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EXPERIENCES IN PROCESS-ORIENTED REORGANISATION THROUGH REFERENCE MODELLING IN PUBLIC ADMINISTRATIONS – THE CASE STUDY REGIO@KOMM

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Abstract

During the last years the optimisation of business processes has gained more and more importance in the context of modernising public administrations. In line with the concept of electronic government (eGovernment) citizens demand not only an improved design of internet sites, but also the creation of real added value to administrational services. In dimensions of benefits (from the citizen's point of view) and in dimensions of cost reduction (from the administrations' point of view) the added value can be generated by providing fully transactional online citizen services. The establishment of such services should be supported by reorganising the underlying business processes in terms of process organisation and enabling ICT. Approximately 13,000 German municipalities mainly have to deal with the same spectrum of tasks. The administration processes that are necessary to fulfil those tasks share strong structural analogies. Within process oriented reorganisation projects, reference models can contribute to cost reduction in the phase of to-be modelling. Aim of this paper is to present experiences in applying reference modelling within the process oriented reorganisation project Regio@KomM in public administrations. The reorganisation of the process of issuing a general debit note authorisation exemplifies the practical applicability and the value potential of reference modelling in public administrations.

Keywords: eGovernment, process oriented reorganisation, process management, process modelling, reference modelling.

1 PROCESS ORIENTED REORGANISATION IN PUBLIC ADMINISTRATIONS

The growing number of tasks accompanied by strong cost pressure on public administration has increased during the last years. On the one hand, tax revenues have stagnated in many places or even dropped behind, which necessitates massive reduction of expenses. On the other hand, public administration is confronted with increasing requirements from citizens and companies. The internet based spatial and temporal availableness of services is already common in other areas, e. g. in the banking or retailing sector. The increased requirements and tasks on the one hand and the decreased revenues on the other hand have confronted public administrations with a modernisation and performance gap (Budäus and Schwiering (1999)).

Public administrations recently try to close this gap by applying the concept of electronic government (Falck (2002), pp. 137 et seq.). However, the expectations linked with this concept can be fulfilled, if internet based public services in the form of electronic citizen services feature significant advantages in cost and benefits compared to pure offline solutions. Besides information and communication services especially fully transactional services are relevant. Therefore the process oriented analysis of administrational processes is considered to be an appropriate instrument to reveal and implement a potential for optimisation of the public services (cf. e.g. Scholl (2003)).

eGovernment-initiatives can be found on all federal levels in Germany. Especially on the local level nearly all of the approximately 13,000 German municipalities deal with this topic in different levels of intensity. The results can range from a simple representation oriented design of a website to an internet based fully transactional provision of complex services. Many of the 13,000 municipalites in line with their eGovernment efforts work on similar problems. Especially concerning solutions for optimizing business processes there is a high potential for reuse as all local governments serve under similar legal regulations and restrictions.

The use of reference process models (reference models) can be a valuable design assistance in order ro improve business processes and workflows. As a storage of domain know-how and by their universality reference models offer a high potential for reuse (cf. e.g. Jeusfeld et al. (1998), p. 270; Rosemann and v.d. Aalst (2003)). They enable the exploitation of synergies and the reduction of redundancies. Prior to a wide application of reference models in the domain of public administrations it is important to explore and evaluate their feasibility and their usefulness.

Thus the aim of this paper is to illustrate the practical experiences made with the application of reference modelling in the form of a case study (cf. e.g. Yin (1994); Darke et al. (1998)) taking the project Regio@KomM and a subset process as an example. The experiences made in this project can be useful within the scope of further reference modelling projects especially in the field of eGovernment. Therefore in the following paragraph the project Regio@KomM is presented and basic questions of the project are discussed. These questions will be taken up in the following paragraphs. In section 3 it is elucidated how the most appropriate public services can be selected from a large set of possible candidates. The procedure of as-is modelling and weakness analysis is described in chapter 4 considering the debit note authorisation as an example. Subject in paragraph 5 is the development of a reference model based on the findings before. The paper ends with a summary and an outlook on further research opportunities in chapter 6.

2 THE PROJECT REGIO@KOMM

The project name Regio@KomM is derived from a German abbreviation meaning "realisation of electronic government in municipalites of the Muensterland". The abbreviation shows both a spatial and a textual reference to the project. The spatial reference is that one to the Muensterland as the

project environment. The Muensterland region is in the northern part of the federal state North Rhine-Westphalia with a total of more than 1.5 million inhabitants. In this region Muenster is a regional centre surrounded by 66 smaller municipalities in an overall of 4 counties.

