



GUNTER SEIDEL, ANDREA BACK

Construction of a Method for Assessing the Likelihood of Burnout of Global ERP Programmes

Content

Summary	4
1 Introduction.....	5
2 Background	6
3 Construction of the Assessment Method	7
3.1 Design Approach.....	7
3.2 Method Construction	11
3.2.1 Activity Model	11
3.2.2 Documentation Model	13
3.2.3 Role Model.....	13
3.2.4 Techniques.....	15
3.2.5 Meta-Models	16
3.3 Activity Descriptions	16
4 Conclusions	19
References	20

Summary

Global enterprise resource planning (ERP) programmes are usually initiated top-down, but the ubiquitous access to company process information leads to the empowerment of trained employees at all levels of the company. The success of current global ERP programmes depends on a wide range of factors, which often are installed already in the early phases of a global ERP programme. Therefore, success can be predicted early on in the programme. The paper describes the construction of a predictive assessment method of success probability of global ERP programmes.

Keywords: assessment method, CSF, ERP, global, success factors.

1 Introduction

The number of companies operating globally is constantly increasing. This expansion applies to large corporations as well as small and medium-size enterprises. In order for these companies to operate globally, they require a global view of processes and their implementation in global enterprise resource planning (ERP) systems. These ERP systems allow to integrate an organization's information sources and to harmonize its processes across multiple sites and countries. Most ERP systems are based on software packages from companies like SAP or Oracle. ERP implementations are generally cost intensive and have a duration of many months or years.

But, not all global ERP programmes are successfully implemented. Some implementation projects fail in terms of classical project tracking, e.g. slippage of roll-out dates, budget overruns or missed scope objectives, while others fail more severely in their business impact, e.g. intended business benefits are not achieved including process standardization, process automation and asset carrying cost reduction. A report on ERP implementations in companies with more than \$500 million in revenues indicated an average schedule overrun of 230%, an average budget overrun of 178% and an average slide of functional improvements of 59% (Buckhout, Frey & Nemec Jr., 1999, p. 61).

To reduce the number of failed ERP programs, a method for assessing the likelihood of success of global ERP programmes is constructed in this paper. It is based on twelve success factors with two to seven associated management actions derived by prior research (Seidel, 2009).

This study was able to verify all twelve success factors and more than 80% of the associated management actions. The results form a predictive model of success probability of global ERP programmes. Use of this model may aid companies in developing effective global ERP programmes.

2 Background

Many companies of various sizes must decide the extent and means by which to support worldwide activities through globally-harmonized processes and systems. An example of a typical global ERP implementation based on a case study is extensively described in the literature by Sankar & Rau (2006). A detailed review of whether to implement an ERP system, categorization of the types of benefits to be expected and the guidelines in selection of ERP consultants, software and hardware vendors can be found in Davenport (2000).

One way to face this decision is to use a technical approach based on templates; this approach was defined about a decade ago. Huber *et al.* (2000) defined a template as "concepts or models for the standardization of processes, functions, and data that could be implemented in a physical (ERP) system" (Huber *et al.*, 2000, p. 4) and further defines a concept for standardization of company-wide ERP systems.

Necessary requirements to implement global ERP systems are investigated in Davidenkoff & Werner (2008). In particular the legal requirements, customs and user requests, but as well challenges in languages, address versions and time zones are reviewed (Davidenkoff & Werner, 2008, p. 37ff).

In general, Critical Success Factors (CSF) for implementing ERP programmes have been broadly analysed in the literature. Early investigation of CSF as Holland & Light (2003) were based on general case studies. Later Nah, Lau & Kuang (2001), Somers & Nelson (2001) and Al-Mashari, Al-Mudimigh & Zairi (2003) investigated CSF for the different phases of ERP programmes. While recent studies investigated CSF for specific settings as e.g. industry and size (Soja & Put, 2007), no comprehensive investigation of CSF for global ERP programmes was identified from literature.

Aspects of change management are always part of ERP implementations and have been investigated repeatedly. For example, Hossain *et al.* (2002) propagates the use of the "myth of integration", i.e. the vision of an integrated enterprise as the driver for change (Hossain *et al.*, 2002, p. 17ff). While the CSF list in the literature is extensive, it generally does not consider multi-national aspects of ERP implementation. However, a few papers have been dedicated to this subject. Huang & Palvia (2001) introduce a research framework to compare ERP deployment in developed and developing countries (Huang & Palvia, 2001). Multi-national

ERP implementation practices were shown to be affected by national differences, identified as culture and language, government/corporate politics, management style, government regulations, time zone and labour skills (Sheu, Yen & Krumwiede, 2003). The relationship between ERP implementation and a firm's competitive strategy has also been investigated and national culture and government/corporate policies, in particular, were found to have a significant impact on ERP deployment (Yen & Sheu, 2004).

