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Abstract

Management by Objectives (MbO) – invented by Peter Drucker in the 1950s – is a leadership approach in which superior managers and subordinate employees jointly define objectives, constantly review achievement-progress and assess final achievements. IT-support for MbO is given within Human Resource Information Systems (HRIS) or Employee Performance Management Systems (EPMS). Functions to constantly document achievement-status' by employees or asynchronous communication possibilities for objective-discussion are not integrated in these systems. Thus, achievement-discussion has to be done via separate media such as email. Considering this, managers might lose track about achievement-levels and employees likely lose awareness of their objectives. To overcome these problems we interpret this situation from a Principal Agent perspective and conceptualize a specific MbO-tool on a weblog-basis. Within our concept each manager and employee possesses an intra-organizational weblog, in which he/she documents his/her objectives and corresponding status reports. Managers can comment on status reports and delegate sub-objectives via an automatic transfer of objectives from his/her weblog to an employee's weblog. Drawing on this, we construct an explanatory design theory for the problems above and for MbO-tools in general. The evaluation using the Principal Agent theory shows that our approach decreases MbO information asymmetries and increase objective-awareness.

Keywords: Management by Objectives, Intra-organizational Weblogs, Design Theory, Principal Agent Theory.

1 Introduction and Motivation

Management by Objectives (MbO) – invented by Peter Drucker in the 1950s (Drucker, 1954) – is an old but still widely used leadership approach (Antoni, 2005). Superior managers define objectives for employees, review achievement-progress and assess final achievements (Odiorne, 1965). Especially in highly standardized sectors such as automotive or other engineering industries this concept is of relevance because in this context outputs are clearly defined along the hierarchy. With MbO, managers are able to control these outputs in a standardized manner. However, classical top-down MbO has changed to ensure employee motivation and contribution: Objectives are jointly defined between manager and employee, while objectives and achievements are constantly reviewed and adjusted. Thus, modern MbO becomes distributed and buttom-up. These principles are adapted from leadership in knowledge intensive sectors (von Krogh et al., 2012) or leadership in networks (Soekijad et al., 2011).

Classical MbO-processes are currently IT-supported by Human Resource Information Systems (HRIS) and Employee Performance Management Systems (EPMS) that allow to document objectives and achievement levels (Case and Hoell, 2009). These systems neither integrate functions to document achievement-status' by employees nor possibilities to communicate about objectives, both important factors for modern MbO (Locke and Latham, 1990). Thus, for non Face-to-Face-situations, e.g. for virtual teams, continuous status-tracking and objective discussion has to be done via telephone or email. This distribution of status-communication in different media results in practical problems: Managers might lose track about achievement-levels of their employees and employees likely lose awareness of their objectives. This can also be interpreted as a Principal-Agent problem (Jensen and Meckling, 1976). Adapted to MbO, an asymmetrical distribution of information about achievements between the principal (manager who don't know about current status) and the agent (employee who knows about current status) can be found. Consequently, managers have to invest screening-efforts to get informed about current and past status, as MbO-systems don't support this. In addition, employees have no HRIS- or EPMS-supported option to signal achievement-levels and discuss about objectives.

To solve these problems, an MbO-tool has to be constructed, that integrates functions to document objective-status reports and to allow asynchronous communication. This business need remains unsolved in research, although similar functions are already discussed as future EPMS-trends (Case and Hoell, 2009). Furthermore – from a Principal-Agent view – resulting benefits and risks for managers and employees have to be studied. Therefore this article addresses the following research questions:

a) How can status reports and communication functions be integrated in an MbO-tool?
b) What benefits and risks for managers and employees result from such a solution?

To address question a) we design an MbO-tool by using design science principles (Hevner et al., 2004). An extension of existing HRIS- or EPMS-approaches – like done for employer branding in e-recruiting by Eckhardt et al. (2008) – is not possible, because there is no appropriate MbO artifact given in literature. As demonstrated above an MbO-tool has to integrate collaboration and communication functions as well as personal, non-public spaces for employee-objectives. At a first stage, weblogs and wikis seem to be a conceivable solution as they provide collaboration and communication (Kim et al., 2009). At a second stage, weblogs (in short: blogs) are designed to publish and discuss person-related contents that can be made visible to defined people (Kim et al., 2009). Thus, in contrast to wikis that aim at managing collaborative knowledge (Kane and Fichman, 2009), weblogs can provide personal spaces for objectives. In line with this argumentation, we conceptualize an intra-organizational system of weblogs; each designed for an employee to document his/her objective-status. Managers document their own objectives in their blogs and comment on employee's status reports.