The district government being responsible for the Muensterland regularly recommends strategic frameworks and principles which should be considered by the dedicated administrations. The district government evolved a strategy paper called "Muensterlandprogramm 2000+" in the year 2000 that builds both the background and the textual reference for the project Regio@KomM (cf. Disctrict Government Muenster (2000)). The observable trend of reorganisation and modernisation of administrations throughout Germany by the strengthened use of information technology is picked up in this paper. By the specification of a field of action "information and communication technology, multimedia" it is tied as a strategic maxim of action. A long-term aim is to build up a regional internet portal for the Muensterland. This portal is supposed to provide services of companies and tourism organisations on the one hand and especially electronic citizen services on the other hand.

In 2003 this idea was transferred into practice by the project Regio@KomM. The district government as patron, six local governments (two county administrations and four city councils), a local electronic data processing centre and the University of Muenster began to work on the task "realisation of electronic government". With reference to the "Muensterlandprogramm 2000+" the aim is to realize electronic citizen services for the public that offer an added value for the user groups administration, companies and citizens. On the long run these services should be integrated into the portal mentioned above.

Up to now in many existing eGovernment projects a technological driven approach (e.g. collaborative choice of software by administrations in local application communities) predominates. On suggestion of the participating university a conceptual approach was chosen in this project. Regarding the principle "organisation before technology" the following questions were formulated. They also deliver the structure of the following sections:

- Which business processes are those to be considered for the realisation of electronic citizen services (section 3)?
- How do administrations in the Muensterland handle these processes at present (section 4)?
- How might ideal processes and accordingly reference processes look like that serve administrations in the Muensterland as a guideline (section 5)?

3 SELECTION OF BUSINESS PROCESS WITH A POTENTIAL FOR REUSE

In order to inductively develop a reference model on the basis of multiple process analyses, the relevant processes have to be determined first. In this context two problems occur in public administrations:

- On the one hand the spectrum of tasks prescribed by law can contain more than a thousand different services and hence business processes.
- On the other hand the public fiscal accounting offers only little information of process costs or revenues of a service (Wolf and Krcmar (2003)), so that a selection on the basis of common monetary ratios is not possible.

For the above specified reasons a multilevel procedure was chosen for the selection of the business processes. The aim was to select a manageable number of processes (around 10), which should be the basis for the creation of the process model. Their selection should be structurally reasoned by qualitative and quantitative (especially monetary) figures. The reason mentioned last had crucial importance for the participating pilot-administrations. They pointed out the complex political consensus-making process in local governments that reorganisation projects necessitate.

Two segments for prioritisation have been selected in order to minimise the work for the participating pilot administrations in the run-up to the process analysis (Schwegmann and Laske (2003), pp. 114 et seq.). This was guaranteed by cursory structuring many services considering only a few criteria and prioritizing them. In the second project segment the remaining services were analysed in cooperation with the same people again but on a higher level of detail. The procedure for prioritising was illustrated elaborately in (Becker et al. (2004a), pp. 158-164) and is only adumbrated in the following.

As a first step, in a workshop with all process participants, a list was made up with more than 100 services that were discussed to be rebuilt in the participating administrations. Each service was analysed regarding its technological maturity and the frequency of its execution by means of a questionnaire (cf. Figure 1). Therefore the portfolio method was used (cf. for this and in the following: Budäus and Schwiering (1999), pp. 155 et seq.; Gisler (2001), p. 25; p. 9; Boller and Beuchat (2001), p. 56).
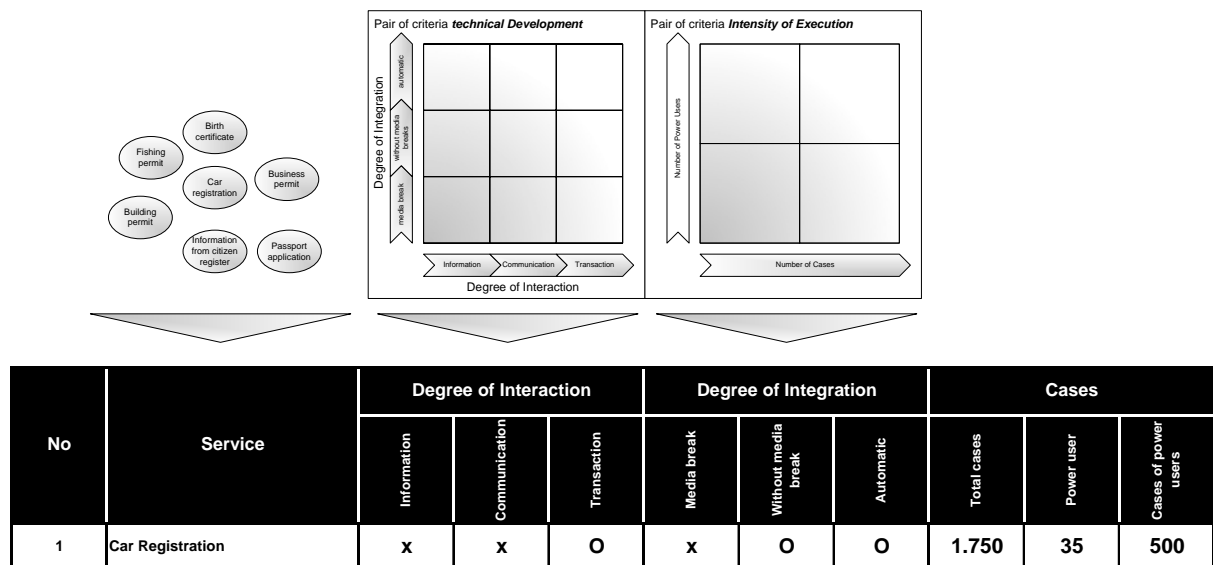