3 Construction of the Assessment Method

Based in prior critical success factor research for global ERP programmes (Seidel & Back, 2009) a method for assessing the likelihood of success was to be constructed. In a first step a suitable design approach was identified. As a second step the assessment method was constructed following the selected approach. The last step was to describe each activity in details to operationalize the assessment method.

3.1 Design Approach

Becker *et al.* (2001) compares various approaches used to define methods. He makes a general statement that "a method is defined, according to the general understanding of the term, as a tuple of a type of task and a number of rules (in the sense of instructions)" (Becker *et al.*, 2001, p. 5ff, translation by the author). Methods must be based on principles in the sense of "guidelines to form the basis for action" (Becker *et al.*, 2001, p. 5ff, translation by the author).

Further requirements for methods are defined in Greiffenberg (2003). Methods should be goal-oriented and pragmatic. They should exhibit an instructive character, i.e., being systematic and enabling an engineering process. Finally, consistency is required, i.e., methods must not be contradictory and must be empirically verifiable and inter-subjectively reproducible.

Currently there is a scientific discourse ongoing about which fundamental attributes of methods are mandatory. These different views are summarised in Table 1.

	Balzer (1998)	Becker <i>et al.</i> (2001)	Brinkemper (1996)	Cronholm S. (1999)	Ferstl & Sinz (2006)	Greiffenberg (2003)	Gutzwiller (1994)	Karlsson & Ågerfalk	Kettinger <i>et al.</i> (1997)	Prakash (1999)	Punter & Lemmen	Scheer (1994)
Goal Orientation	X	X		X	X	X			X	X	X	
Systematic Approach	X	X	X	X	X	X	X		X		X	
Principles	X	X	X	X	X				X			X
Repeatability	X											X

Table 1: *Fundamental attributes of methods.*
Source: Braun *et al.* (2005).

Based on the fundamental attributes of methods, the necessary elements can be deduced. The central element of any method is a model of instructions in the sense of activities or rules for a systematic approach (which can be based on principles). Depending on the modelling view, these can be enhanced by roles, techniques, tools, results, and meta-models. An overview of the fundamental elements of methods is shown in Table 2.

	Balzer (1998)	Becker <i>et al.</i> (2001)	Brinkemper (1996)	Cronholm S. (1999)	Ferstl & Sinz (2006)	Greiffenberg (2003)	Gutzwiller (1994)	Karlsson & Ågerfalk	Kettinger <i>et al.</i> (1997)	Prakash (1999)	Punter & Lemmen	Scheer (1994)
Specification document		X	X				X	X		X	X	
Meta-model		X			X		X	X		X		
Role				X			X					
Technique		X	X				X		X		X	
Activity / Procedure model	X	X	X	X	X	X	X	X	X	X	X	X
Tool		X	X				X		X			

Table 2: *Fundamental elements of methods.*
Source: Braun *et al.* (2005).

Because the assessment method specified here for the burnout likelihood of global ERP programmes requires roles and a tool as fundamental parts, the method is specified according to Gutzwiller (1994).

