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Employee's Acceptance of Process Innovations: An Action Research Approach

Michael Amberg

Steffen Möller

Ulrich Remus

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Michael Amberg, Steffen Möller, Ulrich Remus
Business Information Technology
University Erlangen-Nuremberg
Lange Gasse 20, 90403 Nuremberg, Germany
Phone: +49-911-5302-801, Fax: +49-911-5302-860

Amberg@wiso.uni-erlangen.de,
Steffen.Moeller@wiso.uni-erlangen.de,
Ulrich.Remus@wiso.uni-erlangen.de

Abstract: Organizational changes are becoming more and more important due to increasing competition and rapid technological evolution. However, the intended benefits of organizational changes depend strongly on how effectively process innovations are implemented within an organization. Hereby, the management of the employee's acceptance is considered as one of the most critical tasks in change management projects.

Normally, employee acceptance is evaluated using theory-based acceptance models. We start by reviewing the existing process innovation-related acceptance models. In a next step, we describe a new model, called DART, which is based on the idea of the balanced scorecard, using a meta-structure in order to identify a balanced set of individually measurable acceptance criteria. Guided by an action research approach, we further describe a case example showing the application of DART in a process reengineering project.

We close our paper by reviewing the consequences of our research, as well as the suitability of DART in the research context. The results presented in this paper are expected to have important implications for both, researchers who should benefit from a very flexible acceptance model as well as managers and process designers who should gain valuable insights for their change implementation efforts.

Keywords: Process Reengineering and Redesign, Employee Acceptance, Process Innovation, DART, Action Research.

I. Introduction

Organizational changes are becoming more and more important due to increasing competition and rapid technological evolution. In order to successfully implement these changes, concepts of business process redesign have been introduced to improve performance and raise customer satisfaction.

However, the benefits of process redesign projects strong- ly depend on how effectively these process innovations are implemented within an organization. Researchers as well as practitioners agree on employee's acceptance being a key success factor in change implementation projects ([23], [13], [18]). Neglecting employee's acceptance can cause resistance among employees, often leading to project failures.

Thus, the management of employee's acceptance is a crucial task in change management projects. According to DeMarcos "you can neither predict nor control what you cannot measure" ([15]), the detailed measurement of employee's acceptance is considered as a fundamental part in achieving this goal. Based on the acceptance evaluation, context-specific measures and actions can be taken, improving the overall acceptance of process innovations.

Usually, acceptance is evaluated with the help of theory-based acceptance models. Much research has been done at the organizational level, exploring the diffusion and the adoption of process innovations within an organization (i. e. [14], [16], [34], [33]). In contrast, on the individual level, only little research is done exploring individual reasons why employees accept or reject process innovations ([19], [22]).

Consequently, our research questions to guide this paper are: "What factors influence an employee's acceptance of a redesigned business process?" and "How can these factors be used to generate appropriate measures and actions to improve employee's acceptance?"

In order to answer these questions, we start by reviewing the existing acceptance models, which are focusing on the individual level. We then describe a new model, called DART which is based on the idea of the balanced scorecard using a meta-structure in order to identify a balanced set of individually measurable acceptance criteria. After the specification of the model, we describe a case example showing the application of DART in a process reengineering project guided by an action research approach. We close this paper with reviewing the consequences of our research as well as the suitability of the DART approach with regard to the research context.

II. Review of Existing Acceptance Models on the Individual Level

Process innovations are defined as "any innovation that changes the way a job is performed" ([20]). In general,

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acceptance is defined as an antagonism to the term refusal and means the positive decision to use a (process) innovation ([5]). Acceptance research has its origin in both, industrial and business science. While industrial science focuses on the conditions of user friendly technologies and techniques, the business science discusses acceptance in various disciplines, e. g. marketing, organization, production theory and information systems research ([2]).

Here, employee's acceptance is discussed mainly from the perspective of organization theory and information systems research. Two classes of models can be distinguished ([20]): intentional models focusing on social and psychological issues and technology-related models focusing on process supporting technologies.

Intentional models highlight the intention of individual employees, in most cases unspecific to process innovation characteristics. Consequently, psychological models like the Theory of Reasoned Action (TRA, [17]), the Theory of Planned Behavior (TBP, 0), and the Goal-Setting Theory (GST, [21]) are applied.