No	Service	Degree of Interaction			Degree of Integration			Cases		
		Information	Communication	Transaction	Media break	Without media break	Automatic	Total cases	Power user	Cases of power users
1	Car Registration	x	x	O	x	O	O	1.750	35	500

Figure 1:   Project segment 1 of process selection (Becker et al. (2004a))

With the analysis of the technological maturity it should be observed, how strong the single processes are already supported by information technology. This was necessary in order to guarantee that almost automated processes are not the basis of reorganisation. Therefore, on the one hand, an internal administrational perspective was chosen by asking for the actual level of automation of the several processes in the dimension level of interaction. On the other hand, an external citizen perspective was chosen. The level of interaction with citizens and companies was reviewed by the characteristics information, communication and transaction.

The criterion pair "frequency of execution" focussed on the annual number of service cases. It was chosen because of its relatively simple measurability and comparatively high significance. Again an internal and external perspective was used. The internal perspective was mapped by the dimension absolute number of service cases per year. The more a service is executed, the merrier are the effects of a possible process improvement profiting by economies of scale. The external perspective highlights the user structure of a service. The more instances of a service merge on one single user (so called power users, e.g. car dealers, law firms and architectural practices), the more probable it is that users profit by using an electronic citizen service over the internet.

The technological maturity of the most analysed processes was only lightly pronounced, so that the criterion pair "frequency of execution" was mainly used for the process prioritisation. Altogether the number of processed could be reduced from more than one hundred to approximately 25.

In the second project phase their complexity was analysed more thoroughly by using extended analysis criteria. Similar in structure another questionnaire was developed, which was filled in as well by the

participating administration staff. Assessment criteria enclosed the dimensions organisational complexity, technological complexity, formal complexity and application complexity, which were consolidated to an indicator for the total complexity (cf. Table 1).

	Organisational Complexity	Technical Complexity	Formal Complexity	Application Complexity		Total Complexity
Debit Note Authorisation	+	++	+	+		+
Bulky Waste Notofication	+	++	++	+		++
Refund of Student Travel Expenses	++	++	++	++		+++
Extension of ID for Disabled People	+	++	++	++		++
Application for Housing Allowance	++	+++	++	++		+++
Lending Media from the Library	+	+	+	+		+
Business Register Information	+	++	++	+		++
Ticket Booking	+	++	++	+		++
Lost & Found Information	+	++	++	+		++
Citizen Register Information	+	+	+	+		+
Registration of Waste Disposal Bins	++	++	++	+		++
Birth Certificate Application	++	++	++	+		++
Building Application Status Request	+++	++	+++	+++		+++
Real Estate Register Information	+	++	++	+		++

Table 1: Project segment II of process selection

A number of K.O.-criteria led to the exclusion of services, for example the need for face-to-face attendance or the need of a digital signature. Altogether the number of services could be reduced to 15 at the end and was the discussion basis of a final workshop with the pilot administrations.

4 AS-IS MODELLING AND AS-IS ANALYSIS

4.1 Analysed processes

For as-is modelling the processes displayed in Table 2 have been defined to be analysed in the participating pilot administrations. The selection resulted from the characteristics of complexity and by the articulation of individual preferences of the participating administrations.

Service	Beckum	Sassenberg	Borken County	Borken	Bocholt	Rheine
Debit Note Authorisation	☑		☑	☑	☑	
Bulky Waste Notification					☑	
Refund of Student Travel Expenses	☑		☑			☑
Business Register Information	☑			☑	☑	
Citizen Register Information	☑			☑	☑	
Registration of Waste Disposal Bins	☑	☑			☑	
Birth Certificate Application					☑	☑
Real Estate Register Information			☑			
Dog Licence Fee	☑				☑	

Table 2: Analysed processes during as-is modelling

In total, nine different business processes in six different administrations have been analysed. It is notable that not each process has been analysed in each administration, since not each administration serves each process, e.g. due to different competencies on the level of district and municipalities or depending on the number of inhabitants. Furthermore, economical aspects have been considered; not each administration could serve enough resources for participating in the analysis of each process.

