CAMELEON Project

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Abstract

This document describes the preliminary exploitation plan for the CAMELEON project.

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1. Introduction

The first years of the new century have seen an intense pressure on IT developers to find better tools to help their corporations to get applications to market rapidly. Effective user interfaces have been proved to be necessary to ensure general acceptance of any kind of product and services. Moreover, as the dot.com fever began to dim at the end of 2000, the momentum to create more business-critical applications within shorter time frames did not decrease. This means a possible technology transfer projection should be customer-oriented rather than product-oriented. But as already mentioned, it is beginning to look like dot.com companies who have followed the directions of their marketing experts have seen huge budgets disappear in valiant but disastrous marketing customer-oriented efforts.

The exploitation activity might have a strong industrial focus on business and private level. MTCI ensures immediate exploitation, which is further enhanced by the applied research partners via their international clientele. IS3 also ensures immediate exploitation through the development of e-business and e-learning applications.

Today, be successful in exploitations, a CAMELEON-based product should be competitor-oriented. It will open the chance to look for weak points in the positions of its competitors regarding "intelligent home", office and telematics applications in the car. MCTI plans to transfer it to several Motorola departments what deals on that item. IS3 plans to use the CAMELEON-based products for the development of e-business and e-learning applications.

Throughout 2001, the appearance of a variety of products utilizing advanced interface technologies and user-centered design techniques has been observed. Several companies launched on the market combinations of tools that allowed developers to create applications making use of context and location information for enabling and leveraging effective interaction.

In a future marketing plan, a section entitled "Competitive Evaluation" will be added and many more information will be dedicated to the competition in the Human Computer Interaction community. It will develop a list of competitive weakness and strengths as well as a plan of action to either exploit or defend against them.

Despite from business figures and the growing acceptance of tools and components that allows designers to develop effective and usable interfaces, it is

premature to assert that the formalisms and methodologies to express context-dependent information have reached mainstream adoption. In fact, it represents a development paradigm significantly different from what most organizations are familiar with in terms of creating applications. Moreover, no consistent approach has been taken by the various tools producers, which have rather headed towards the adoption of proprietary solutions that openly contrast with the very fundamental methods and techniques.

An additional hurdle in the full adoption of design principles, methods and tools for the development of highly usable context-sensitive user interfaces is the lack of support for multi-target user interfaces. This often entails a duplicate effort, so that designers have to build their system in an ad-hoc way resulting in high development and maintenance costs.

In this respect, the results of CAMELEON will represent a significant contribution for the Human Computer Interaction community, covering a gap that is nowadays observed in its usability. At present, a framework based on the CAMELEON concept would virtually have no competitors, though this situation could change swiftly.

A pessimistic estimate of the potential European market of actors, platforms, environments and system resources enriched with the CAMELEON concept can easily reach a 250M€ just for year 2005, based on current estimates for the market growth.

2. Levels of exploitation

In the Description of Work, we identified six principle routes through which transfer to the industrial and academic communities should take place. We confirm that we follow such approach and provide an updated description for each route.

Level 1: Basic Information Dissemination

The results of the project should be documented and published within the general scientific community, both through conference and journal papers. A significant number of these publications will involve authors from more than one site, emphasising the European dimension of the work. In addition to regular publications, the project will make technical reports available electronically via World-Wide Web (WWW). This has already started. A good number of papers have already been published (see Progress Report for details) and they are available through the CAMELEON Web site. IS3 has promoted CAMELEON by having an exhibition stand at two industrial trade shows during year 1 of the project: the first one at MIDEST (which is the reference international exhibition in Europe for industries products) and the second one in Reims organized by Orange France-Telecom (whose goal is to promote mobile e-business technology).The CAMELEON coordinator has made these services publicly available since the beginning of this project. This form of transfer will occur mainly over the duration of the project. If circumstances permit, the electronic archive will be retained after the project concludes. This may be a significant secondary form of transfer, as more organisation have access to Internet, and as knowledge about the site percolates through the academic and industrial community.

We will also promote the project in industrial events and workshops in order to reach a wider audience.

In addition, the CAMELEON project is co-promoter of the International Symposium on Mobile Device and Human-Computer Interaction that will be held in Pisa (September 2002). A flyer describing the project will be distributed to all the symposium participants. The symposium will have a good participation of both academic and industrial experts from many countries.

Level 2: Training

In order to avoid that the results of the project will be communicated to a limited industrial community, various initiatives will be organised. We have a task, Information Dissemination, whose main purpose is to organise seminars, workshops, and meetings with our industrial contacts (such as EDF and Shneider Electric in Grenoble) as well as projects about similar topics (starting from those industrial projects which involve Motorola Italy and academics projects such as

CANEGE which involve IS3, CANEGE is a consortium that brings together six French universities involved in the development of a full on-line course on management and business). Wider industrial groups will be reached through seminars presented by consortium members to other organisations with which they are in contact, and to club of industrial users. A tutorial has already been given by project coordinator at AVI conference. He was also invited to give a one-day seminar at Philips Research in Amsterdam.