To provide an answer for our generalized question a), we analyze our concept by extracting general components out of our artefact and match them with general requirements resulting from the business need above. Thus, we build a design theory according to Baskerville and Pries-Heje (2010). To answer question b) we analyze our design theory and our specific artifact by using the Principal-Agent theory.

The article is structured as follows: At first we give insights into our methodology basing on the design science paradigm. Next, we discuss basics and related research for our knowledge bases *IT-supported MbO* and *intra-organizational blogging*. In section 4 we present our MbO-weblog-concept. Section 5 contains the derivation of our design theory and an evaluation of our concept. Finally, we examine contributions to research, practical implications and further questions.

2 Methodology

To present our MbO-concept we follow the design science paradigm. The first step of *Problem Identification* can be found in section 1 and section 3. In the introduction the business and research need for an MbO-tool that integrates status reports and objective-documentation was described. In section 3, we present a literature review for our knowledge bases on order to highlight these needs.

Within the step of *Solution Design* we derive specific requirements from our business need and construct the basic design for the MbO-weblog-artifact. Following the requirement of supporting the whole MbO-process, we examine how weblog-functions (section 4.2) can be applied for single MbO-tasks. For this, the Task-Technology-Fit (TTF)-approach is adapted. TTF provides a framework that allows examining how technology-functions match requirements of a task or a process (Goodhue and Thompson, 1995). Building on this we give insights into the configuration and functions of our MbO-weblog-artifact (Peffers et al., 2007). A privacy concept for our construct is presented as well, as personal objectives within enterprises have to be protected from unauthorized access (Eddy et al., 1999).

For *Demonstration and Evaluation* we inductively generalize the specific functions of our weblog-concept and show how the business need from section 1 and the requirements from section 4.1 are addressed. Thus, we build an explanatory design theory (Baskerville and Pries-Heje, 2010). A description of the design process, that is part of a design theory in Walls et al. (1992) and Gregor and Jones (2007), is not given. We further evaluate our concept by discussing benefits and risks that our artifact implies (Peffers et al., 2007). For this, we apply the Principal-Agent theory (Jensen and Meckling, 1976) and show how managers (principals) and employees (agents) can use our artefact for screening and signalling strategies to overcome information asymmetries in MbO.

3 Basics and Related Research

3.1 IT-supported Management by Objectives (MbO)

Management by Objectives (MbO) is defined as "a process whereby the superior and subordinate managers of an organization jointly identify its common goals, […] and use these measures as guides for operating the unit and assessing the contribution of each of its members" (Odiorne, 1965, p.55). Thus, the key MBO-concepts are (a) objectives (= soft information), (b) Key Performance Indicators (KPIs), the measurable representation (= hard information) of an objective, and (c) perspectives, being bundles of objectives (Padovitz et al., 2005).

IT-supported MbO is assigned to the topics of eLeadership and electronic human resource management (eHRM). eLeadership is defined as leading teams and individuals by using electronic media (Avolio et al., 2001). eHRM describes the IT-support of shared HRM-processes using web-based and interactive HR-tools (Strohmeier, 2007). Within these contexts, IT-support of MbO is discussed in terms of Employee Performance Management Systems (EPMS) (Case and Hoell, 2009), often integrated within Human Resource Information Systems (HRIS) (Hendrickson, 2003). EPMS comprise functions to set individual and team objectives, cascade objectives to subordinate employees, document final achievement levels, calculate employee performances and initiate bonus-payments (Case and Hoell, 2009). Insights into simple data-models and -functions for EPMS are shown by Salle et al. (2004). Authors who discuss status-reports or technology-provided communication about objectives cannot be found in eLeadership, eHRM, HRIS or EPMS literature. Nevertheless we use existing EPMS-approaches given by Case and Hoell (2009) and Salle et al. (2004) for our conceptualization.

3.2 Intra-organizational Blogging

Weblogs are web-based journals in which authors publish contents in a reverse chronological order (Agarwal and Liu, 2008). Intra-organizational blogging is defined as the adoption of weblogs by enterprises for internal purposes (Kolari et al., 2007). Most scientific publications address weblogs-usage on the Internet (e.g. Herring et al., 2004; Fun and Wagner, 2008). An according literature review is provided by Agarwal and Liu (2008). From a functional view intra-organizational weblogs integrate the functions from Table 1, adapted from Internet-weblogs (Fun and Wagner, 2008; Marlow, 2004). Section 4.2 details how these functions can be applied to MbO.

