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# Activity Recommendation App – Software to Evaluate the Usefulness of Improvement Recommendations Created in a Team

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**Abstract.** The Activity Recommendation App supports employees in individual and collaborative reflection by capturing discussions and solutions for problems that need to be solved. The app enables employees to record personal experiences with the solutions. Based on these experiences the usefulness of a recommendation can be re-evaluated in order to approve, update, or discard the recommendation. The application was successfully evaluated in coaching employees in learning time management techniques.

**Keywords:** ARA – Activity Recommendation App· soft skills improvement· recommendation evaluation· solution· experiences· MIRROR Spaces Framework· time management coaching

## 1 Introduction

Reflection on work experiences can lead to new insights and ideas how to handle work situations better in the future. But the capturing of experiences during work and the reflection on this data is only half the way for a successful improvement. The other half is the creation of a viable reflection outcome and the validation of this outcome when it is applied in practice (see [1]). Based on this validation, a change can be approved, reverted, or improved and validated again.

Whilst a lot of applications support users to capture data during work in order to provide it in a subsequent reflection session, the second half of the reflection cycle is often left unsupported. To also cover this part, the Activity Recommendation App (ARA) was created in the MIRROR project [2]. It supports the discussion of improvement ideas in an individual or collaborative reflection session and frames the outcome as recommendation. The app allows capturing personal experiences relating to active recommendations and viewing other members' experiences if a recommendation targets a team. Finally, the ARA supports the evaluation of a recommendations' usefulness when applied in practice, in order to enable its improvement or suspension. By providing these features, the Activity Recommendation App aims to improve the application of insights gained from reflection on work.

## 2 Overview of the Main Functionalities

The recommendation is created in an individual or a collaborative reflection session. Major elements of this session are the identification of the concrete issue and a viable solution for this issue. Texts, files, or data from other MIRROR applications can be attached to be used as evidence to back the comprehensibility of a recommendation. The events during the discussion are listed as a kind of minutes. Measurement criteria can be selected to evaluate the usefulness of the recommendation. Before publishing the recommendation, a target person/group is selected and invited to try the new solution.

A concrete scenario could look like this (cf. [3]): A team uses ARA to find a solution for their common problem of overtime spent for pending projects. They agree that frequent interruptions can be one reason for this (*issue*). In the scenario the teams' solution is to implement three hours of quiet working time a day and to avoid interruptions during that period (*recommended solution*).

The screenshot displays the ARTEL14 application interface. At the top, there are three tabs: 'CAPTURE', 'MANAGE', and 'DISCUSSION'. Below the tabs is a search bar and two dropdown menus for 'TYPE' and 'PUBLISHED'. The main content area is divided into three sections: 'ACTIVE', 'ISSUE', and 'RECOMMENDED SOLUTION'. The 'ACTIVE' section shows a list of items, including 'empty e-mail inbox' and 'Introduce a "Casual Friday"'. The 'ISSUE' section contains the text: 'My inbox is full, so I have no idea of which e-mails contain tasks and when these have to be done.' The 'RECOMMENDED SOLUTION' section contains the text: 'Every day, I will check incoming e-mails on content and create immediately tasks so that I can move the e-mails into folders and empty my inbox.' Below the solution, there is a 'RATING' section with five stars, a 'COMMENT' section with the text 'Today, it worked well for me. Great idea!', and a 'SUBMIT' button. On the right side, there is a 'BEHAVIOR TASK' section with 'PUBLISHER: Susan Support', 'PUBLISHING DATE: 30. June 2014 - 11:51', 'MY PROGRESS: Active', and 'LAST EXPERIENCE CAPTURED: 30. June 2014 - 13:52'. At the bottom right, there are buttons for 'MARK AS SOLVED' and 'IGNORE'. At the bottom left, there are buttons for 'SOLVED' and 'IGNORED'. At the bottom center, there is an 'EVIDENCES' section with the text 'No evidences are attached.' and a 'SUBMIT' button.

Fig. 1. A recommendation in ARA with one experience being entered

To test the recommendation in practice, personal experiences are written down to decide about how well the recommended solution applied (see Figure 1). Users capture their experiences by noting down a comment and by rating how well the solution worked (1 to 5 stars). In addition they can record the effort (e.g., the minutes of working time required) and the benefit (e.g., the number of completed tasks) of applying the solution. These experiences are shared with the other members of the target group to benefit from the application in a group.

To evaluate a recommendation, the app allows users to view all experiences with an aggregation of the ratings, efforts and benefits captured. All this can then be used to get an overview how well the solution works in practice to be taken as a basis for the decision if the solution should be kept, updated or discarded.

In the continuation of the exemplary scenario, the team discusses the recommendation's weak points (due to the captured experiences) during the regular team meeting and agrees on adapting it in respect to the selected period in time. It is then re-evaluated, re-discussed, and finally marked as solved when team agrees about a well-functioning final solution.

### 3 Evaluation & Outlook

A summative evaluation of the ARA took place at our company IMC over a period of six weeks. Ten staff members took part in a time management coaching. The approach combined the usage of a computer activity tracking tool and the ARA with a weekly coaching session. In the weekly coaching sessions the coach and the coachee reviewed the individual progress, adjusted the time management rules if not appropriate anymore, or, when the particular goal has been achieved and the new behaviour has been adopted, decided that no further practice regarding that goal is needed.

The Activity Recommendation App served well as a support for learning time management by providing a data basis for the coaching sessions. It was used by coach and coachee to set time management goals and to document and monitor the progress in learning new time management techniques. Both benefited from the better preparation for the coaching sessions available with the notes in ARA. Furthermore, the app helped the coachees to focus their goals. Two things were missed concerning ARA: It lacks an interface optimized for smartphones and currently no reminder function is available which motivates the user to capture experiences. These shortcomings can be addressed in future development.

The coach and several coachees also suggested forming peer groups to train time management techniques. They could then benefit from sharing experience data to compare own progress with that of others and learn from each other's experiences. IMC has started a free online course for time management that includes usage of the ARA [4]. In addition to the course, learners can book a human tele-coach for a fee.

### References

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