The second class considers organizational changes by combining process and technological innovations. They usually rely on marginal extensions of technology acceptance models like the Technology Acceptance Model (TAM, TAM2 [12], [37]) or the Task-Technology Fit model (TTF, [19]).
Table 1 provides an overview of common models together with their core constructs and a brief summary.

Table 1: Overview of common models utilized for the acceptance analysis of process innovations

Acceptance model	Core constructs	Short summary
TRA	Attitude toward behavior and subjective norm	TRA is one of the most fundamental and widely-used theories of human behaviors drawn from social psychology.
TBP	Attitude toward behavior, subjective norm, and perceived behavioral control	TBP extends TRA by adding the construct of perceived behavioral control.
GST	Situational and personal factors influencing the valence and the expectancy of goal attainment	Individuals use their personal and situational beliefs and attitudes to formulate goal commitments before taking action.
TAM (TAM2)	Perceived usefulness, perceived ease of use, (subjective norm)	TAM/TAM2 is designed to predict information technology acceptance and usage on the job.
TTF	Technology, task, individual	Task-oriented approach to address the acceptance of IT systems in a specific job context.

Previous studies, which compared the explanatory power of the difference classes of models revealed, that none of the classes is superior (cf. [30]). As consequence, integrated models, using elements from both, intentional as well as technological-related models are developed and discussed in literature (cf. [36], [38]).

Although both classes of acceptance models are based on mature research areas providing valuable insights, the unspecific foundation of the models leads to an important problem: Specific acceptance criteria related to process innovations are widely ignored due to the limited perspective of the adapted models.

To address this shortcoming, a generic but adaptable framework considering process innovations is needed. A framework, which helps to identify individually important, measurable and independent acceptance criteria, is presented in the following section.

III. Specification of the DART Acceptance Model

DART is a highly flexible acceptance model, designed for the analysis and evaluation of user and employee acceptance in a variety of different application areas, e. g. situation-dependent mobile services, web based aptitude tests and enterprise portals (cf. [2], [3], [4], [5]).

According to Amberg et al., the fundamental design criteria of DART are:

- The use as a permanent controlling instrument,
- A balanced consideration of relevant influencing factors,
- The applicability during the whole development and implementation process, and finally
- The adaptability to individual requirements of the research item ([2]).

These design criteria are useful to integrate acceptance analysis into the development, evaluation, and implementation of process innovations. In the following, we describe the architecture of DART.

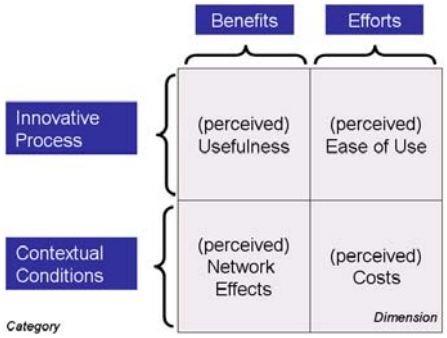
III. 1 Architecture of DART

DART is based on the idea of the balanced scorecard using a meta-structure in order to identify a balanced set of individually measurable acceptance criteria ([25]). As a key characteristic, DART's meta-structure emphasizes the employee's individual point of view by an explicit consideration of the employee's perception ([39]).

DART uses the following complementary and orthogonal categories:

- Benefits and Efforts comprising all positive and negative facets of process innovations (cf. TAM, TTF).
- Process Innovation and Contextual Conditions including basic socio-cultural and economic conditions, which also have an important impact on employee's acceptance (cf. TRA, TBP, and GST).

Fig. 1: Meta-structure of the DART acceptance model



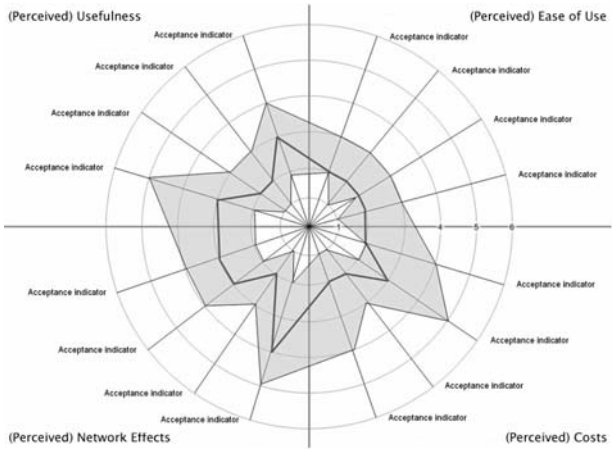
These categories lead to four acceptance dimensions that are relevant for an in-depth analysis of the employee's acceptance (Fig. 1):