Function	Description
Journal-functions allow to use a weblog as a personal journal	
Posts	Bloggers publish posts that are displayed in a reverse chronological order.
Archive	Former weblog-posts are archived and can be accessed through an archive-listing.
Search	This function can be used to employ a full-text search within all blog-posts.
Linkage-Functions allow interactions between a blogger and readers or other bloggers	
Comments	Blog-readers can comment on blog-posts. These comments are displayed under the original post.
Web-Feed	Blog-abstracts and a link to a new blog-post can be sent via an XML-based format (RSS or ATOM) to a feed-reader of a person who has subscribed to the weblog.
Permalink	A Permalink – a Uniform Resource Identifier (URL) – is created for each post.
Trackback	Notification for a blogger that one of his/her posts was linked in a post of another blogger. This function is realized with a network ping from weblog A that references another weblog B. In weblog B a notification in form of a link is displayed under the original post.
Blogroll	A blogroll is a link-list of other blogs.

Table 1. Weblog-Functions

Intra-organizational weblogs are discussed from two perspectives (Kosonen et al., 2007; Lee et al., 2006). Firstly weblogs are used by executives or selected employees in a top-down way for organized, internal communication to promote strategies or to perform thought leadership (e.g. Lee et al. 2006). Secondly blogs are employed by all company members in a bottom-up way to foster informal interactions and to communicate, especially in terms of a personal journal for knowledge sharing, idea drafting and opinion expression (e.g. Stocker and Tochtermann, 2008). In this intra-organizational context, a utilization of weblogs for MbO is discussed in terms of thought leadership without considering structured leadership practices or concrete objectives (Lee et al., 2006). Thus, the related concept by Lee et al. (2006) serves merely as a general framework for our conceptualization.

Weblogs are also considered for eLearning within enterprises and for private or scholarly contexts (e.g. Bitzer and Schumann, 2008). On the one hand, they serve as personal journals to save learning progresses (Du and Wagner, 2005). On the other hand, they provide a Learning Content Managements System (LCMS) that allows administrating the learning process (Bitzer and Schumann, 2008). In this approach, course instructors post learning objects in their weblogs. Course participants document learning progresses in the teacher's or in their own weblog. We consider this LCMS-weblog-concept for our conceptualization, as this approach is similar to an MbO scenario in which one person posts objectives and another person posts status reports (see section 1).

4 MbO-weblog-concept

4.1 General Requirements and Basic Design

The initial business need for an MbO-tool that integrates status reports and communication functions results in two general requirements. Firstly, our concept has to store data for the *key concepts of MbO*. These are objectives, KPIs and perspectives (Padovitz et al., 2005). In detail, individual objectives, team objectives and corresponding status reports have to be considered (Antonio, 2005). Secondly, our concept has to address the whole *MbO-process* to allow managers and employees document their objectives from definition to their assessment. The process-support explicitly implies an integration of status reports and communication functions, as discussion about objectives is a part of the MbO-process (Odiorne, 1965; Locke and Latham, 1990).

For the *first general requirement* objectives and perspectives can be represented by blog-posts, including a unique permalink – similar to the thought leadership approach in which visions are communicated via blog-posts (Lee et al., 2006). A KPI can be part of a post as it is part of an objective. Status reports for an objective can also be realized with blog-posts referring to objectives via permalinks and trackbacks. Thus, our concept integrates two types of blog-posts: objectives and status reports (details for these posts can be found in section 4.3). For the weblog-configuration in which these blog-posts are located, there are two possibilities: (a) a community blog concept and (b) an individual blog concept (Figure 1) as it was shown in the approach of Weblogs as LCMS (Bitzer and Schumann, 2008).

