

Intelligent Human Computer Collaboration (HCC)

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Abstract. Claims have been made that more than 50% of companies corporate knowledge is inside peoples heads. Sharing experience and knowledge in companies is largely unsupported. Networks of people have proven to be efficient both within organisations and within groups of people sharing the same profession etc. We propose an approach where experience and knowledge is shared in a dynamic collaboration between humans and computers where the issue is to efficiently capture/share/reuse experience and knowledge. For this we propose the use of a number of different methods and techniques, in particular EM and AI methods and techniques, CBR, collaborative filtering, user modelling...

1 Introduction

Riesbeck and Schank: "... *the essence of how human reasoning works. People reason from experience. They use their own experience if they have a relevant one, or they make use of the experience of others ...*"¹

It is time to move beyond information sharing, but is easily forgotten that experience sharing is achieved by complex and creative interaction/collaboration between people. Networks of people have proven to be efficient both within organisations and within groups of people sharing the same interest, profession etc. The value of such collaborating networks is already recognised, but are rarely supported actively and knowledge is not preserved in the organisation if key persons in the net leave.

Not only aiding this process but also including computers as an active element in the process is a major challenge, the name Human Computer Collaboration (HCC) is proposed to emphasis the complexity of this process.

2 Knowledge Nets and Intelligent HCC

Putting everything on the web is not the ultimate solution for an organisation and the growing amount of computer stored documents and information may even obstruct the

¹ C. Riesbeck, R. Schank. *Inside Case-Based Reasoning*, Lawrence Erlbaum Inc, 1989.

goal of improving efficiency. To counteract this by improving search engines with better user interfaces is like first scrambling an egg and thereafter produce ergonomic tools trying to extract the yolk, not very efficient.

The value of many companies will in the future not only be the experience and knowledge collected by humans and computers, but also how seamless and efficient collaboration works in the organisation. The knowledge and experience management communities challenge is to provide users at organisation (technical and administration staff, engineers, project administrators etc.) with access to systems aiding all aspects of HCC and enabling persistent competence/knowledge nets.

The tools aiding collaboration should know the users profile, competence, interaction preferences and the tools should already prepare user interaction before it occurs. The experience, knowledge, ideas etc. are prepared to fit the user (knowledge, learning capacity etc.), task and circumstances (terminal).

Figure 1 shows a sketch of a system that supports knowledge sharing in a *Collaborative Knowledge Net*. A collaborative agent is from the user's point of view coordinating the knowledge, locally stored or shared. The locally stored knowledge may be cases the user experienced. This knowledge also represents the users experience and if knowledge is accessed outside the users knowledge, the own knowledge is used as filter, i.e. if the user already has own similar experience, there is no need to show some others experience in the same area. Comparison of knowledge may be valuable, e.g. to find differs between users and how they approaching a similar problem.

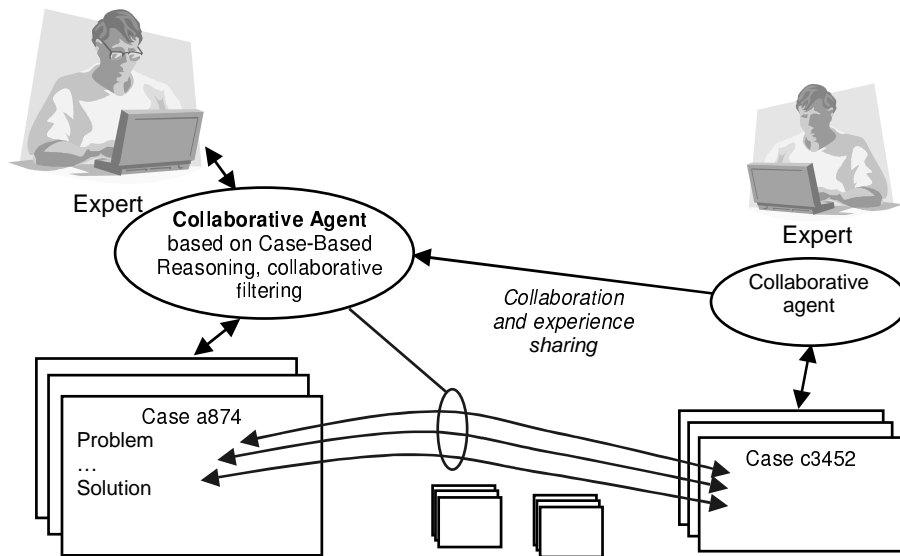


Figure 1. Example of an Experience Sharing Collaborative Knowledge Net