Identifying semantic inferences between text units is a major underlying language processing task, needed in practically all text understanding applications. While such inferences are broadly needed, there are currently no generic semantic "engines" or platforms for broad textual inference. The primary scientific motivation for the EXCITEMENT project is to change this ineffective state of affairs and to offer an encompassing open source platform for textual inference. On the industrial side, EXCITEMENT is focused on the text analytics market and follows the increasing demand for automatically analysing customer interactions, which today cross multiple channels including speech, email, chat and social media.

**Target Groups of the project**
The target groups of the project are: scientific and technological communities, application developers and the business environment.

**Objectives, Innovation and Outcomes**
There are two interleaved high-level goals for this project, which would yield two corresponding outcomes. The first is to set up, for the first time, a generic architecture and a comprehensive implementation for a multilingual textual inference platform and to make it available to the scientific and technological communities. To a large extent, the idea is to follow the successful experience of the Moses open source environment for machine translation, which has been making substantial impact on research in that field. This will enable developers of many text-processing applications to leverage the platform and boost their semantic inference capabilities. It will also provide developers of inference technology an effective environment for implementing and evaluating their components, and an easy entry-point for research in this field.

The second goal of the project is to develop a new generation of inference-based industrial text exploration applications for customer interactions, which will enable businesses to better analyse and make sense of their diverse and often unpredicted client content. These goals will be achieved for three languages – English, German and Italian, and for three customer interaction channels – speech (transcriptions), email and social media.

**Impact**
The expected impact of EXCITEMENT is driven by the prospect to lay new grounds for powerful textual inference technology. On the scientific side, the realization of the generic textual entailment paradigm within an encompassing open platform would end the current state of affairs in applied semantics technology, which, for a long time was lacking a feasible unifying driving framework. On the industrial side, providing new inference capabilities will open new horizons for text analytics in general, and customer interaction analytics in particular, which will enable businesses to better harness the value of their customers' inputs and thus increase their competitiveness. Altogether, the expected outcome of EXCITEMENT ranges from new scientific insights all the way to novel practical technology in the hands of European developers and end-users. The consortium's dedication to the open source platform, shared resources and transparent scientific dissemination will ensure that the results strengthen the R&D base in applied semantics and text exploration: from
university students to commercial developers, all types of both academic and industrial players will benefit from the proposed project.

**Achievements in the first project year**

During the first year of the project (January-December 2012) the EXCITEMENT consortium has progressed toward its goals, with significant achievements:

- the use cases of the project have been defined and two main scenarios have been identified: (i) text exploration based on entailment graphs; (ii) retrieval of customer interactions based on textual entailment.
- Collection of datasets of customer interactions, definition of the guidelines for the annotation of entailment graphs, realization of various annotated datasets for the three languages and the three channels of the project.
- Complete specification of the Excitement Open Platform architecture and implementation of the Java interfaces.
- Implementation of the Excitement Open Platform (EOP) specifications and initial population of the platform with linguistic modules, entailment decision algorithms and lexical resources. First EOP prototype.
- Collection of resources for the three languages of the project, and investigation of novel methodologies for the automatic acquisition of knowledge.
- Definition of the transduction layer for the integration of the EOP within the industrial scenarios provided by the industrial partners.
- Initial setting for the open source distribution of the platform, as well as publication and dissemination activities.

**Academic partners:**
- Bar Ilan University, Ramat Gan, Israel (I. Dagan)
- DFKI, Saarbrücken, Germany (G. Neumann)
- Fondazione Bruno Kessler, Trento, Italy (B. Magnini)
- University of Heidelberg, Germany (S. Pado)

**Industrial partners:**
- NICE Systems LTD, Ra'anana, Israel (project coordinator)
- OMQ GmbH, Berlin, Germany
- AlmaWave S.R.L., Rome, Italy

Project start date: 1/1/2012
Duration: 36 months