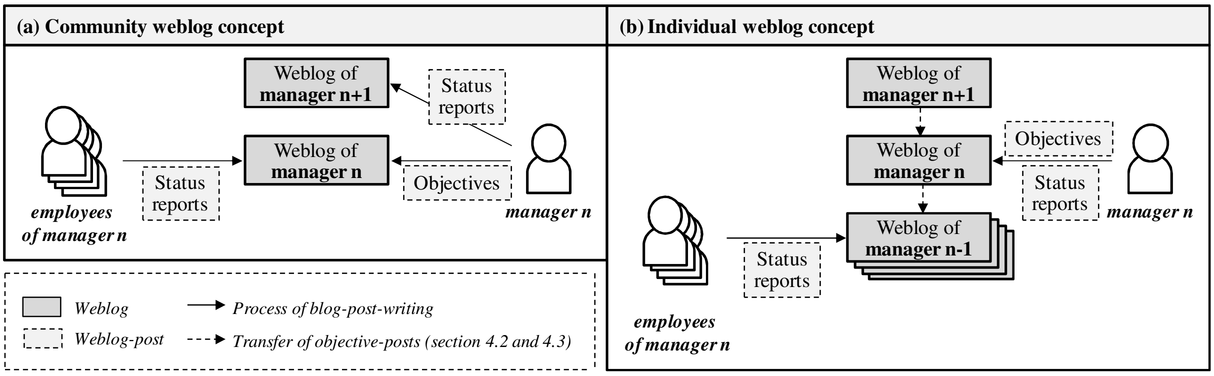

Figure 1. Community weblog concept versus individual weblog concept

In the *community weblog concept* one weblog for each manager and his/her employees is introduced. In this weblog the manager (manager n) posts objectives while all employees post corresponding status reports. There are three drawbacks of this concept: First of all, a manager has to use two blogs, his own for objective-delegation and one from his/her superior manager (manager n+1) for status reports of his own objectives. Thus, from a manager's viewpoint our two types of blog-posts are separated into two weblogs. Furthermore, in case all employees post status reports within one weblog a manager might lose track as all reports are listed in a single blog. Finally employees can see objectives of their colleagues that violate against most data protection compliances of enterprises.

In an *individual weblog concept* each manager and employee has his/her own weblog, in which only he/she can write posts. Objective-posts are automatically transferred from a superior to a subordinate weblog via a Webfeed to automate objective-delegation (for details see sections 4.2 and 4.3). This approach overcomes the critical aspects of the community concept. First of all, a manager writes posts (for objectives to delegate and own status reports) only in his/her weblog. In addition, status reports for one objective are aggregated within one weblog. Thus, confusion – in succession of disarranged posts in the community concept – is prevented. Employees only see their own weblog and have no access to other ones. Nevertheless, a privacy concept is necessary (section 4.4), as managers need access to the blogs of their employees to read their status reports, but employees must not read other's objectives, except for team-objectives. Another drawback is that the number of blogs (one for each manager and employee) is higher than in the community concept (one for each manager), which may result in higher hosting costs. In summary, the individual blog concept is easier to use for employees and managers and allows data protection. For these reasons we chose this concept for our approach.

4.2 Application Areas of Weblogs within the MbO Process

For the *second basic requirement* of MbO-process support, we analyze the ability of weblog functions (Table 1) to support the MbO-process as recommended by the Task-Technology-Fit (TTF)-approach (Goodhue and Thompson, 1995). In this context the MbO-process – comprising of single MbO-tasks –

are equivalent to the task-perspective of the TTF-approach. Weblog functions correspond to the TTF-technology-dimension (for TTF-details see also section 2). The most cited MbO-process was defined by Odiorne who closely oriented on Druckers thoughts (Odiorne, 1965). The first step within this process is to set general business objectives. In further steps these business objectives have to be itemized into operational objectives and delegated to single employees or teams (Antoni, 2005). This principle is called cascaded objectives. The MbO process integrates employee interviews in which managers and employees (or subordinated managers) discuss future objective-agreements and KPIs while reviewing objective-achievements for the past decade. In most business environments employees are obligated to document achievement-progress during two interviews to allow management-feedback (Antoni, 2005). This feedback and explicit discussion about objectives is an MbO-task as well (Locke and Latham, 1990). Table 2 summarizes MbO-tasks and shows applicable weblog-functions.