- (Perceived) Usefulness, build by the categories benefits and process innovation, describes the individually perceived usefulness of a process innovation (cf. [12], [37]). Acceptance criteria of this dimension might be employee motivation or change demand.
- (Perceived) Ease of Use, characterized by the categories of process innovation and efforts explain the degree to which a person believes that using a particular process innovation would be free of effort (cf. [37]). Criteria measuring this dimension are for example the adaptation effort or the process complexity.
- (Perceived) Network Effects: The categories benefits and contextual conditions lead to the dimension of perceived network effects. The dimension considers the contextual aspects of a process innovation depending on economical, social and organizational factors (cf. [17]). Stakeholder Support and External Motivation are typical criteria to measure this dimension.
- (Perceived) Costs finally formed by the dimension contextual conditions and efforts describe the monetary and non-monetary efforts not directly associated with the process innovation itself (cf. [19], [21], [11]). Suitable acceptance criteria might be Individual Uncertainty or Risks.

The resulting structure supports a systematical identification of acceptance criteria. According to the BSC approach, the intention is to find a set of precise criteria with high significance, meeting the requirements of sustainability, measurability, achievability, reasonability and timeliness. No complete set of acceptance criteria is defined in advance; rather they have to be defined according to the concrete research item.

In addition to the meta-structure, DART provides a visualization approach for an appropriate visualization of the employee's acceptance. DART's visualization approach is based on spider charts, being composed of several radial spokes, one representing each acceptance criteria. The acceptance criteria themselves are structured by the means of the DART meta-structure, which means, they are classified in the DART categories and dimensions (cf. Fig 2).

Fig. 2: Visualization approach of DART (DART chart)



The results of the acceptance evaluation should be quantified and normalized, e. g. by using a scale from one to six as shown on the horizontal axis in the figure above. The minimal value is located near the center of the chart (e. g. the value of one) illustrating a high acceptance level, while the maximum value near the border of the chart (e. g. the value of six) indicates a low acceptance level.

Using this scale together with the meta-structure of DART, an individual acceptance curve can be drawn (bold black line in the figure). This acceptance curve represents the average acceptance level for each acceptance criteria (the statistical median). The statistical spread resulting from the spread of opinions in the survey could be used to draw a surface (utilizing the upper and the lower quartile, cf. [39]).
According to the visualization, acceptance criteria receiving a median located in the upper range of the scale (e. g. in the range four up to six), are considered as acceptance challenges. With regard to the statistical spread, acceptance challenges are considered as critical if the lower quartile (the outward bound of the gray area) reaches the highest possible acceptance level (e. g. the value of six). This indicates that a significant number of employees strongly disagree with the process innovation.

The used presentation is similar to the popular dart game where a dart hitting the centre of the disc denotes the highest possible score. By means of this visualization approach, potential acceptance challenges and resistances can easily be identified, addressed and eventually be reduced. In the next section, we describe a case example that shows the application of DART within a process reengineering project.

IV. Case Example: Application of the Acceptance Model

According to the research questions identified in the first section, the case example has two main goals: First, to analyze the general applicability and explanatory power of DART by generating suitable acceptance criteria, and second

to analyze DART's ability to generate appropriate measures and actions together with a review of the impact of those interventions.

IV. 1 Research Method

Because of the character of the acceptance evaluation, i.e. to provide insights and modifications to the research item, a research design supporting these interventions was necessary. According to Iverson et al., action research was chosen to be suitable ([23]).

Action research is defined as a widely-used class of iterative research methods aiming at solving practical problems ([35]). The use of action research is expected to produce "highly relevant research results, because it is grounded in practical action, aimed at solving an immediate problem situation while carefully informing theory" ([6]).

The central idea of action research is that complex processes can be studied best by introducing changes into the real world and observing the impact of those changes ([7]). Thus, intervention is the main instrument for knowledge generation in action research. Mingers consequently categorizes action research as an interventional, post-positivist research approach ([31]).

