Can Agent Systems Deliver?

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Since 1994 we are told to believe that software agents will become the next revolution in computer science [5]. This change is to occur not only in the ways we construct software [4] but it is also to have a much broader impact on the field of human-computer interaction [3,5]. Unfortunately, as it is easy to see, the revolution prophesized in 1994 does not seem to materialize (regardless of the rapidly increasing number of conferences, workshops, special sessions, publications, etc.). It is not the case that when we turn the computer on in the morning, we contact “our agent” to receive a personalized newscast, our day-plan and, on the basis of that plan as well as the weather forecast and knowledge of our dressing-preferences, an advice what to wear (agent ideal servant). Similarly, when creating software for an e-shop we do not utilize pre-existing agent-modules (e.g. advertising agents, seller agents, inventory managers etc.). To the contrary, it is rather difficult to point to a successful large-scale implementation of an agent system completed using one of the multitude of existing and constantly created agent environments. The aim of the presentation will be three-fold. First, a brief introduction to software agents will be presented followed by the discussion of major points raised “for” and “against” software agent systems (including highly critical analysis presented in [6]). Second, it will be shown, that it is possible to implement large scale agent systems, as state-of-the-art agent platforms (e.g. JADE) easily scale up to more than thousand agents and two hundred thousand messages [1]. Finally, a positive research program will be presented and illustrated by a model agent based e commerce system using negotiating agents with dynamically loadable modules [2].

References

Biography
Marcin Paprzycki is currently on leave of absence form Oklahoma State University and works as an Associate Professor at the SWPS University in Warsaw, Poland. He has received his M.S. Degree in 1986 from Adam Mickiewicz University in Poznań, Poland and his Ph.D. in 1990 from Southern Methodist University in Dallas, Texas. His initial research interests were in high performance computing and parallel computing, and over time they evolved toward distributed systems and Internet-based computing; in particular, agent systems. He has published more than 200 research papers and was invited to Program Committees of over 200 international conferences. In 2001 he was elected Chair of the IEEE Technical Committee on Supercomputing Applications that he lead through a merger that lead to the creation of the IEEE Technical Committee on Scalable Computing that he currently co-chairs. He is on editorial boards of 8 journals and book series.