MbO-task	Actor(s)	Task-activities	Description of weblog-application	Blog-funct.
1. Set objective	Manager n+1	Definition of an objective with description and KPI and delegate it to subordinate managers.	Defining objective(s) by posting it (them) in blog-posts (section 4.3) and transfer it (them) via web-feed to subordinate manager blogs. The original post is linked via permalink to the transferred one.	Posts, Web-Feed, Permalink
2. Break-down objectives	Manager n	Itemization of objective(s) into sub-objectives and preparation of objective-delegation.	Creating blog posts for each sub-objective linked to a superior objective via permalink (within the blog of a responsible manager). Including the definition of a KPI (represents the “hard” objective to be achieved).	Posts, Permalink
3. Prepare employee interview	Manager n with Manager n-1	Preparation of the interview between about future objectives.	-	-
4. Conduct employee interview	Manager n with Manager n-1	Performing of the interview; discussion about objective-agreement.	-	-
5. Follow up employee interview	Manager n	(Optional) Adjustment of objectives and final delegation of objectives to employees and teams.	Transferring objective-contents via web-feed to subordinate manager blogs, where a new post for this objective is automatically created (see also task 1).	Posts, Web-Feed
6. Document progress	Manager n-1	Continuous documentation of the achievement-progresses for objectives.	Creating status reports as single posts linked via Permalinks to associated objective(s) in the current blog. In an affected objective a list with all reports, realized with trackbacks, is shown. Achievement-levels can be documented in status reports.	Posts, Permalink, Blogroll, Trackback
7. Review progress	Manager n with Manager n-1	Discussion about progresses and (optional) adjustment of objectives.	A manager can access employees’ status reports via a link-list for an objective, in which trackbacks to reports are listed. For each status report comments can be added. Original objectives can be altered.	Comments, Blogroll, Trackback
8. Review results	Manager n with Manager n-1	Detection of the objective-achievement by assessing a final KPI (typically within the employee interview).	In a link-list for a manager-blog all delegated objectives are listed via a link to the relevant employee-blog and to the latest status report. The link-list is created by using trackbacks and the blogroll-function.	Blogroll, Trackback
9. Ascribe rewards	Manager n	Attribution of financial rewards depending on achievement-levels.	An interface to payment systems that transfers the final objective-achievement (KPI) can be included.	-

Table 2. Application areas for weblogs within the MbO process

The analysis in Table 2 shows that most MbO-tasks can be supported by weblogs. Exceptions are tasks three (Prepare employee interview), four (Conduct employee interview) and nine (Ascribe rewards). For interview preparation, each manager can manually study his own weblog and the one from the affected employee. Explicit weblog-functions are not relevant here. An employee interview is conducted either via a Face-to-Face (FTF) meeting or a synchronous communication medium, e.g. video conferencing. Although our concept aims at integrating communication about objectives, it doesn't substitute a FTF interview, as FTF meetings are meant to be a significant factor for successful leadership (Crawford-Mathis, 2009). The ascription of financial rewards cannot be supported with a weblog-function. An interface from each individual weblog to HRIS payroll-subsystems is conceivable. A conceptualization of the application areas from above is presented in the following two sections.

4.3 Detailed Configuration of the MbO-weblog-concept

All weblog-functions can be applied for the MbO process and are integrated in our MbO-weblog-concept. As already designed in section 4.1, *blog-posts* are used to write objectives and status reports. We recommend different presentations for these post-types to highlight if a post is an objective or a status-report (the structure of these post-types is presented on the next page). The *archive- and search-function* can be used independently from single tasks. By applying the *comment-function* weblogs allow non-FTF-discussions about objectives and status reports for e.g. geographically or temporarily separated situations. Each blog-post of an employee or subordinated manager can be commented from a superior manager to review achievement-progresses. In turn an employee can comment on his/her own posts or comments from his/her superior. *Web-Feeds*, *permalinks* and *trackbacks* are used to allow cascading objectives between different weblogs (Figure 2).

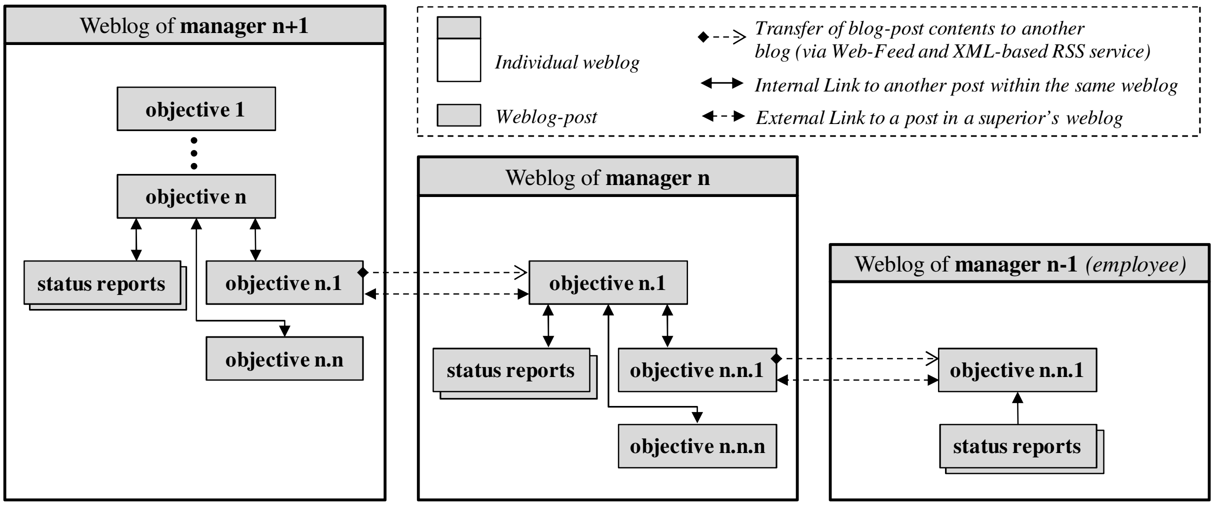

Figure 2. Weblog configuration of our concept (post-structures can be found in Figure 3)