Action research was originally developed for the use in social sciences by Lewin ([26], [28]) and therefore has a long tradition in studying individual behavior. In the past, action research has led to a huge variety of specialized action research methods, detailed by Baskerville & Wood-Harper in [8].

In this research, we apply Checkland's action research cycle as one of the most widely used approaches ([9]). Checkland uses the following elements in his specification: an intellectual framework of linked ideas or a theory, a methodology of using this framework, and finally an area of application with specific research questions.

Checklands action research cycle is composed by the following activities: Initiating, Iterating, and Closing. First, the concrete problem situation is entered by the researcher (Initiating). This includes the appreciation of the problem situation as well as a literature study of the concepts and existing models.

The second step (Iterating) comprises several activities, starting with the establishment of the roles of the researcher and practitioner in the corresponding area of research. Moreover, the research framework and the research methodology are based on literature study and practical experiences. Based on this framework, changes to the area of application are planned and scheduled. After that, researchers and practitioners take part in the change process. The second step closes with rethinking about the implemented changes and their effects. This in turn can produce two results: On the one hand, the effects of the implemented change may produce the expected outcome, thus, the cycle can be considered as successful and the loop can be exited. On the other hand, the reflection may show that an additional iteration is needed to rethink the framework and/or the implemented change. In this case, the iterating phase starts again with the establishment of the roles.

In a last step, all experiences of the research are carefully reflected (Closing). This includes the refined framework, the changes on the problem situation itself as well as their impact, and eventually the suitability of the methodology itself.

In our case, the intellectual framework to be researched would be the DART approach. The methodology for using this framework would be the action research cycle by Checkland.

The selected area of application is a German company offering products and process-orientated services to the healthcare industry worldwide. At present, the company is dealing with the improvement and standardization of its IT processes aiming at a more effective, efficient and service-oriented structure. In order to achieve this goal the management chose to implement the IT Infrastructure Library (ITIL) standard in the IT Infrastructure division.

Our research was scheduled for eight months and included two complete action research cycles. The key activities of this study took place from December 2004 to July 2005. In the following section we start by describing the problem situation of our research in detail.

IV. 2 Initiating

The project presented in this paper focuses on the ITIL-based redesign and implementation of the technical change management process, which rules software and hardware changes to the production system. The project was chosen to be an interesting research item because of the following reasons: The project is of high strategic relevance, it affects a high number of employees (81) and the project could be accompanied through all important stages. At the beginning of our research, the process design team had already completed the as-is analysis and currently works on the redesign of relevant processes.

The impact of the changes varied across the seven teams of the IT infrastructure division. While the teams IT-Network and IT-Systems Management were considered to be affected in a major way, the other five teams were influenced in a less direct way.

Prior to the acceptance analysis itself, four brainstorming sessions were held to identify the key acceptance criteria. These workshops were attended by researchers and practitioners.

In further meetings, a total of 20 key acceptance criteria were identified and taken as basis for the subsequent analysis:

- (Perceived) Usefulness: Anticipated average life, change demand, employee motivation, transparent competences, and potential usefulness
- (Perceived) Ease of Use: Efficiency & effectiveness, integrity, employee integration, adaptation effort, and process complexity

- (Perceived) Network Effects: Communication, change agent qualification, organizational flexibility, stakeholder support, and external incentives
- (Perceived) Costs: Individual uncertainty, implementation costs, ongoing costs, opportunity costs, and risks

IV. 3 First Iteration

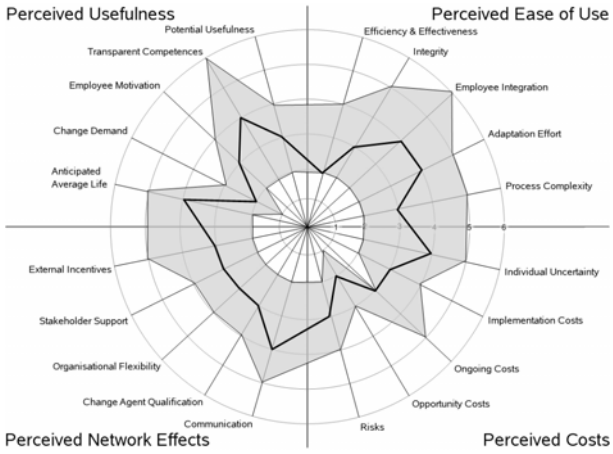
The first iteration was performed in the late design phase based on a draft of the new process. This draft provides an appropriate foundation for the acceptance evaluation because modifications on the process draft could easily be integrated.