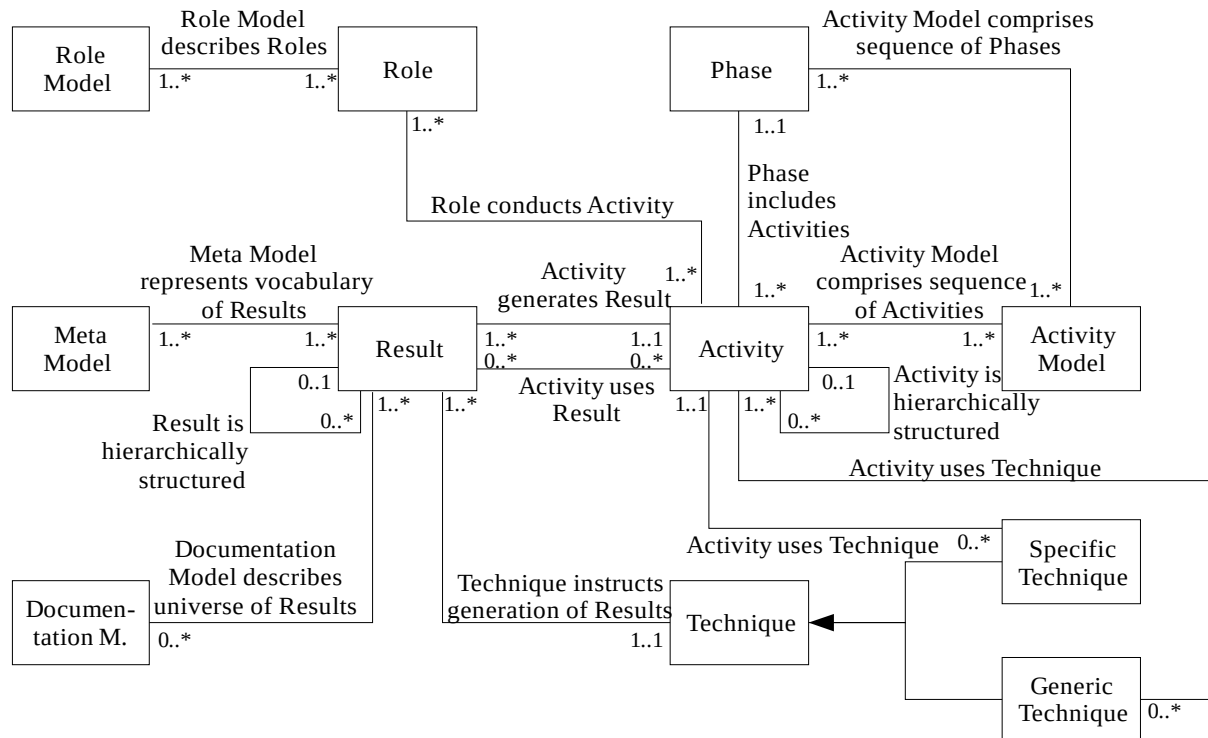


Figure 1: Elements of the method.
 Source: Wortmann (2006, p. 98, translation by the author).

The deployment of the method definition according to Gutzwiller (1994) in a number of current HSG dissertations was analysed by Wortmann (2006, pp. 97ff). It identifies a certain leeway in interpretation, which can be resolved by a small extension and definition of cardinalities. For this reason, the “phase”, “activity model”, “role model”, and “documentation model” entities were added, and the relationship between “activity” and “technique” was specified. The assessment method specified here for the burnout likelihood of global ERP programmes follows this refined definition and specifies the elements shown in Figure 1.

Braun *et al.* (2005) investigate various ways to construct methods based on a number of scientific publications. Although this paper indicates that, particularly in practice-oriented research, the primary approaches are action research and case studies, often deduction, ethnographic research, and creativity techniques are also included. Therefore, the basic approach of the assessment method for the burnout likelihood of global ERP programmes as indicated in the introduction (case studies, expert interviews, and surveys as in ethnographic research) and the later verification of the method using action research are valid means to construct the method.

The requirements for the development of the method are summarised in Table 3. The discussion of these elements follows the outline presented in Wortmann (2006).

Attribute	Characteristic value		
	<i>Construction</i>		Deployment
Scope	No universal validity		<i>Universal validity</i>
Universal validity	As-is procedure		<i>Reference procedure</i>
Recommendatory character	Deduction		<i>Induction</i>
Cognitive process	<i>Low</i>	High	Context sensitive
Degree of abstraction	No configuration	<i>Simple configuration</i>	Complex configuration
Configuration			

Table 3: *Attributes of the method to be developed.*

The scope of a method development can be either to construct the method or to deploy it in a specific context. The focus of this chapter is the construction of the method. The deployment of the method will be presented as an exercise in the next chapter to verify its applicability.

Universal validity describes whether the method can be deployed under as few restrictions as possible. In the definition of the research focus no restriction to a specific functional module or a specific geographical region was imposed. The limitation to SAP programmes rather than ERP programmes in general is due to the availability of research subjects. No references to specific functions, geographical locations, or package vendors were made in previous research, and therefore the claim of universal validity can be made.

Recommendatory character describes the extent to which a particular method can be considered a reference on how to execute a procedure. Although a final assessment can be made only after repeated use of the procedure and review of the results (vom Brocke, 2003, p. 31ff), clearly the aim to provide a reference has been expressed in this research.

While a method based on observation is constructed using an inductive cognitive process, a deductive process is based on existing scientific knowledge. Because the assessment method to be developed is derived from qualitative research based on expert interviews, verified by quantitative survey-based research, and embedded in the practical know-how observed in case studies, the development of this method clearly follows the inductive path.

A high degree of abstraction makes it possible to generalise a method and to leave the details of implementation to the deployment phase. In the opposite case, the execution of the me-

thod is presented in great detail and the techniques and tools to be used are specified. This enables quick execution, but at the cost of a more limited focus. A context-sensitive approach could use either strategy based on predefined selection criteria. Because the focus of this assessment method is narrowly defined, it would not benefit from a high degree of abstraction, but would rather suffer from insufficiently defined tools and techniques. Therefore, a low degree of abstraction was deliberately chosen.

Global ERP programmes differ in geographical and functional coverage as well as in role assignments. To be able to handle these variations, a number of simple configurations were introduced into the method. Complex configuration of the method were deemed neither necessary nor feasible within the scope of this research.

3.2 Method Construction

3.2.1 Activity Model

The activity model shown in Figure 2 describes the activities which must be carried out during the assessment of a global ERP programme. These activities are grouped into phases based on the flow of time. The flow of time between and, if applicable, within phases is shown by the dotted arrows. The flow of information between activities and phases is shown as solid arrows.