In case a manager (e.g. manager n+1 in Figure 2) creates blog-posts for objectives within his own weblog its contents will be copied via a web-feed-function to a weblog of a subordinate employee (manager n). An objective can also be copied to more than one employee to support team-objectives. In the employee's weblog, a new post (with a new permalink) is automatically created for the according objective. For team-objectives this new post is linked to the corresponding ones of team-members. The original objective-post remains in the manager's weblog (manager n+1) and is linked to the counterparts in employee's blogs (manager n). In case a status report for an objective is created, a link to this report will automatically be placed in a report-link-list (blogroll-derivation) of the referred objective via a trackback. Consequently, for an objective all status reports are automatically listed. In addition, for each weblog all transferred sub-objectives and thus all connected weblogs are listed in a blogroll.

Our weblog-configuration requires an adjustment of the idealistic structure of a blog-post, because classic posts are not copied from one weblog to another and they are normally not used for formal objective documentation. Thus, objective-posts contain five additional contents (Figure 3): (a) a KPI-section where we place the KPI for an objective that has to be achieved (Padovitz et al., 2005), (b) an achievement-section for the KPI-level that is finally achieved, (c) the time period in which the objective is valid, (d) a transfer-section for the URL(s) of the weblog(s) to that the current post is copied after saving and (e) the report-list in which all status reports that refer to this objective are listed via trackbacks. These contents base upon MbO-class-models of Salle et al. (2004).

Post-type: **Objective**
Header *(title of the objective)*
External Link[1] *(to the same objective in the superiors blog)*
Internal Link[2] *(to the superior post within the same blog)*
Team Links *(to posts within weblogs of team members)*
Content *(Description of the objective; if objective is taken from the superiors blog, only changeable by the superior)*
KPI *(KPI that has to be achieved)*
Achievement *(KPI that is finally achieved)*
Time Period *(time period, typically the year, for the objective)*
Transfer to[3] *(URL(s) of the weblog(s), to that this post has to be transferred via an XML-based push-RSS-message)*
Report List *(trackback list of all reports that are linked to this)*

Post-type: **Status Report**
Header *(title of the report)*
Link *(to the objective, that this report referrers to. After saving the report, a trackback is sent to the referred objective-post)*[1]
Content *(report contents)*
Status *(recent status of objective achievement, represented as a percent-value)*
Final Report *(checkbox; indicates that this report is meant to be the final one and this report indicates the final achievement)*

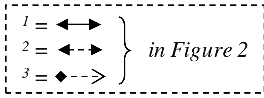

Figure 3. Contents of the blog-posts "Objective" and "Status Report"

In addition, three links can be placed within an objective-post: an external link to the original post in the superior manager's blog, an internal link to superior objectives within an employee's blog (indicates a sub-objective) and several links to posts within weblogs of team-members (team links; indicate team-objectives). A status report comprises – besides header, link and content – the status indicating current objective-achievement and a checkbox to document a final report.

4.4 Privacy Concept

Our approach includes a privacy concept, because blog-posts contain objectives and status reports that are HR-personal-data and thus require protection from unauthorized access (Eddy et al., 1999). A privacy concept has to define how authorizations for interactions of a system-user with a system – so called use cases – are managed. In our MbO-weblog-concept there are four use cases: (a) the creation and modification of blog-posts, (b) the access to blog-posts of other employees, (c) the access to blog-posts of team-members and (d) the possibility to comment on blog-posts.