The acceptance criteria identified in the previous section were used to develop a standardized questionnaire used for the acceptance survey. Each criterion led to a number of suitable questions. Based on experiences in other acceptance analysis, a six-point Likert scale was selected (cf. [29], [5]), ranging from strongly agree (indicated by number one) up to strongly disagree (indicated by number six).

Subsequent to the preparation of the questionnaire, a conceptional presentation of the process draft was prepared.

We performed three different evaluations. Next to the acceptance of the whole division, the two mainly affected teams IT Network and IT Systems Management were visualized separately (Fig. 3 to 5).

Fig. 3: Acceptance in the IT Infrastructure division (Total)

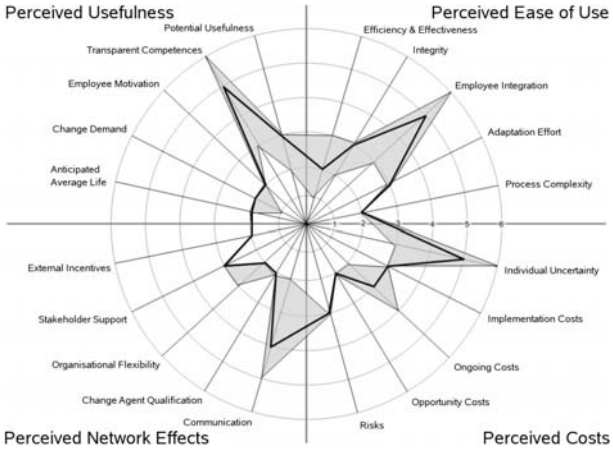


First, the evaluation of the IT Infrastructure division in general shows acceptance challenges especially located in the criteria anticipated average life, transparent competencies, employee integration, adaptation effort, individual uncertainty, and communication (each obtaining an average acceptance level of four).

The spread among the employees (the gray area) indicates a high diversity of opinions among employees. Furthermore, the acceptance levels of transparent competencies and employee integration are seen as critical, indicating that a high number of employees strongly disagree with these aspects.

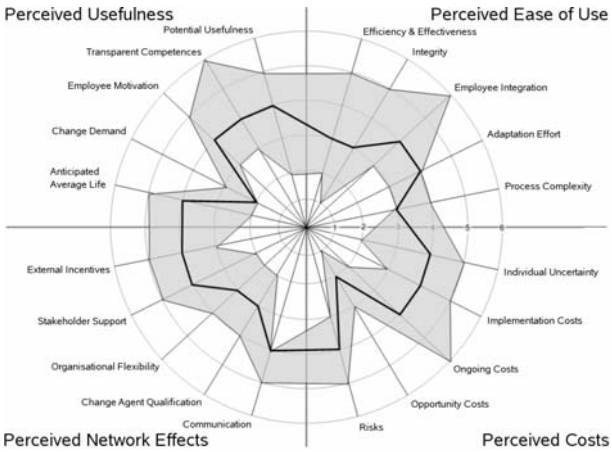
The visualization of the IT Network Team (Fig. 4) shows that acceptance challenges are located within the same criteria as the whole division. The criteria transparent competencies, employee integration, and individual uncertainty (each obtaining acceptance levels of five) as well as the criterion communication (obtaining a level of four) are considered as acceptance challenges.

Fig. 4: Acceptance in the IT Network team



Comparing to the spread among the employees to the IT Infrastructure division as a whole, employees from the IT Network team largely agree on most acceptance criteria, resulting in a smaller gray area shown in the figure. As identified in the IT division as a whole, the criteria transparent competencies and employee integration are considered as critical, but this evaluation shows an additional critical criterion, the individual uncertainty.

Fig. 5: Acceptance in the IT Systems Management team



The DART chart of the IT Service Management team shows the most negative evaluation (Fig. 5). Acceptance challenges can be identified in 13 criteria, each receiving an average level of four: Anticipated average life, employee motivation, transparent competencies, potential usefulness, employee integration, adaptation effort, individual uncertainty, implementation costs, ongoing costs, risks, communication, stakeholder support, and external incentives.