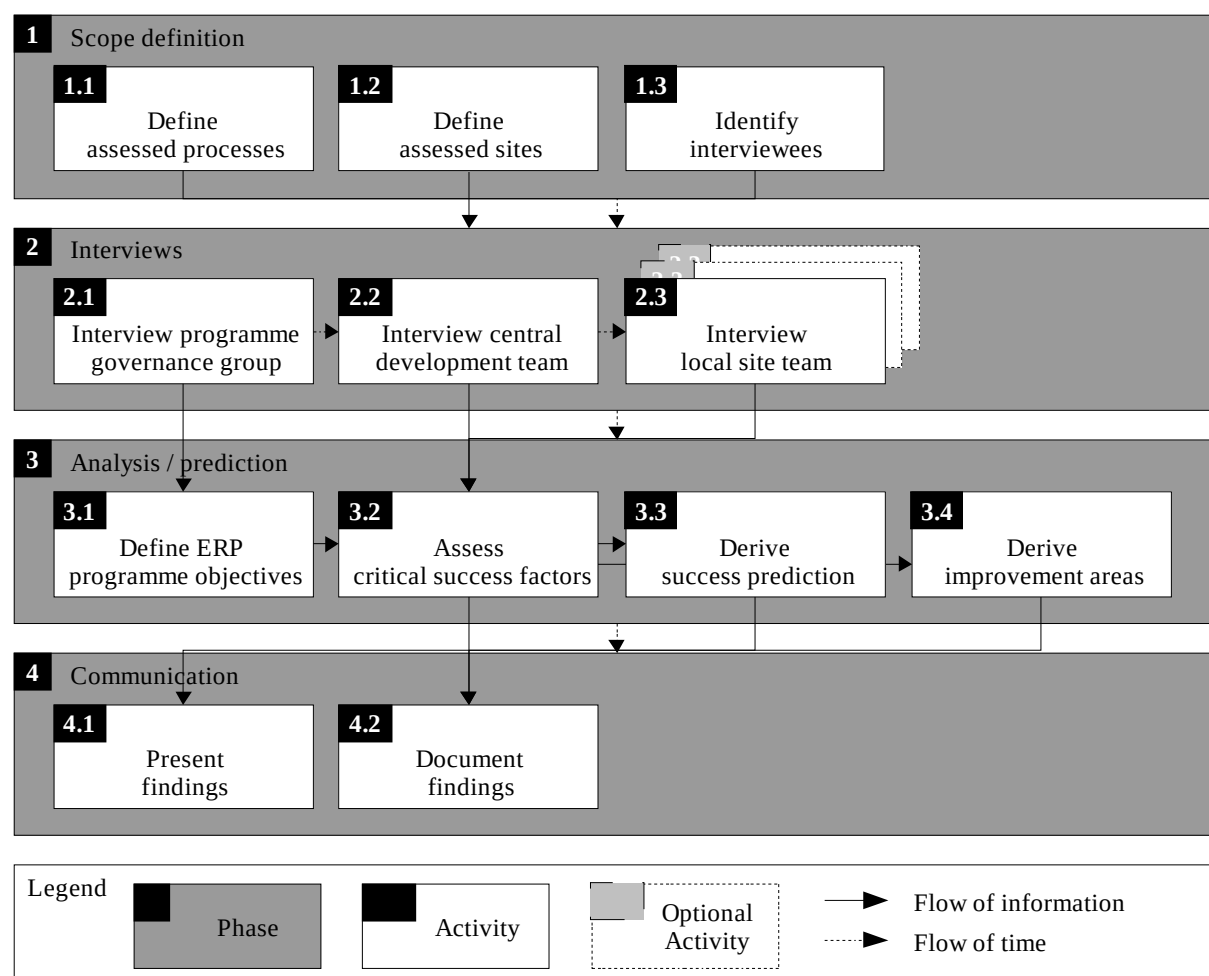


Figure 2: Activity model.

Phase 1, “Scope definition”, involves reaching an agreement with the sponsor of the assessment regarding the scope of the assessment. It starts out by defining which processes are to be assessed (1.1); based on the nature of the processes and where they are implemented, the site to be assessed can be defined (1.2). Only then is it possible to select the people to be interviewed based on functional and geographical scope (1.3).

Scope definition is the major task in phase 2, “Interviews”. Here the appropriate sequence is to interview first the programme governance group (2.1), then the central development team (2.2), and finally the local site team (2.3). Additional site interviews are indicated as optional depending on the agreement regarding geographical scope to enable the configuration of the method. Depending on practical considerations, a certain degree of flexibility in the order of interviews is acceptable.

Phase 3, “Analysis / prediction”, starts to define the ERP programme objectives (3.1) for the specific case based on senior management interviews. This definition must be considered

when the critical success factors are assessed (3.2) based on all interviews. These CSF assessments are used to derive the success prediction (3.3) and the improvement areas (3.4).

In phase 4, “Communication”, the final results are presented (4.1) in the form of (possibly multiple) presentations and documented (4.2) in the form of a final report for reference.