By the given reasons altogether 22 process analyses (not the theoretical possible 54) have been executed. During the selection and assignment of the processes it was an aim to analyse every process in at least 3 different administrations. The idea was to extract enough information from the models in order to identify "best-practice" or "common-practice" processes, so that – with regard to possible

further improvements – a reference model not only for the other participating municipalities, but for the whole Muensterland could be developed. In the following it is illustrated how to proceed with the as-is modelling using the process of debit note authorisation as an example.

4.2 Method

The structure of the processes selected by the prioritisation was documented simultaneous in multiple pilot administrations using open expert interviews (Heinrich, Heinzl, and Roithmayr (2004), p. 340). The interview questionnaires were not regarded as strict defaults but as a guideline (Diekmann (1995)). Through this a constriction of creativity of both the interviewer and interviewee by strict questions was prevented. As interview partners, clerical assistants and executive officers in their role as domain experts were selected in order to get a detailed insight in particular process steps on the one hand, and to get an overview of the overall process on the other hand. If possible, more than one assistant was interviewed for the purpose of considering different positions and comprehensions of the regarded process.

Besides the actual structure of the processes, relevant administration specific terms and the organisational structure (Schwegmann & Laske (2003), pp. 109 et seq.), weaknesses were gathered within the interview in the run-up to the process analysis. The administration staff articulated some working steps as disturbing in their everyday work and mentioned these in the interview. Furthermore, administration staff members pointed at obvious weaknesses in the process during the interview (e.g. media breaks caused by redundant entries of data) and questionned their necessity. Through this, a weakness list could be prepared that could be reused and completed during the further as-is analysis and weakness analysis.

The process structures were gathered textually at first and were transferred to conceptual process models later. That way the interviews could be performed efficiently without being interrupted by modelling.

As modelling technique Event-Driven Process Chains (EPC, cf. Scheer (1999)) were used, which – presented in columns (Rosemann (2003)) and being shortened of trivial events – were considered as simple and intuitive by the administration staff as well. The modelling tool ARIS Toolset (ARIS Toolset (2004)) was chosen, that, on the one hand, provides the modelling technique of event-driven process chains and, on the other hand, was already available at the university.

The designed as-is models were presented to and cleared with the same administration staff members that were initially interrogated in a further workshop. This was necessary in order to clarify misunderstandings that occured in the interviews and that cannot be avoided completely (Schwegmann & Laske (2003)). As an example the as-is model of the debit note authorisation is presented in Figure 2. We only present the process logic in order to ensure clarity. The presentation in columns including annotation of the used data and organisational objects is abandoned.
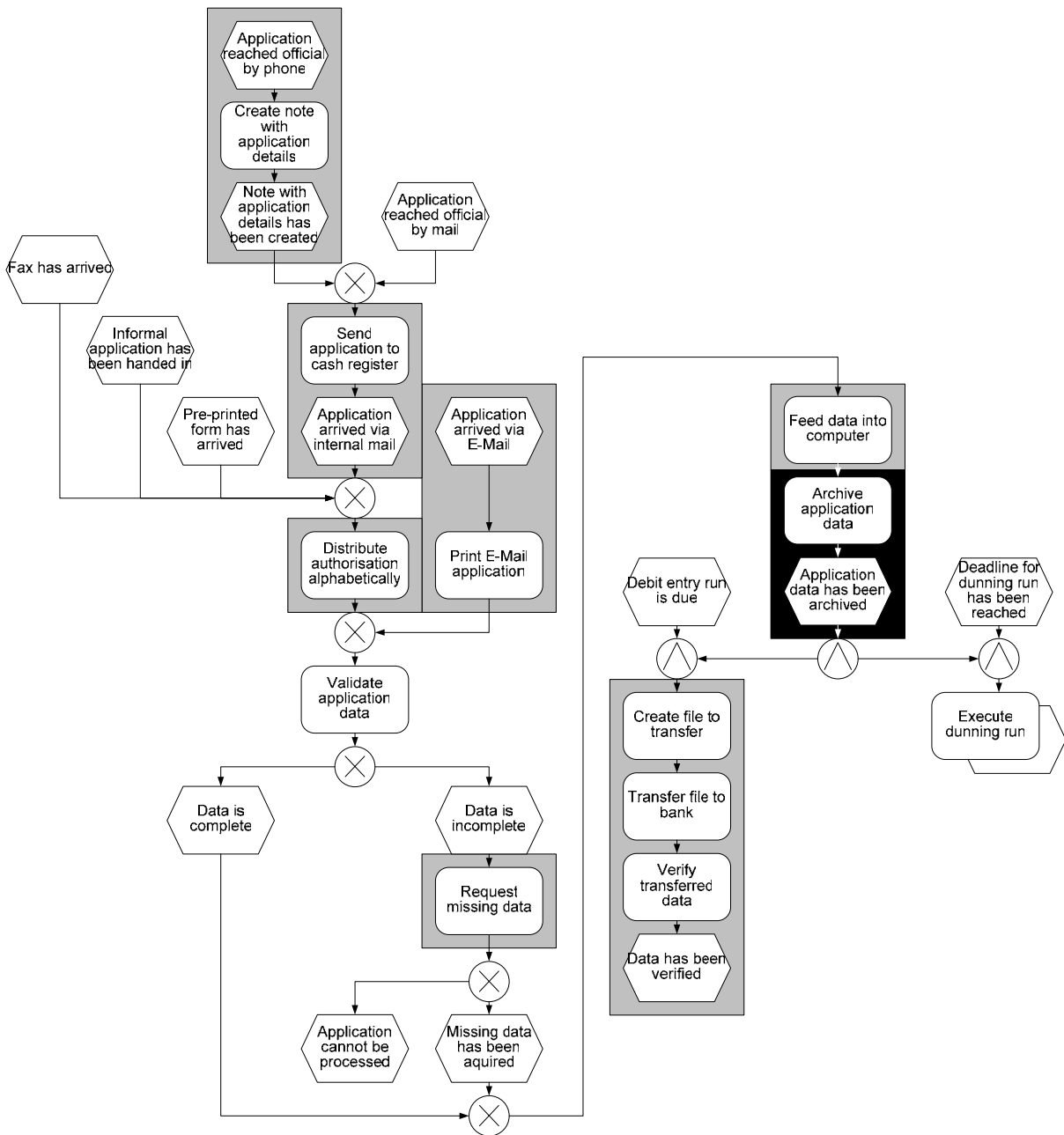
Figure 2:   As-is process model debit note authorisation