Again, the statistical spread is considered as high. This time, the criteria transparent competencies, employee

integration, and ongoing costs are considered as critical.

To sum up, acceptance challenges can be located in several acceptance criteria, varying from team to team. In order to produce a positive effect for the whole division, and, at the same time, considering the importance of the mainly affected teams, we concentrated our further actions on acceptance criteria which appear in all of the three evaluations.

This led to the following four acceptance criteria: Transparent competencies, employee integration, individual uncertainty, and communication.

For each acceptance problem dedicated measures and actions were derived to improve the individual acceptance level:

- Communication: At first, communication was addressed by setting up a project-related intranet site which provides relevant documents, presentations and even the result of the acceptance analysis itself.
- Transparent competencies: To improve this acceptance criterion, it was necessary to clarify the redesigned process and to enlarge the supplied documents. Role based essays containing requirements, competencies, and responsibilities were generated to specify the future competencies in the teams more precisely and provided on the project's intranet site.
- Employee integration: Furthermore, regular discussion meetings about process-related issues were scheduled to increase employee integration. Moreover, a moderated discussion forum was established on the project's intranet site to enable employee's feedback in an independent and anonymous way.
- Individual uncertainty: To improve this criterion, the project goals, namely to improve and standardize IT processes, have to be communicated and clarified. Additionally, the management commitment to keep all jobs in the IT Infrastructure division was emphasized. It was expected that this could reduce the fear of job losses or the ambiguities about future requirements.

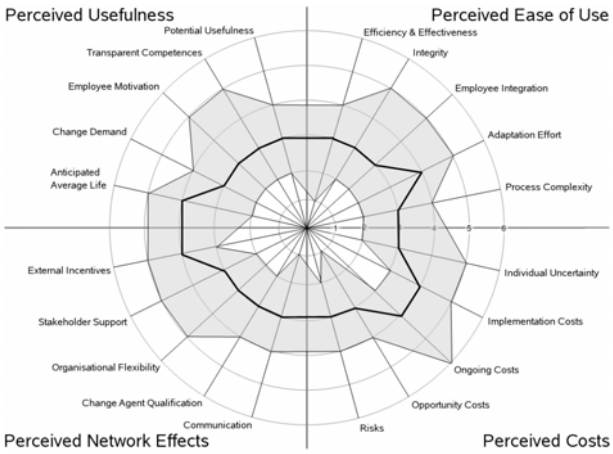
IV. 4 Second Iteration

The second iteration was performed three months later, just before the implementation of the redesigned process itself. The analysis performed in this cycle was similar to the analysis of the first cycle, however with some minor modifications to the process with regard to the increase of transparency of competencies and affected roles, respectively.

The new process draft was presented to the employees in several workshops concluding with a discussion of the pros and cons of the new process. Subsequent to the discussion, all employees were asked to fill out the questionnaire again. Figure 6 shows the visualization of the evaluation results in the whole IT Infrastructure division.

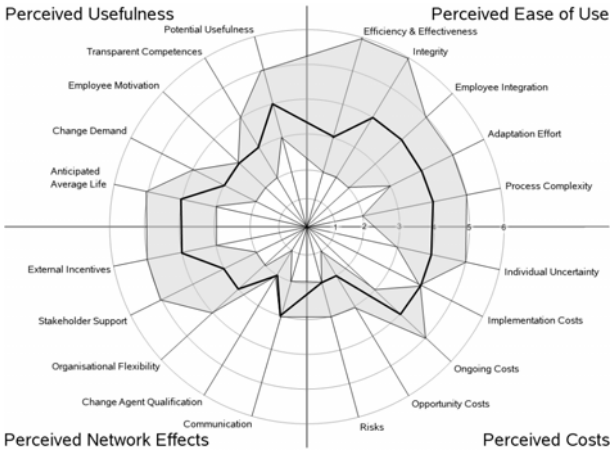
The analysis could identify acceptance challenges especially in the criteria anticipated average life, adaptation effort, implementation costs, ongoing costs and external incentives (each obtaining an average acceptance level of four). As already observed in the first iteration, the spread among employees is relatively high. However, only one acceptance criterion is seen as critical in this iteration (the criterion ongoing costs).