3.2.2 Documentation Model

The documentation model describes the documentation of the results throughout the execution of the assessment method for global ERP programmes. It is a hierarchical model leading to the key results developed in phase 4. The documentation model distinguishes between result documents and support documents. Result documents may or may not be used as support documents in later phases (indicated by the respective number of each support document). An overview of the documentation model can be found in Table 4.

Activity	Result Document	Support Document
Activity 1.1 – Define Assessed Processes	Functional scope	
Activity 1.2 – Define Assessed Sites	Geographical scope	1.1
Activity 1.3 – Identify Interviewees	Interviewee list	1.1-2
Activity 2.1 – Interview Programme Governance Group	Interview transcript	Interview guide, 1.1-3
Activity 2.2 – Interview Central Development Team	Interview transcript	Questionnaire, 1.1-3
Activity 2.3 – Interview Local Site Team	Interview transcript	Questionnaire, 1.1-3
Activity 3.1 – Define ERP Programme Objectives	Objective Definition	2.1
Activity 3.2 – Assess Critical Success Factors	CSF assessment	2.2 / 2.3
Activity 3.3 – Derive Success Prediction	Success Prediction	3.1 / 3.2
Activity 3.4 – Derive Improvement Areas	List of improvement areas	3.1 / 3.2 / 2.2 / 2.3
Activity 4.1 – Present Findings	Presentation	1.1-3 / 3.1-4
Activity 4.2 – Document Findings	Final Report	1.1-3 / 3.1-4

Table 4: Documentation model.

The documents summarised in the documentation model will be detailed in the descriptions of the individual activities.

3.2.3 Role Model

The role model in the case of the assessment method has the primary objective of defining the right sources of information for a global ERP programme. From prior case study research (Seidel, 2009), a number of organisational elements were captured, as outlined in Table 5.

Organisational Element	Source of induction	Case A	Case B	Case C
Steering committee	Sponsorship established and managed	X	X	X
Programme management	Established as cross-divisional function		X	X
Central project team	Central team with oversight on all roll-outs	X	X	X
Business process owner	Central responsibility for process assigned		X	X
Template development team	Central group of in- or outsourced technicians	X	X	X
Local site managers	Local sponsorship, local project structure	X		X
Local process experts	Involvement of subject matter experts		X	X
Site roll-out support structure	To be established before roll-out	X	X	X
Quality assurance	Explicit external function		X	

Table 5: Sources for organisational elements defined.

The organisational elements identified above were translated into a generic role model for global ERP programmes as shown in Figure 3. The assessor role responsible for the execution of the assessment method defined here can be found as the “project assessor” role under “quality assurance”.