At the end of the as-is modelling phase a specific as-is model was available or each pilot administration. On the basis of these models a weakness analysis for each process could be performed. The following weaknesses

- media breaks,
- redundant administration of used data within the process,
- redundant work steps (e.g. not necessary, but self-imposed liability for a signature by a higher disciplinary instance),
- deficient functionality of already used software (e.g. inadequate or missing interfaces),
- organisational barriers and
- unnecessary waiting time

were identified (excerpt; for further potential weaknesses in as-is processes cf. e.g. Schulte-Zurhausen (2002), p. 353; Eversheim (1995), p. 143; Krickl (1994), pp. 28 et seq.; Davenport (1993)).

In the weakness lists not only eliminable weaknesses were gathered, but also those, whose removal was not possible or only in a limited way (e.g. because of legal restrictions), in order to provide a better basis for decisions according to the removal of weaknesses in the context of to-be modelling. In this particular case the restriction was the legal force to archive all process data in a paper-based way. This is time consuming and creates high cost. Furthermore, it is considered obsolete, since archiving can be performed as well electronically (cf. also Table 3).

Weaknesses were also marked in the process models – depending on their possibility of being removed – in different colours. (cf. Figure 2; removable weaknesses are shown in grey, not removable weaknesses in black) Furthermore, improvement potentials and proposals gathered during the as-is modelling phase were added to the weakness lists. An exemplary list of weaknesses for the visualised process in Figure 2 is presented in Table 3:

Weakness	Occurrence
Media breaks	• If an applicant calls by phone, all application data is first written down on a unstructured note before being entered into the application system.
Redundant and unnecessary process steps	• In order to transfer debit note data to a bank a special application system is necessary. An efficient debit note management system should be able to integrate this function. • Debit note authorisations have to be sorted alphabetically in order to direct them to the responsible official.
Lacking functionality of software	• Only officials working at the cash register can enter application data into the debit note management system. There is no web interface which allows decentralized entry of data.
Organisational barriers	• Debit note authorisations which have been created in different organisational units are collected via the internal mail system.
Law induced weaknesses	• The administration of a paper based archive for the debit note documents is time consuming and causes high costs. Elimination, however, is not possible due to legal regulations.
Potential for improvement	• In some administrations debit note authorisations cannot be given over the phone as a signature is considered as crucial. In other administrations a phone authorisation has been executed successfully over several years. Hence we also propose an authorisation by phone. • Different organisational units should be allowed to enter the application data. The internal mail channel would be eliminated and the work load of the cash register could be reduced significantly • A valuable extension is the online authorisation over the internet. On the one hand it would be another reduction of workload. On the other hand there would be an improvement of service quality by providing another electronic service over the internet.

