and so on. Navigation in the library will follow a faceted search approach, taking benefit of the rich metadata available and semantic technologies. Moreover, an API will be developed to allow administrations to upload their processes easily on the platform. This API will be implemented by vendors of BPM modeling tools and will enable *one-click uploads* of processes along with associated metadata to the process library.

The platform is currently under design and development. However, a scaled-down version of it was already published in October 2013 under `http://www.ech-bpm.ch`. This beta-version contains information about the project, minimal content in the Resources section (e.g. eCH standards) and Community section (e.g. crowdsourcing platform for collecting ideas and requirements for the development of the final process platform). At the core of the platform, the Process Library contains around 80 processes from two public administrations (Cities of Gossau and Dübendorf). On the actual ech-bpm beta platform, the processes from those pilot projects are not yet stored in a fully-fledged process repository, but as static content pages. However, this gives a glimpse of what the final platform will offer. Process diagrams can already be viewed and downloaded. Textual descriptions of processes obtained from pilot documentation projects are provided along with relevant metadata. But navigation and search are still kept minimal in this beta version of the platform. Between its launch in October 2013 and April 2014, the website received about 3500 visitors and more than 16,000 hits, indicating a strong interest on the part of the BPM actors concerned with eGovernment in Switzerland.

## 4 Benefits of modeling business process

Up to now, we have mainly pointed on the aspect that modeling business processes is an effort. This is, of course only one aspect. Modeling business processes is not done without a cause. Benefits from documenting business processes have been commonly documented in various domains, and we have already mentioned some goals of documenting business processes above. In the following we are going to highlight two different aspects. First,

the benefits of having created and available a documentation of the business processes. Documentation activities often allow to reflect and optimize business processes, but also the availability of process documentation can be useful for communication or teaching purposes.

We are also pointing out that it is necessary to provide benefits out of the BPMN 2.0 models. In particular we will provide an example how to create short-term benefits for municipalities and their citizens, out of the XML representation of business process models.

We are not addressing process modeling for the purpose of automating business processes here. The maturity of BPM in the administration is currently at a level, where processes get mainly modeled for documenting purposes. This is also reflected in the eCH standards. As pointed out the modeling conventions for process models currently addressing purely descriptive BPMN [eCH13]. Also proper analysis of business processes and corresponding planning of required resources are currently seldom found in public administrations.

## 4.1   Value of documentation

As McGregor stated "You cant change what you cant see [McG05] BPM documentation allows an organization to gain the knowledge , or, to take McGregors words, to *see*, how she works from the inside, first when modeling and then when exploiting the models.

That knowledge can be used to obtain some return on investment, e.g. by analyzing and optimizing the processes. But as Chow et al. [CMR07] pointed out, a government can expect different ROI than just money. Responsiveness, compliance, reaction times and low amount of process failures can be improved with the help of well documented business process models.

Chow et al [CMR07] proposes three distinct values delivered by the use of BPM, that are:

1. Efficiency: Deliver more, better, faster and cheaper than your current alternative.

2. Control: Consistently knowing the current status and outcome of your processes.

3. Agility: Ability to adapt quickly to changing world conditions.

The efficiency can be measured by metrics like speed or capacity. It reduces operational costs, improve productivity, impact resource utilization and improve the services and the overall quality. The control can be measured by metrics like the rate of non-compliance or the Service Level Agreement (SLA) failure rate. It ensures the compliance, improve visibility and manages the outcomes of the processes. The agility can be measured by the speed to create and change processes. It improves the capacity to change with the clients demands.

The value of process documentation can also be compared with measures of the success of a process modeling project. A case-study was conducted by [BGR05], examining 9

different modeling projects. Based on empirical data, they present success measures of a process modeling project:

- Model quality, i.e. the extent to which all desirable properties of a model are fulfilled to satisfy the needs of the model users in an effective and efficient way

- User satisfaction, i.e.the extent to which the model users believe process modeling fulfills the objectives that underlay the modeling project]

- Individual impact, i.e. how process modeling has influenced the Process stakeholders; those who have a role in the processes being modeled.

- Process impacts, i.e. the overall effect of process modeling on the processes modeled.

- Project efficiency, i.e. the process modeling projects ability to maximize the obtained outcomes in relation to the invested resources.

## 4.2 Using process models to provide additional value and services

We are aware that the definition of the process models creates significant efforts for the public authorities in Switzerland, in particular for the municipalities. Even though we have outlined in this article a review of techniques that can reduce these efforts, still it will create extra efforts for the involved entities. But most of the positive effects of the availability of process models can only been realized in a long-term time horizon. In particular for the municipalities, for which the efforts is relatively bigger than for a canton or the federal state level, it is important to provide means to also have short-term benefits out of their models. Thus we must stimulate the usage of process models that provide short-term benefits. We hereby consider providing more and new information or services to ease the interaction with the public administration. In this article we show one example how process models can enable better services to the citizens of a municipality, and also have the potential to reduce efforts and costs within the administration itself, short-term.

We consider that for each activity within the process model the required data in- and outputs are annotated in the BPMN 2.0 model. Based on this annotated process model we can compute the required documents to initiate a process instance. A document is required, iff it is a required input of an activity and has not been created as an output by a preceding activity. These required inputs are presented in form of a checklist. This checklists could be directly given to the citizens interested in this service, e.g. by providing them online on the web page of the municipality. A person that wants to obtain a service (delivered by executing a process instance) can use this checklist to tick-off all inputs and prepare their request better, before they go to the administrative office. This could also decrease the process execution time and the workload on the public servants, as the efforts for requesting documents from the citizen is reduced.