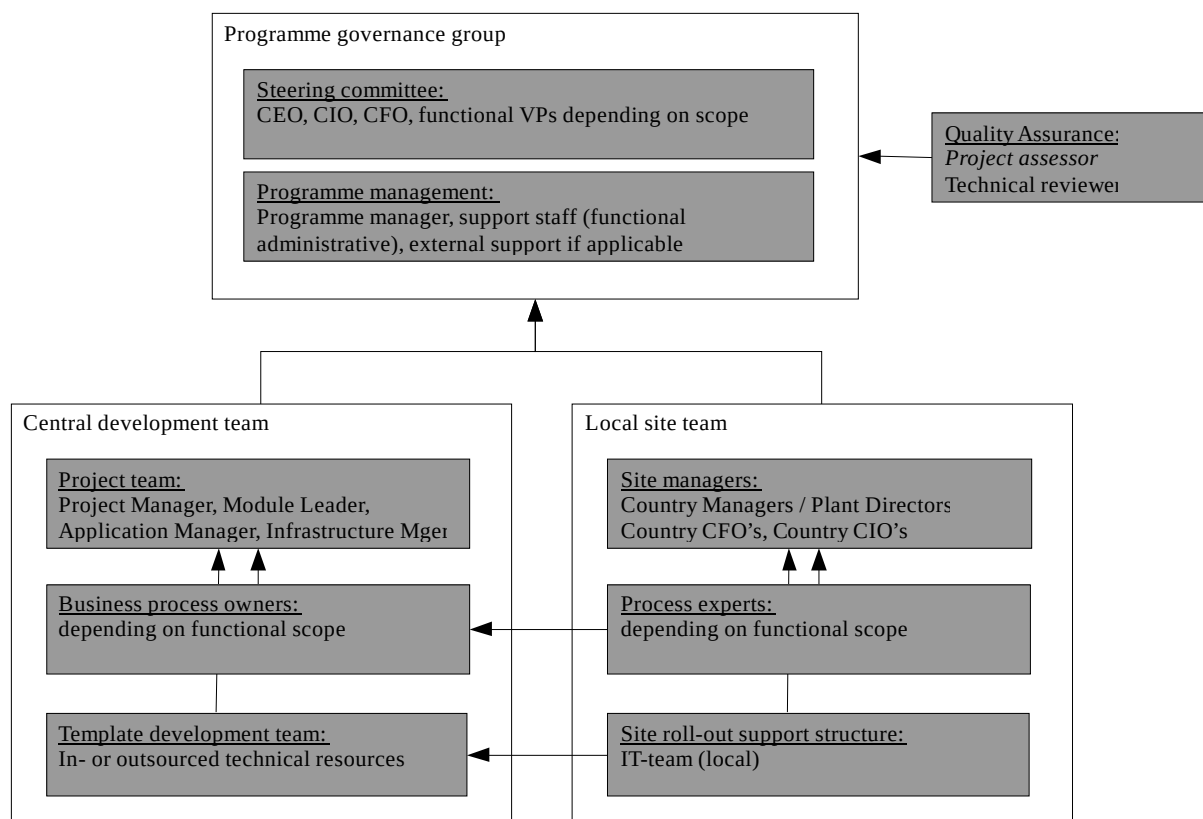


Figure 3: Generic organisation chart for global ERP programmes.

The roles defined in the role model will be referenced in the specific activities defined in the activity model as sources of information. The functional roles which are used there depend on the functional scope of the programme being assessed. The role of “project assessor” is responsible for all activities and therefore does not need to be explicitly repeated under each activity.

3.2.4 Techniques

Techniques can be divided into generic techniques, which can be used on any type of assessment project, and specific techniques, which are focused on assessment projects for global ERP programmes.

The generic techniques used are meetings, interviews, desk research, and presentations:

- Meetings are used to obtain agreement within a small group of individuals about project objectives. They are different from interviews in that they intend to obtain agreement rather than to gather information. Meetings can be held in the form of face-to-face interactions, web conferences where participants share a common desktop PC remotely, or teleconferences where two or more people interact by phone.
- Interviews can be conducted either in a closed form, strictly following a questionnaire, or in an open form, loosely following an interview guide. The open form is normally used for senior management interviews to capture the objectives of the ERP programme which may differ widely from one company to another. The closed form is used for project and site management interviews where completeness of the management actions driving the critical success factors is more important than capturing less well-defined views and intentions.
- Presentations are used to communicate the results of the assessment verbally in addition to the documentation of the findings in the final report.
- Desk research describes those activities of the project assessor which are performed individually. Here the specific techniques described in the individual activities are used as well.

The specific technique used is the implementation of the critical success factor model derived in the previous chapters during Activity 3.2 – Assess Critical Success Factors and Activity 3.3 – Derive Success Prediction. It is described in detail in the activity description.

3.2.5 Meta-Models

A meta-model is characterised by Gutzwiller (1994) as a “conceptual data model of the design results” (Gutzwiller, 1994, p. 14, translation by the author). Ferstl & Sinz (2006) define a meta-model as a set of “available types of model building blocks, the types of relationships between them, and the rules and meaning (semantics) of model building blocks and relations” (Ferstl & Sinz, 2006, p. 125, translation by the author). Although meta-models are useful for constructive methods, such a model would be redundant to the documentation model added by Wortmann (2006, p. 99) in the case of an analytic method. Because the assessment method constructed here is an analytic method and a documentation model was described earlier, no meta-model is used here.

3.3 Activity Descriptions

Activity 1.1 – Define Assessed Processes entails a review with the sponsor of the assessment of its functional scope. The assessment sponsor must come from the programme governance group and can either be a steering committee member (preferred) or the programme manager. The resulting functional scope document is used to focus the subsequent selection of sites and interviewees and to provide a frame for the assessment.

Activity 1.2 – Define Assessed Sites entails a review with the sponsor of the assessment (as defined in Activity 1.1 – Define Assessed Processes) of its geographical scope. To develop a comprehensive understanding of the status of the ERP programme, at least the major two to three roll-out sites should be included. This review could be extended to all sites depending on the required degree of thoroughness in the analysis. The resulting geographical scope document is used to focus the subsequent selection of interviewees and to provide a frame for the assessment.

Activity 1.3 – Identify Interviewees entails a review with the sponsor of the assessment (as defined in Activity 1.1 – Define Assessed Processes) of the list of interviewees. The selection is based on the generic organisation chart (Figure 3) adjusted for the agreed-upon functional and geographical scope. The sponsor must name the individuals and ensure that the interviewees make themselves available for the interviews. The interviewee list forms the basis for phase 2.

Activity 2.1 – Interview Programme Governance Group entails open interviews with the senior management personnel identified in Activity 1.3 – Identify Interviewees. Because the interviews are in an open style, they are aided by an interview guide rather than a questionnaire. The interview guide to be used can be found in Seidel (2009). One of the key outcomes of the senior management interviews is an understanding of company strategy and the objectives of the ERP programme.

