PROJECT PERIODIC REPORT

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1. Publishable Summary

The last year of the ROBUST project had a strong focus on finalizing and bringing together all methods and components developed in the course of the project, to deploy them in a public demonstrator and to have real users evaluate the tools and applications on real data. Furthermore, all partners in the project have strengthened their dissemination activities and completed and extended their exploitation plans.

With the end of October the consortium has managed to bring the ROBUST to a state where work is completed and all efforts have been joined in the closing of the project. Scientific findings have been published and disseminated at numerous prestigious conference and journals. A large part of the source code has been released under open source licenses. The use case partners have prototypes and applications at hand which have been tested and evaluated by end users.

More specifically and on a work package level, WP1 has worked on additional features and services to the risk management framework. Risk dependencies (definition, requirements and implementation), integration of the user interface with the SIOC data model and agent-based simulation for risk dependency assessment were amongst the final release updates. The final M36 code release was delivered on time. The code is publicly accessible at the SMIND code repository. Report D1.3 (M30) Beta real-time risk management framework and D1.4 (M36) on Final real-time risk management framework were delivered on time. D1.4 described the final release of the risk management framework and included the user manual as well as the developer guide. The final version of the framework was used for end user evaluation. The participants were IBM community owners and the framework ran on IBM data. A questionnaire was developed and the results were included in D7.5.

In WP2 we worked on two major topics: providing efficient processing methods for iterative algorithms as part of the parallel analysis platform and designing and implementing query refinement operators for real time exploration of online communities. We developed models for the scalable execution of iterative operators as well as an optimistic recovery mechanism to improve the performance of parallel algorithm execution particularly for graph algorithms. We also conducted investigations of the options to compare parallel versus in-memory execution of graph algorithms as well as the efficient, distributed factorization of large matrices on clusters of commodity machines.

The efforts in this last reporting period in WP3 have been concentrated around: (i) the integration of WP3 analyses and visualisation models for the end-user evaluations conducted by the use case partners (documented in D7.5 and D8.4), (ii) the development of analysis models for studying the evolution of user needs in online communities (documented in D3.4) and, (iii) the development of scalability studies, and the release of analysis modules as open source, in collaboration with WP6.

The main effort in WP4 has been on refinement and evaluation of policy model simulation. In the course of this work the policy model has been further extended. A systematic evaluation of the community and policy model has been accomplished, including an analysis of the parameter space and development of a methodology for quality estimation of simulation results. The integration with the risk management methodology in WP1 has been extended by adding simulation as an additional method for risk assessment.

The focus of WP5 in the 3rd and final year was on completing the software suite for community analysis. Concepts of the components forming the Suite for behaviour analysis and topic/sentiment

tracking were finished in the end of year 2 and integration was finalised during year 3. More work was spent on closer integration of IBM components, which was reported in an updated version 3.0 of D5.2 in the end of year 3. All components of the Structural Analysis and Cross-community Tracking Suite were finished and integrated in the course of year 3. This completed the overall WP5 software suite. In addition, major effort was spent in cooperation with mainly WP2 on pursuing a performance and scalability assessment of the provided WP5 functionalities in relation to the WP2 infrastructure. This was directly following a reviewer suggestion and resulted in the additional deliverable D5/D2.supp, also submitted in the end of year 3.

In WP6, efforts were focused on releasing final architecture and platform version, integration of a final set of ROBUST components and releasing the ROBUST public demonstrator. The final version of ROBUST Platform has been released with a final set of WP1-WP5 components integrated, ready for final evaluation. A public version of ROBUST Platform has been released and is available online, integrated with publicly available data (Boards.ie) to present capabilities of the system. WP6 was also involved in various tasks related to the final evaluation of the ROBUST Platform, performance and scalability testing as well as preparing the Platform for various options of future exploitation, like preparing open source platform release, delivering ROBUST platform as iWidget (integration with IBM Connections), in-memory analysis of community data (QlikView), as well as ensuring that the platform is flexible and extensible enough and evaluating integration with other systems and tools.

The last year of ROBUST in WP7 was dedicated to two tasks: T7.4 on Content Quality, and T7.5 on the effect on Community Polity. For addressing content quality, we implemented a rich set of content quality features. The results of the content quality analysis were checked for correlation with the community health and were evaluated by end users in visualization UI. Also for studying the effects of the rich set of ROBUST tools on Employee Community Polity, several user studies were conducted. In particular, participants were taken through an extensive hands-on demonstration of the ROBUST Risk Management tool, and asked questions about their experience as they go. Results show a very positive acceptance of the concept, and great potential for the use of the tool for predicting and managing risks.

The major effort in this last reporting period in WP8 has been concentrated around the development of PULSAR v2. As such, a new version of the prototype including a new UI framework, performance optimization, improved navigation. has been delivered and documented in D8.4. Based on the v2 prototype a user evaluation has been conducted, the results evaluated, documented and discussed in the D8.4.

In WP9, Polecat have concentrated their work in three main areas. Firstly, as part of T9.4, a metaphor based visualisation (and backing service) has been developed and evaluated. Secondly, new algorithms have been researched and developed under T9.5 and incorporated into both the Polecat flagship product, MeaningMine, and a new mobile solutions called WayPoint. Thirdly, an investigation into exploiting ROBUST technology in the health sector has been undertaken and reported upon.

In WP10, dissemination activities of the ROBUST consortium have maintained a high level of output of scientific publications and conference and workshop presentations. The ROBUST achievements in terms of publication numbers as well as quality, including several best paper awards at prestigious events, underline the quality of the consortium and the work being performed in the project. An intense communication activity in the form of press releases and news items complemented this work as documented on the project website.

The WP10 exploitation activities were pursued taking into account the different profiles of the ROBUST partners (academic, SME, large corporations): Academic partners have engaged their respective technology transfer entities and/or submitted results into open source projects. The commercial partners have integrated their own as well as partner's project results into extensions of their own portfolios or prototypes that allow addressing new types of customers or new use cases. Joint approaches to exploitation have been investigated in a number of forms such as the integration of ROBUST components into the platform of one partner (IBM Connections), the placement of ROBUST components on a new marketplace for analysis components (Luxid Community) and finally through the compilation of the set of ROBUST components into a comprehensive platform that facilitates discussing and engaging with external potential clients.

Management activities in WP11 primarily focused on three tasks: monitoring and tracking of the project's financial situation, assuring the quality standards of project work in the last year and bringing together the work and effort from all WPs and partners to ensure a successful closing of the project. As consequences of these tasks, we developed a budget re-allocation plan to redistribute resources foreseen to remain unused by some partners. Furthermore, we presented our results to the project's advisory board and focused in project meetings and teleconferences on completing integration work.

Overall, ROBUST has progressed very well in the last period. All milestones have been reached and all deliverables have been submitted. With the completion of the review meeting and final reporting activities we are looking forward to a successful closure of the project.