Fig. 6: Acceptance in the IT Infrastructure division (Total)



Comparing the results with the first iteration, the analysis shows that all addressed acceptance challenges could be improved significantly. Now, each of the four criteria shows an improvement of one acceptance level. Furthermore, all critical criteria could also be improved significantly. On the other hand, the analysis reveals a number of new acceptance challenges, located in four criteria whose acceptance level decreased in comparison to the first analysis, each by the value of one. The fifth acceptance challenge, the criterion anticipated average life, kept its level of the first iteration.

Fig. 7: Acceptance in the IT Network team

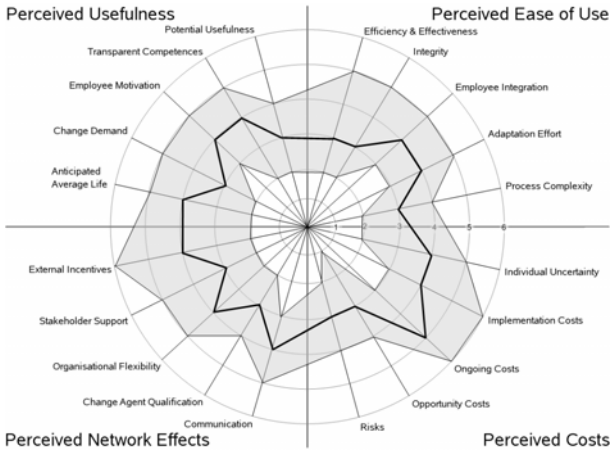


The analysis of the IT Network team (Fig. 7) also shows both, acceptance improvement as well as acceptance challenges. The following criteria are considered as challenges: Anticipated average life, positive usefulness, integrity, employee integration, adaptation effort, process complexity, individual uncertainty, implementation costs, ongoing costs, and external incentives. With regard to the

spread among employee's opinions, only the criterion integrity must be considered as critical.

Comparing the results with the first iteration, again, all addressed criteria could be improved by an average level of one up to two. Only one could be improved to level three and is therefore no longer considered as acceptance challenge (transparent competencies). All other criteria remain on acceptance level four and need to be addressed further on. Similar to the evaluation of the whole division, several new acceptance challenges emerge (in total seven), each decreased by an average acceptance level of one up to two.

Fig. 8: Acceptance in the IT Systems Management team



The analysis of the acceptance in the IT Systems Management team (Fig. 8) led to acceptance challenges in ten acceptance criteria: employee motivation, transparent competencies, employee integration, adaptation effort, individual uncertainty, implementation costs, ongoing costs, communication, organizational flexibility, and external incentives. The spread among employees was almost on a constant level. Critical criteria are implementation costs, ongoing costs and external incentives.

The comparison with the results of the first evaluation shows, that none of the four addressed criteria could be improved significantly. Nevertheless, the spread of opinions could be improved in two of the four criteria, namely transparent competencies and employee integration. Two additional acceptance criteria were identified as acceptance challenges.

Again, measures and actions were derived from the evaluation results. Here, four of the five acceptance challenges appearing in all of the three evaluations have been taken into account: Anticipated average life, adaptation effort, implementation costs, and ongoing costs. The external incentives challenge was left unattained, because of a lack of budget for dedicated incentives as well as unhelpful experiences of the management with external incentive systems in other change implementation projects.

- Anticipated Average Life: The acceptance challenge, which corresponds to the anticipated average life of the new process, indicates frequent business process changes in the past. In order to support a stronger commitment towards the new process design, top management support is demanded.
- Adaptation Effort: In order to improve the acceptance challenge adaptation effort, the process design team decided to provide tools for reducing the individual change effort, e. g. document and e-mail templates. Selected employees were integrated into the development of these tools to ensure applicability and to reduce the individual change effort.
- Implementation Costs: This acceptance challenge seemed to be difficult to reduce because the corresponding budget was already spent on consulting by external ITIL experts and other process consultants. However, the discussion meetings revealed that the negative assessment of this criterion is correlated directly with the perceived lack of employee integration. For future change projects this will be kept in mind and more employees will be integrated into the change team and less consulting will be called externally.
- Ongoing Costs: Finally, the challenge at the criterion ongoing costs will lead to major changes in the process draft. The discussions revealed that the employees found their processes to be cumbersome and bureaucratic. As consequence, the whole process has to be simulated by the process designers and selected employees of all teams. In addition, process automation and workflow aspects will be discussed. It is expected, that this method will lead to more light-weight processes which reduces the negative ongoing costs perception.