Level 3: Process Improvement and Technological Development

The result of CAMELEON will be a method, tools and techniques for developing user interfaces for multi-context applications. By developing the techniques in conjunction with industrial partners the consortium aims to ease the path for integrating research results into the development process employed by the current software industrial practice. Industrial partners (Motorola and IS3) will use CAMELEON results and the competence acquired during the project in the area of Context-Adaptive User Interfaces, in order to develop new products for the European market. Other European industries will take advantage as well in developing new products to be easily deployed across different countries, where human machine interaction may need specific refinement. Besides, CAMELEON results will be integrated in the software product development cycle of industrial partners. In particular, Motorola Technology Center Italy expects to exploit Cameleon results directly in the European units of Motorola (mainly in UK, France, Germany but Motorola is present in almost all EU countries). The Turin Software Center will exploit results directly in his software product development cycle. This will help the Turin center to gain a good competence in this area that can be exploited in developing new products for the European market. As for IS3, integrates results in a project of mobile-learning : M-CAMPUS that concerns already several European universities and 250.000 European industries. IS3 has signed an official partnership with Orange and France Telecom mobiles.

The main aspects of industrial relevance for the CAMELEON project are:

- improvement of the development process and time to market of multi-target applications;
- rich interface that increases usability and then the customer's base;
- unified way of treating different contents and possibility to write code reusable through different devices;
- technology usable in a number of different environments and promising fields.

Level 4: Results of Application of Techniques

Work on the case studies, involving collaboration between researchers and members of the industrial organisations taking part in the consortium (Motorola and IS3) and other organizations that have already expressed the desire to apply the results to case studies of interest for them, will be ongoing over the three-year life of the project. One result of the application of the new method developed will be prototypes that will be validated against usability requirements. Part of this usability evaluation will be performed empirically by real users provided by case study proposers. These user testing will allow current designers to know how new methods and new technology can improve their work in front of the increasing complexity of their tasks due to the growing variety of possible contexts of use. IS3 will primarily use the tools for the development of an application for m-learning that is particularly promising as well as for the industrial rich media dynamic catalogue that was originally planned. This application will be accessed through workstations as well as from Tablet PC, wireless PDA's, Smartphones and mobile phones.

Level 5: SIG CAMELEON - Advisory Group

In addition, a Special Interest Group on CAMELEON (SIG CAMELEON) has been settled. The purpose of SIG CAMELEON will be to facilitate communication between the CAMELEON consortium and possible users of the results of the project. We foresee three types of users: companies whose business is in developing multi-target applications that can be interested in using methods, models and tools developed in CAMELEON, end-users who would like to have applications obtained using the CAMELEON approach, and universities and research centres that will be interested in the tools for teaching purposes and for their projects. We will organise a mailing list for SIG CAMELEON, and members will be invited to attend one of the technical meetings (once per year) in order to better discuss results and issues with the CAMELEON consortium.

We identify two levels of memberships in SIG CAMELEON:

Level 1 (Basic Level), each CAMELEON partner can propose a member at level 1 and that is automatically accepted by all the consortium. SIG members at level 1 will be added in the Sig-cameleon mailing list (already activated at sig-cameleon@cnuce.cnr.it), they will be listed in the CAMELEON web site, they are informed about the CAMELEON meetings and related events and can ask to attend a CAMELEON meeting.

Level 2 (High level), each CAMELEON partner can propose a member at level 1 but its acceptance should receive approval by all consortium partners. In addition to what is allowed to members at the basic level, this type of members can access the CAMELEON BSCW server and all the material contained in it (working papers, deliverables, slides of the meeting presentations, ...). They can use the

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CAMELEON tools. They are regularly invited to attend the CAMELEON meetings.

Level 6: Spin-off companies

In terms of industrial exploitation of the CAMELEON results, six months before the end of the project the CAMELEON consortium will consider the possibility of starting one or more spin-off companies involving either the consortium or parts of it. The business of the spin-off company will mainly be in providing assistance and services related to CAMELEON method and tools and applying them in developing real-world applications. In each academic partner it is possible to start spin-off companies according to recently introduced regulation that will be carefully considered when the results will be mature. The source code of the tools can be open according to a licence that will be identified during the project.

IS3 plans to be publish, promote and integrate CAMELEON solutions, as was proposed to the commission. IS3, which is specialized in the new technologies and direct marketing, has available the infrastructure necessary to deploy and host these solutions. A domain Internet is already available : www.plasticity.org as the official portal to propose and pursue developments as well as to create a community.

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3. References