Activity 2.2 – Interview Central Development Team entails closed interviews with the central development team as identified in Activity 1.3 – Identify Interviewees. The interviews must capture the management actions needed to drive the critical success factors comprehensively, and therefore the interviews must be conducted in a closed style based on a questionnaire. The questionnaire to be used is shown in Seidel (2009).

Activity 2.3 – Interview Local Site Team entails closed interviews with the local site team as identified in Activity 1.3 – Identify Interviewees. The interviews must capture the management actions needed to drive the critical success factors comprehensively, and therefore the interviews must be conducted in a closed style based on a questionnaire. The questionnaire to be used can be found in Seidel (2009). Here, depending on the geographical scope agreed upon in Activity 1.2 – Define Assessed Sites, optional repetition of the interview series for as many sites as agreed upon constitutes a simple reconfiguration of the assessment method.

Activity 3.1 – Define ERP Programme Objectives is a desk research activity in which the results of the interviews with the programme governance group are analysed and the objective definition of the global ERP programme is documented. This objective definition is required subsequently to assess the critical success factors.

Activity 3.2 – Assess Critical Success Factors is a desk research activity in which the results of the interviews with the central development team and local site teams are analysed and the critical success factors evaluated.

Each answer given is compared against the scale defined in the questionnaires (Seidel, 2009) with reference to the programme objective whenever applicable. According to the scale, a score is defined for each management action. Management actions with multiple aspects are packaged, i.e., equally averaged. Weighted averages of the management actions are calcu-

lated using the weights defined in (Seidel & Back, 2009) to construct the score of each critical success factor.

Activity 3.3 – Derive Success Prediction is a desk research activity in which, for both “Project Objectives” and “Programme Objectives”, weighted averages of the relevant success factors as identified in Seidel & Back (2009) are calculated to generate an overall prediction.

The overall prediction for “Project Objectives” indicates to what extent the global ERP programme under assessment will be completed on-time, in-budget, and in-scope. The overall prediction for “Programme Objectives” indicates to what extent the programme will reach its business improvement goals and cost savings objectives.

To define the burnout likelihood, the assessment of “Project Objectives” is used, because ERP programmes with insufficient project performance are generally those which experience problems with overruns, business disruptions, and eventual cancellation. Problems with “Programme Objectives” usually materialise after a longer sustained period, and a failure to meet these objectives cannot be considered a burnout (although these programmes still fail fundamentally). The cut-off value for defining an ERP programme as burnout-prone must be decided case by case. Further deployment of the assessment method and study of eventual outcomes are needed to provide a firm recommendation for the cut-off value.

Activity 3.4 – Derive Improvement Areas is a desk research activity in which critical success factors with a low performance are further analysed based on the interview transcripts to provide recommendations for improvement. Here, classical qualitative skills are needed, guided by quantitative analysis of the critical success factors.

Activity 4.1 – Present Findings brings together the results of phase 3 and packages them for oral and interactive communication to the sponsor of the assessment and other stakeholders from the programme governance group as requested by the sponsor. In case of highly distributed ERP programmes, this may require optional repetitions of the presentation, which constitutes a simple reconfiguration of the assessment method.

Activity 4.2 – Document Findings brings together the results of phase 3 and packages them for written communication and future reference. This is the final outcome of the assessment method and constitutes the end of the assessment.

4 Conclusions

Although many elements of the method are based on empirical research, such as the role model and the specific techniques, no evaluation of the entire method as constructed has yet taken place. Therefore, in its described state, the assessment method can be deemed only a proposed method.

References

- Al-Mashari, M., Al-Mudimigh, A. & Zairi, M. (2003) Enterprise resource planning: A taxonomy of critical factors. *European Journal of Operational Research*, 146, 352-364.
- Balzert, H. (1998) *Lehrbuch der Software-Technik*, Spektrum Akademischer Verlag, Heidelberg.
- Becker, J., Knackstedt, R., Holten, R., Hansmann, H. & Neumann, S. (2001) *Konstruktion von Methodiken: Vorschläge für eine begriffliche Grundlegung und domänenspezifische Anwendungsbeispiele*. Westfälische Wilhelms-Universität Münster, Institut für Wirtschaftsinformatik, Arbeitsbericht.
- Braun, C., Wortmann, F., Hafner, M. & Winter, R. (2005) *Method Construction – A Core Approach to Organizational Engineering*. Proceedings of the 2005 ACM Symposium on Applied Computing. Santa Fe, New Mexico, USA .
- Brinkkemper, S. (1996) Method engineering: engineering of information systems development methods and tools. *Information and Software Technology*, 38, 275-280.
- Buckhout, S., Frey, E. & Nemec Jr., J. (1999) Making ERP Succeed. Turning Fear into Promise. *Strategy & Business* (Booz Allen Hamilton), 15, 60-72.
- Cronholm S., Å. P. (1999) On the Concept of Method in Information Systems Development. Proceedings of the 22nd Information Systems Research In Scandinavia (IRIS 22). Keuruu, Finland 7.-10.08.1999.
- Davenport, T. H. (2000) *Mission Critical*, Harvard Business School Press, Boston, Massachusetts.
- Davidenkoff, A. & Werner, D. (2008) *Globale SAP-Systeme - Konzeption und Architektur*, Galileo Press, Bonn.
- Ferstl, O. K. & Sinz, E. J. (2006) *Grundlagen der Wirtschaftsinformatik*, 5. Aufl. R. Oldenbourg, München.
- Greiffenberg, S. (2003) Methoden als Theorie der Wirtschaftsinformatik. In: *Wirtschaftsinformatik 2003 Band II*, Uhr, W., Esswein, W. & Schoop, E. (eds.), pp. 947-968. Physica-Verlag, Heidelberg.
- Gutzwiller, T. A. (1994) *Das CC RIM-Referenzmodell für den Entwurf von betrieblichen, transaktionsorientierten Informationssystemen*, Physica-Verlag, Heidelberg.