At this point, it was decided to exit the iterations because of the time constraint of our project. Furthermore, our experiences from the two iterations already suggested that the DART approach was in a stable and useful form.

IV. 5 Closing

Finally, the two iterations were discussed and assessed at a closing meeting including senior management. The importance of the results concerning our research was emphasized by all participants leading the management to carry out additional acceptance evaluations in future change projects. As a result, the company's change management guidelines were extended by the necessary steps for the DART acceptance analysis. Templates for the questionnaire and the evaluation were generated and integrated.

Our final activity was to generate lessons learned, in particular with regard to our action research approach.

V. Discussion

Many authors provide universal tools for developing change commitment and acceptance (cf. [10]). However, in our research, we followed Dent and Goldberg expecting that only specific and targeted actions can contribute to the efficient

implementation of changes ([16]).

In this context, a multidimensional view on employee's intentions with respect to the proposed change was expected to enhance the accuracy in predicting employee behavior and acceptance ([32]). Therefore, we utilized the highly flexible and adaptable DART approach to identify a number of 20 acceptance criteria providing a differentiated, multi-facet view on employee's acceptance.

Further on, we didn't follow another common perception in literature, as Lawrence put it, the expectation that all the people involved in organizational change projects will resist the change in the same manner ([26]). Rather, employees, who are affected significantly by a change, provide a lower likelihood of commitment and acceptance ([11]). In order to analyze these possible different perceptions of change, we performed three evaluations of the employee's acceptance, one for the IT division in general and one for each mainly affected team, IT Network and IT Systems Management.

In a subsequent selection process, we defined acceptance criteria with a median of four or more as acceptance challenges. This selection is consistent with the corresponding literature, e. g. referring to Judson arguing that acceptance and resistance represent two poles of a continuum ([24]).

The selection of acceptance challenges in these three clusters led to a total of 13 (first iteration) respectively 14 (second iteration) distinct acceptance challenges. In order to reduce this amount of challenges to a manageable number, also with respect to the derivation of measures and actions, we focused on acceptance challenges that occur in all of our three evaluation groups. This led to 4 respectively 5 acceptance challenges (first/second iteration) which were addressed by further measures and actions.

If we look at the success of the measures and actions that have been carried out, we can see significant improvements of the corresponding acceptance criteria for the IT division in general and the IT Network team. The last team, IT Systems Management, doesn't show a significant reaction to our inventions.

Having Patterson and Conner in mind who claim, that building commitment to organizational change is a complex development process ([11]), our research clearly outlines both, the evolution of employee's acceptance as well as the maturing of our process draft over time. The importance of this development process is emphasized by Piderit in underlining the necessity of discussion and improvisation for revising the initial change proposal in an adaptive manner ([32]).

VI. Summary and Outlook

The purpose of our research was to develop a model that explains the employee's acceptance of process innovations in order to derive measures and actions to improve the acceptance.

After reviewing existing process innovation-related acceptance models, we proposed a new model, called DART, which is based on the idea of the balanced scorecard, using a meta-structure in order to identify a balanced set of individually measurable acceptance criteria. Beyond the specification of the model, our paper also described the evaluation of the DART approach in a process redesign project.

In summary, our research findings confirm usefulness of the present model for generating suitable acceptance criteria as well as for defining corresponding measures and actions. Therefore, researchers are expected to benefit from an increased understanding of the employee acceptance as key influencing factor in change implementation projects. Managers and process designers should also gain valuable insights in their efforts to promote the acceptance of process innovations among employees.

Although we provide a balanced set of acceptance criteria, suitable for our individual research setup, researchers and practitioners must be aware of other factors that affect the employee's acceptance of process innovations.

The model proposed in this study represents a first step in developing a model of process innovations acceptance of individual employees. Further research will be required to test and extend the boundaries of the current model. For instance, the validity and reliability of our results need to be analyzed in one or more longitudinal field studies.

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