Regarding the *creation and modification of blog-posts* (a) each employee "owns" one weblog, in which only he/she can create new and alter existent posts. That can be realized by assigning the weblog-URL to this person and check URL-assignment when accessing a weblog. For *the access of other employees to blog-posts* (b) we propose that each employee can access every weblog of the MbO-tool, but not every post. Employees or managers who access a blog of another person can only see and comment on posts to which they are explicitly assigned to. These authorizations can be realized through permalinks that are assigned to employees and signalize that they are allowed to access a post. Superior managers get access to all posts of their subordinate employees. Thus, they are automatically assigned to post-permalinks when subordinate employees create new posts. A similar approach can be conducted for *the access to blog-posts of team-members* (c). In case an objective-post is copied to several team-members (each team-member gets a new post with a unique permalink), each team-member will be automatically assigned to the permalinks of the corresponding objective-post of the other team-members. Once a team-member creates a status report, a trackback to the corresponding posts of the team-members will be sent. To allow access to this report, team-members are automatically assigned to its permalink. The trackback-routing and permalink-assignment can be realized by team links within an objective-post (Figure 3) that indicate where trackbacks have to be sent to and which user has to receive permission to access the report. *Commenting on blog-posts* (d) is only possible when a user is authorized for objectives or status reports as realized by the use cases (b) and (c).

5 Demonstration, Evaluation and Limitations

5.1 Constructing a Design Theory for MbO-tools

Our intra-organizational MbO-weblog-concept addresses the initial business need for an MbO-tool that integrates objective-status reports and allows asynchronous communication. Furthermore, we provide a holistic concept for an MbO-tool. By generalizing our specific weblog-approach to a weblog-independent concept we are able to construct an explanatory design theory (Figure 4) that explains "'why' and 'how' to construct an artifact" (Baskerville and Pries-Heje, 2010, p.275). Constructing this design theory we answer research question a) from section 1.

General Requirements

- Continuous discussion about objective-achievements is an important factor for successful MbO *(condition)*
- Current HRIS or EPMS don't integrate MbO-functions for status documentation or asynchronous communication *(condition)*
- MbO-tools have to integrate the MbO key concepts: individual- and team objectives, KPIs and perspectives *(capability)*
- MbO-support-systems have to integrate functions for the whole MbO-process, including the process-steps of objective-delegation, reviewing and discussion about objectives *(capability)*
- Objectives are HR-personal-data and require protection from unauthorized access *(capability)*

General Components

- Individual Space to document objectives (including textual description and KPIs) and status reports (including current level of achievement) for each employee
- Functionality to cascade objectives to subordinate objective spaces
- Links between superior objectives, subordinate objectives and status reports
- Functionality to asynchronically comment on objectives and status reports
- Functionality to control access to individual and team objectives (security module)

Figure 4. Explanatory design theory for MbO-tools

Our explanatory design theory for MbO-tools starts with *general requirements*, discussed in sections 1 and 4.1. The question of *why* MbO-tools integrating status reports and communication have to be constructed can be answered with two conditions: Firstly, continuous discussion between managers and employees about objective-achievements is an important factor for successful MbO (Locke and Latham, 1990), but is not always possible with Face-to-Face communication (for example in virtual teams). Secondly, current HRIS or EPMS don't integrate MbO-functions to realize this condition. Following this need, as well as MbO key concepts (Padovitz et al., 2005) and the MbO-process (Odiorne, 1965), an MbO-tool has to integrate individual and team objectives, KPIs, perspectives and functions to support the MbO-process. This includes objective-delegation as well as reviewing and discussing objectives. Another capability is to enable data protection for objectives (Eddy et al., 1999).

General components that address these requirements are primarily individual spaces for each employee to document objectives – including textual description and KPIs – and status reports – including current level of achievement (in our case solved with an individual weblog-concept, section 4.1). According to the MbO-process, a tool should further provide functions to cascade objectives to subordinate employees and their spaces. To reproduce objective-cascades, links between superior-, subordinate- and team-objectives, as well as for status reports have to be embedded. We solved this by automatically transfer objectives between single weblogs and by including several links into our posts (section 4.3). For documentation of objective- and achievement-communication, comment-functions for corresponding documentations (in our case blog-posts) should be integrated. Finally, a security module that controls data access to objectives-places and takes on objective-delegations has to be considered. In our case, such a module is essential for authorization-assignments to employee-posts for managers (realized by permalink- and URL-assignments, section 4.4).

5.2 Overcoming MbO Information Asymmetries

The initial problem of distributed information about objective-status' and objective-discussion in several media (in succession of missing status-documentation and communication-functions in current MbO-IT-support) can be interpreted drawing on the Principal-Agent theory (Jensen and Meckling, 1976). Thereby, an objective agreement between a superior manager and a subordinate employee is a kind of contract (MbO-task 4 in Table 2). After an objective is agreed, an employee (*agent*) tries to pursue it, while a manager (*principal*) controls this process (MbO-tasks 6 and 7 in Table 2). At this point, information asymmetries occur, in case a manager has only few options to control employees' actions, while an employee constantly knows about achievement-status. This remains true especially for temporarily or geographically separated situations in which Face-to-Face meetings to overcome MbO information asymmetries cannot be realized. As already argued, using communication-tools such as video conferencing or email to handle these situations induce distributed MbO-information (objectives in HRIS / EPMS and status' in other media) and thus high efforts for information retrieval. Theoretically this can be interpreted as a hidden action / hidden information situation after objective-agreement or an adverse selection problem before a new agreement (Hart and Holmstroem, 1987).