Table 3:   Exemplary list of weaknesses for the process "debit note authorisation"

It was noticeable that a comparison of the presented as-is process to processes of other administrations revealed similar weaknesses. Especially for the process of debit note authorisation no real "best-practice" was ascertainable. The analysed processes represented rather a weakness-affected "common-practice" that demands general weakness elimination. The situation was different, e.g. for the process "information from business register". In one municipality the process was nearly optimised and supported by extensive use of information technology. Nearly no media breaks were observed. Here a "best-practice" could serve as the basis for the design of a reference model.

5   CONSTRUCTION AND DELIVERY OF REFERENCE MODELS

5.1   Construction of Reference Models

The phase of as-is modelling is typically followed by the to-be modelling. A characteristic of to-be models is that the included recommendation for redesign of the processes must be short or medium-

term convertible for being realisable within the planning horizon. In contrast reference models represent a long-term aspired situation (Speck and Schnetgöke (2003), pp. 155 et seq.). Having the construction of reference models for public administrations as one aim of the project Regio@KomM subsequent to the weakness-analysis an ideal model – completely cleared from weaknesses – was designed for each analysed process and provided to the administrations as reference model. The reference model for the debit note authorisation is presented in Figure 3. All weaknesses – apart from legally involved ones – were eliminated independent of administration-specific conditions.
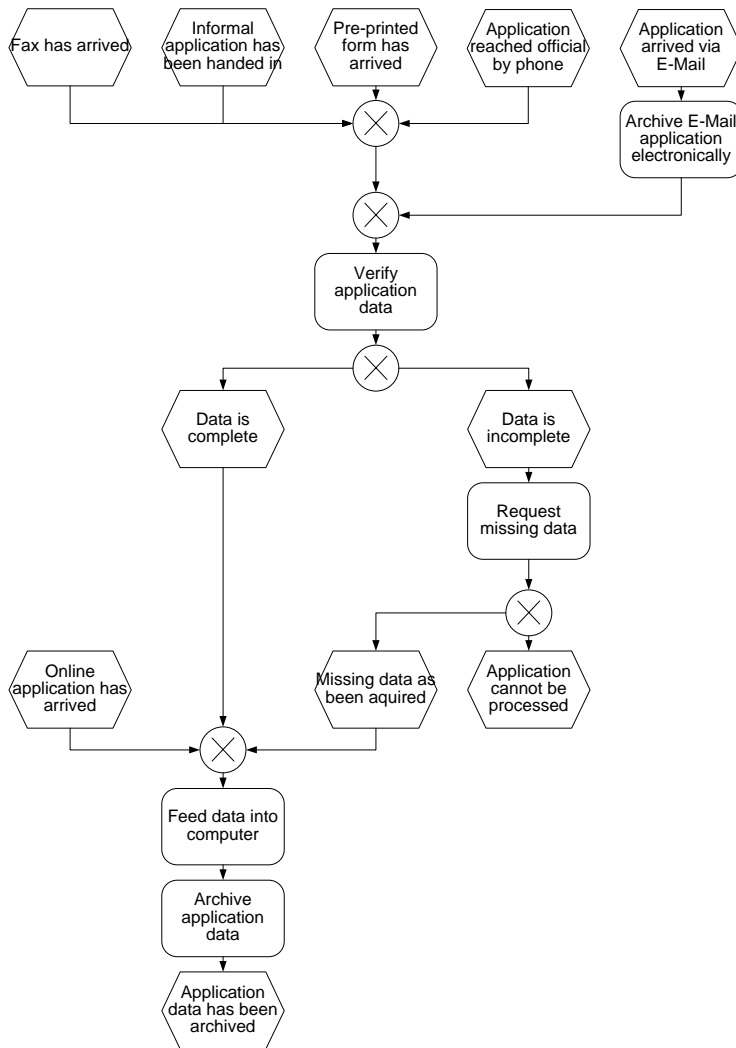

Figure 3:   Reference process model of the debit note authorisation process

Table 4 shows how the identified weaknesses were eliminated for the construction of the reference model.

Elimination of weakness	Method
Elimination of media breaks	• If a debit note authorisation is given over the phone the data is directly put into the application system
Elimination of redundant and unnecessary process steps	• The data transfer to banks is integrated in the debit note management system • As there are less paper based process steps no alphabetical sorting is necessary anymore.
Extension of software functionality	• The software should be extended with a decentralised way of putting in data via intranet technologies by example.
Elimination of organisational barriers	• Debit note authorisations are entered in the organisational unit where they are received (needs software extension)
Realisation of proposed improvements	• Debit note authorisation over the phone is integrated in the proposed reference model • The internal mail channel is obsolete as all data is directly entered at the point of creation. • The online application as a new channel is explicitly considered in the reference model.