-
- Holland, C. P. & Light, B. (2003) A Framework for Understanding Success and Failure in Enterprise Resource Planning System Implementation. In: Second-Wave Enterprise Resource Planning Systems, Seddon, P.B., Shanks, G. & Willcocks, L.P. (eds.), pp. 180-195. Cambridge University Press, Cambridge, UK.
- Hossain, L., Patrick, J. D. & Rashid, M. A. (2002) Enterprise Resource Planning. Global Opportunities & Challenges, Idea Group Publishing, Hershey.
- Huang, Z. & Palvia, P. (2001) ERP implementation issues in advanced and developing countries. *Business Process Management Journal*, 7, 276-284.
- Huber, T., Alt, R. & Österle, H. (2000) Templates - Instruments for Standardizing ERP Systems. Proceedings of the 33rd Hawaii International Conference on System Sciences. Maui, Hawaii 04-07.01.2000.
- Karlsson, F. & Ågerfalk, P. J. (2004) Method configuration: adapting to situational characteristics while creating reusable assets. *Information and Software Technology*, 46, 619-633.
- Kettinger, W. J., Teng, J. T. C. & Guha, S. (1997) Business process change: A study of methodologies, techniques, and tools. *MIS Quarterly*, 21, 55-80.
- Nah, F. F., Lau, J. L. & Kuang, J. (2001) Critical factors for successful implementation of enterprise systems. *Business Process Management Journal*, 7, 285-296.
- Prakash, N. (1999) On method statics and dynamics. *Information Systems*, 24, 613-637.
- Punter, T. & Lemmen, K. (1996) The MEMA-model: towards a new approach for Method Engineering. *Information and Software Technology*, 38, 295-305.
- Sankar, C. S. & Rau, K. (2006) Implementation Strategies for SAP R/3 in a Multinational Organization: Lessons from a Real-World Case Study, Cybertech Publishing, Hershey.
- Scheer, A. (1994) EDV-orientierte Betriebswirtschaftslehre, 4. Aufl. Springer, Berlin.
- Seidel, G. (2009) A Method for Assessing the Likelihood of Burn-out of Global ERP-Programmes. PhD thesis, Verlag Dr. Kovač, Hamburg, HSG.
- Seidel, G. & Back, A. (2009) Success Factor Validation for Global ERP Programmes. European Conference on Information Systems. Verona, Italy 8.-10.06.2009.
- Sheu, C., Yen, H. R. & Krumwiede, D. W. (2003) The effect of national differences on multinational ERP implementation: an exploratory study. *Total Quality Management & Business Excellence*, 14, 641-657.
-

- Soja, P. & Put, D. (2007) Learning from Model ERP Projects. *International Journal of Enterprise Information Systems*, 3, 50-67.
- Somers, T. M. & Nelson, K. (2001) The Impact of Critical Success Factors across the Stages of Enterprise Resource Planning Implementations. *Proceedings of the 34th Hawaii International Conference on System Sciences*. Maui, Hawaii 03-06.01.2001.
- vom Brocke, J. (2003) Referenzmodellierung. Gestaltung und Verteilung von Konstruktionsprozessen, Logos, Berlin.
- Wortmann, F. (2006) Entwicklung einer Methode für die unternehmensweite Autorisierung. PhD thesis, Difo-Druck GmbH, Bamberg, HSG.
- Yen, H. R. & Sheu, C. (2004) Aligning ERP implementation with competitive priorities of manufacturing firms: An exploratory study. *International Journal of Production Economics*, 92, 207-220.

University of St. Gallen

Institute of Information Management

Müller-Friedberg-Str. 8

CH-9000 St. Gallen

Switzerland

Phone: +41 (0) 71 224 2545

www.iwi.unisg.ch – www.business20.unisg.ch

Prof. Dr. Andrea Back: andrea.back@unisg.ch

Dr. Gunter Seidel: gunter@gunter-seidel.de