In both cases our MbO-weblog-concept and the constructed design theory overcomes presented information asymmetries by providing functions to realize signalling and screening strategies. On the one hand, an employee can constantly report current achievement-status and maybe ask critical questions. Thus, our concept represents a *signaling*-instrument (Spence, 1973). On the other hand, with constant access to his employee's objectives, a manager can easily read status-reports and comment on them, e.g. for answering questions or giving hints. Thus, *screening* is provided by our concept as well.

As a result *managers benefit* from being constantly well informed without high efforts. Accordingly, agency costs decrease and the basis of information for decisions regarding objective-adjustment, new objective-agreements and objective-reviewing may improve. However, it is important not to produce data overload regarding objective-discussion and status reports as that is proved to be a restricting factor for MbO and performance measurement (Hudson et al., 2001). Another risk is that our concept principally allows Face-to-Face (FTF) substitution that is in general not the ambition of eLeadership (Crawford-Mathis, 2009). A FTF-substitution would contradict the discussed benefits by decline trust in employee-relationships. *Employees benefit* by receiving helpful feedback from a manager. However, signaling is only done if sufficient return – in our case feedback – is expected (Spence, 1973). In this context one problem might be that status-reporting and -feedback will likely need a while to become common practice, like proven for similar eLearning weblogs (Du and Wagner, 2005). Especially for our weblog-concept usage has to be clearly communicated and has to be mandatory to allow a formal MbO-process. Thus, no manager or employee should be allowed to opt out (Case and Hoell, 2009). Therefore, the original purpose of weblogs on the Internet – that is free usage (Lee et al., 2006) – is contradicted. This might be a problem for acceptance.

To sum up and provide an answer to research question b) from section 1, our intra-organizational MbO-weblog-concept and the generalized design theory for MbO-tools provide instruments for managers to conduct screening-strategies and for employees to conduct signaling-strategies. From a Principal-Agent perspective, agency-costs for MbO decrease. From an MbO perspective, objective-awareness is increased. Nevertheless, the discussed risks have to be considered.

5.3 Limitations

Limitations have to be considered regarding functions of our MbO-weblog-concept, conceptualization of the design theory and evaluation of both. From a *functional perspective*, we haven't considered Long-Term-Incentives (LTI) in our weblog-concept. In turn LTI should be easy to integrate, as we included no restrictions for achievement-measurement. Additionally, an interface to payroll systems is conceivable. This would transfer KPI-measurements from the MbO-tool to payroll to initiate bonus-payments. From a *conceptual viewpoint*, our approach is tied to MbO. An adaption of the design theory to other leadership-methods has to be proven (Avolio et al., 2001). Concerning *evaluation,* we prory to other leadership-methods has to be proven (Avolio et al., 2001). Concerning *evaluation,* we propose a prototypical implementation of the weblog-concept in an enterprise environment. Although our evaluation – using Principal-Agent argumentation – theoretically indicates that our concept solves the defined business need, a long-term empirical study should be conducted to assess the efficiency and acceptance of our concept. This would also verify our design theory. For this purpose, the Principal-Agent theory and common eLeadership metrics, especially Media Richness and Media Natureless Theory (DeRosa et al., 2004), can be used.

6 Summary and Contribution

Our MbO-weblog-concept represents an artifact within the configuration-dimension of the eHRM framework (Strohmeier, 2007). More precisely, – from a blogging-perspective – we indicate that weblogs can be efficiently used in a formal, controlled manner within enterprises. Until now, they are merely discussed by means of informal scenarios like knowledge sharing or idea expression. However, our scenario requires an adaption of idealistic weblog-functionality and controlled usage patterns that contradict classical weblog-usage on the Internet. From an MbO-perspective, our concept represents a new tool for modern MbO. Frequently discussed MbO-functions from EPMS or HRIS (Case and Hoell, 2009; Salle et al., 2004) are adapted and extended with communication functions.

By generalizing our specific concept to the problem class of MbO-tools, we further developed an explanatory design theory that extends existing knowledge regarding MbO-IT-support and provide a functional MbO-specification that can be transferred into a practical implementation.

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