Table 4:   Recommendations for eliminating the identified weaknesses

5.2   Delivery of Reference Models

Processes in public administrations are commonly regarded as highly institutionalised. This could lead to the assumption that there exist high acceptance barriers when trying to implement reorganised and rationalised administrational to-be process structures. The experience we have made within the project Regio@KomM after the delivery of the developed reference models shows the opposite – executive officers and clerical assistants as well as CEOs (in this case the mayors) were highly interested and commited to the reorganisation activities due to the following reasons:
• Expectation of simplification of work / job enrichment
• Expectation of cost savings
• Expectation of gaining electors due to an improved way the administration is seen by the public

Therefore we expect that the reference models designed in the project can be used not only in the participating administrations but also in project external administrations as a recommendation for reorganisation projects. A further expectation is that the inter-municipal dialogue being activated by the distribution of the reference models provides synergetic effects. They can occur for example in the fusion and corporate use of extensive IT-infrastructure that is necessary for the elimination of actual weaknesses claimed in the reference model. A first positive feedback by the administrations concerning such considerations supports this projection.

In the case of an impossible middle-term realisation of the recommended reference model a particular administration has to decide, whether model variants realisable mid-term should be constructed.

6   SUMMARY AND OUTLOOK

The case study has shown that the construction of reference models can be of significant value in concrete projects in the domain of public administration. The high level of structural analogies, that characterise public administration in Germany as protruding characteristic, encourages the use of reference modelling in the domain of public administration. The positive feedback of the pilot administrations shows that reference models are applicable in terms of process oriented reorganisation of public administrations. It remains to be seen on which scale reference models can be directly implemented respecting the fact that a lot of constraints have to be overcome (e.g. the attendance to corporate use of IT-infrastructure, cf. chapter 5).

At the moment the proposed reference process models are in concrete application. Municipal specific migration concepts have been worked out. The as-is processes and the administration specific IT infrastructure development scenarios have been combined in migration plans and hence adjusted to-be processes have been provided as an orientation for the change management process. Having regard to administration-individual restrictions concrete advices have been given, which are in the first steps of implementation at present.

Further research work has to show, whether the reference models may be have to be enhanced with further textual aspects e.g. in the form of annotated expert knowledge or legal regulations. Also it has to be checked, whether the recommended reference models can be implemented ad hoc in every administration – even outside North Rhine-Westphalia – or whether they have to be adjusted on regional parameters if necessary. In this context it has to be checked, if the method of configurative reference modelling (Becker et al. (2004b); Rosemann and v.d. Aalst (2003)) can make a contribution to the further dissemination of reference models in public administrations.

References

Algermissen, L. (2004): Realigning Public Administrations with the Concept of Electronic Government - How to Prepare Process Oriented Reorganization Projects. In: Proceedings of the 2004 IRMA International Conference. New Orleans/LA (USA). p. 93-96.

ARIS Toolset (2004). http://www.ids-scheer.de/germany/products/aris_design_platform/23204. date of invocation: 2004-06-28.

Becker, J.; Algermissen, L.; Delfmann, P. and Niehaves, B. (2003): Konstruktion konfigurierbarer Referenzmodelle für die öffentliche Verwaltung. In: Proceedings of the Informatik 2003. Innovative Informatikanwendungen. Frankfurt/Main. p. 238-242.

Becker, J.; Algermissen, L.; Delfmann, P.; Falk, T. and Niehaves, B. (2004a): Reorganizing Public Administrations - How to manage Process Oriented eGovernment Projects. In: Proceedings of the 8th Pacific Asia Conference on Information Systems - Information Systems Adoption and Business Productivity. Shanghai, Peoples Republic of China.

Becker, J.; Algermissen, L.and Niehaves, B. (2003). Prozessmodellierung als Grundlage des E-Government – Ein Vorgehensmodell zur prozessorientierten Organisationsgestaltung am Beispiel des kommunalen Baugenehmigungsverfahrens. In W. Uhr, W. Esswein and E. Schoop (Eds.). Wirtschaftsinformatik 2003 / Band II. Heidelberg, p. 859-878.

Becker, J.; Delfmann, P.; Dreiling, A.; Knackstedt, R. and Kuropka, D. (2004b). Configurative Process Modeling - Outlining an Approach to Increased Business Process Model Usability. In: Proceedings of the 2004 Information Resources Management Association Conference. New Orleans. p. 615-619.

Boller, R. and Beuchat, A. (2001). Vertrauen und Sicherheit im Netz. In: M. Gisler, D. Spahni (Eds.). eGovernment. 2nd Edition, Bern et al., p. 53-74.

Budäus, D. and Schwiering, K. (1999). Die Rolle der Informations- und Kommunikationstechnologien im Modernisierungsprozeß öffentlicher Verwaltungen. In: A.-W. Scheer (Eds.). Electronic Business und Knowlege Management. Heidelberg, p. 143-165.