In the following we give an example of a process shown in Figure 2. We have created this example, by adding the in- and output annotations to an existing process we obtained from

| # | Activity name | Inputs | Outputs |
|---|---|---|---|
| 1 | Inform all employees of HR | Termination | - |
| 2 | Inform the mayor | - | Mail |
| 3 | Check if the employee has informed his superiors | - | - |
| 4 | Create a termination confirmation | - | Confirmation |
| 5 | Send the information to the employee | Confirmation | Confirmation |
| 6 | Create a checklist and tracking the ongoing discharge | - | Checklist |
| 7 | Create a draft of a work certificate | - | Draft certificate |
| 8 | Revise work certificate | Draft certificate | Certificate |
| 9 | Get signature of Mayor and head of office | Certificate | Certificate |
| 10 | Arrange exit interviews for personal service and Mayor | Certificate | Certificate |
| 11 | Give the work certificate to the employee | Certificate | Certificate |
| 12 | Perform the exit interview | - | - |
| 13 | Archive the dossier | - | - |

Tabelle 1: In- and outputs of the example process

the Swiss Process Library[8]. The activities are annotated with the in- and outputs as shown in Table 1.

As it can be seen, the execution of the process has intended side-effects. There exist outputs by process activities that are not *consumed* by subsequent activities. An example of such a desired site effect is that a confirmation is send to the employee. The resulting checklist is shown in Figure 3.

# 5 Outline

Within this article we have pointed out that the modeling of business processes in the public administration can provide benefits a) while modeling the processes, b) short-term benefits by valorizing the existing process models, and c) long term, by enabling a more efficient collaboration between all levels of the federal administration in Switzerland. But, in particular for smaller cantons or municipalities the identification and the modeling of the business processes has to be considered as a significant extra effort. Therefore the efficiency in documenting business processes and also the collaboration between administrations, by sharing process models needs to be enhanced, in particular as public budgets are shrinking. We have presented techniques to increase the efficiency in identify and mo-

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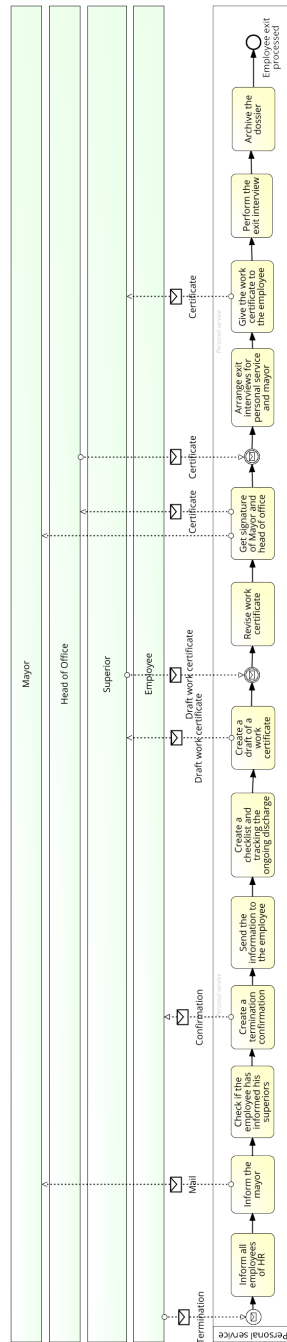[8]We have translated it, for a harmonized use of language within this article.

Abbildung 2: Process model for handling a termination of an employee

> Some documents are necessary during the execution of the "Personalaustritt_bearbeiten" process. The list below shows you what are these essential documents you should bring with you.
>
> Documents to have to begin the process :
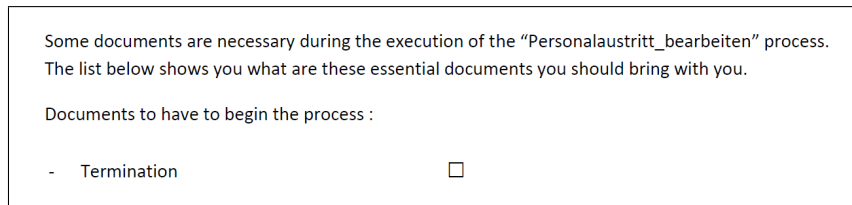>
> - Termination ☐

Abbildung 3: Automatically generated checklist from the process model, shown in Figure 2

del business process. Also we have outlined that the value of process libraries and the sharing of business processes has a particular role in BPM in the domain of eGovernment. Also we have discussed means how the efficiency gains in the public administrations can be empirical measured, which requires a long term comparative study, so sound empirical results can only be available in a few year, after the infrastructure is established.

In particular the empirical research will be in the focus of one branch of future research that needs to be done, to demonstrate that the infrastructure (process maps, the process library , the quality management process) offers concrete additional values for the public administration. Also we are currently investigating how repositories can be used to increase efficiency in searching for existing process models and how existing models can be used in the process of creating new process models, and support this process with semantic annotated process models, and a process designer that take advantage of existing model repositories.

## Acknowledgement

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