Darke, P.; Shanks, G. and Broadbent, M. (1998). Successfully completing case study research: combining rigour, relevance and pragmatism. In: Information Systems Journal, (1998) 8, pp. 273-289.

Davenport, T. H. (1993). Process Innovation. Reengineering Work through Information Technology. Boston.

Diekmann, A. (1995). Empirische Sozialforschung: Grundlagen, Methoden, Anwendungen. Reinbek.

Disctrict Government Muenster. Münsterlandprogramm (2000). http://www.bezreg-muenster.nrw.de/aufgaben/Organisation/Dezernate/Dezernat_61/EntwPgm_Msl/Startseite_MslPgm. date of invocation: 2004-05-17.

Eversheim, W. (1995). Prozeßorientierte Unternehmensorganisation: Konzepte und Methoden zur Gestaltung „schlanker" Organisationen. Berlin et al.

Falck, M. (2002). Business Process Management – As a Method of Governance. In: K. Lenk, R. Traunmüller (Eds.). Electronic Government: Proceedings of the 1st International Conference EGOV 2002, Aix-en-Provence. Berlin et al., p. 137-141.

Gisler, M. (2001). Einführung in die Begriffswelt des eGovernment. In: M. Gisler, D. Spahni (Eds.). eGovernment. 2nd Edition, Bern et al., p 13-32.

Heinrich, L. J.; Heinzl, A. and Roithmayr, F. (2004). Wirtschaftsinformatik-Lexikon. 7th Edition, Munich.

Isselhorst, H. (2001). Klassifikationsschema für E-Government-Verfahren. In: BSI (Eds.). E-Government-Handbuch. Bonn.

Jeusfeld, A.; Jarke, M.; Nissen, H.W. and Staudt M. (1998). ConceptBase - Managing Conceptual Models about Information Systems. In: P. Bernus, K. Mertins, G. Schmidt (eds.): Handbook on Architectures of Information Systems. Berlin et al.

Krickl, O. G. (1994). Business Redesign: Prozeßorientierte Organisationsgestaltung und Informationstechnologie. In: O. G. Krickl (Hrsg.): Geschäftsprozeßmanagement. Heidelberg, p. 17-38.

Langkabel, T. (2000). e-Government: Der Weg ist das Ziel. V.O.P. Special Edition 2, p. 6-8.

Millard, J.; Iversen, J.S.; Kubicek, H.; Westholm, H. and Cimander, R. (2004). Reorganisation of Government Back Offices for Better Electronic Public Services – European Good Practices. Volume 1: Main report, commissioned by: European Commission, Brussels.

Rosemann, M. (2003). Preparation of Process Modeling. In: J. Becker, M. Kugeler and M. Rosemann (Eds.). Process Management: A Guide for the Design of Business Processes. Berlin et al., p. 41-78.

Rosemann, M., and v.d.Aalst, W. (2003). A Configurable Reference Modelling Language. CITI Technical Report (2003-05).

Scheer, A.-W. (1999). ARIS – Business Process Modeling. Berlin et al.

Scholl, H.J. (2003). E-government: A Special Case of ICT-enabled Business Process Change. In: Proceedings of the 36th Hawaii International Conference on System Sciences (HICSS'03).

Schulte-Zurhausen, M. (2002). Organisation. 3rd Edition, Munich.

Schütte, R. (1998). Grundsätze ordnungsmäßiger Referenzmodellierung: Konstruktion konfigurations- und anpassungsorientierter Modelle. Wiesbaden.

Schwegmann, A.; Laske, M (2003). As-is Modeling and Process Analysis. In: J. Becker, M. Kugeler and M. Rosemann (Eds.). Process Management: A Guide for the Design of Business Processes. Berlin et al., p. 107-133.

Speck, M. and Schnetgöke, N. (2003). To-be Modeling and Process Optimization. In: J. Becker, M. Kugeler and M. Rosemann (Eds.). Process Management: A Guide for the Design of Business Processes. Berlin et al., p. 91-163.

Weidner, W. and Freitag, G. (1996). Organisation in der Unternehmung. Aufbau- und Ablauforganisation: Methoden und Techniken praktischer Organisationsarbeit. 5th Edition, Munich, Vienna 1996.

Wolf, P. and Krcmar, H. (2003). Wirtschaftlichkeit von elektronischen Bürgerservices - eine Bestandsaufnahme. In W. Uhr, W. Esswein, E. Schoop (Eds.). Wirtschaftsinformatik 2003, Medien - Märkte - Mobilität, Vol. I. Dresden, p. 917-936.

Yin, R. K. (1994). Case study research: Design and methods. 2nd ed. Thousand Oaks, CA.