

DYNOCA

dynamic networked organisations in the consultancy/agency sectors

The challenge

Freelance professionals have always come together in short lived teams that pool their skills to address a particular task on behalf of a customer. However there is a growing trend towards 'virtual organisations' where the team members come from different countries and time zones and seldom, if ever, meet during the course of a project. In addition, individual experts may simultaneously be members of several different virtual organisations.

The Internet has made it possible to create 'dynamic networked organisations', in which the team members use electronic communications to gather and exchange the information needed to progress projects. The membership of such dynamic networked organisations can change during the course of the project to match the specialist skills needed in individual phases of the project – e.g. market research, product design, prototyping and testing, sales and customer support.

Project teams can therefore consist of an ever-changing mix of players from companies of different size (ranging from large enterprises to micro enterprises and freelancers) working in different IT environments (e.g. SUN or IBM workstations, PC, Apple MacIntosh). The individual players may come from different parts of the world so that the project may have to manage cultural and linguistic differences and work that is taking place in different time zones. It may also have to manage conflicts of interest, where team members are simultaneously working on similar projects for other customers.

Good IT support is essential if the contributions from temporary and permanent team members are to be integrated seamlessly into the work of the project. The fluid membership of the team requires effective administration of team membership and control of access to sensitive project documentation. It also implies that any central project server and database must be able to support clients in a variety of IT environments.

The technical solution

The IST project [DYNOCA](#)¹ has developed an IT system to support dynamic networked organisations in the business consultancy and media sectors. The project started by analysing the inter-organisational information flows in dynamic networked organisations in order to establish a reference model for such organisations and define the requirements for modular software systems to support their work.

Based on these requirements the project implemented an Internet based system² with a client-server architecture for providing efficient and secure data access based on a RDBMS and supporting distributed data management. The central server can support a variety of data formats, e-mail clients and communications and transport protocols. Individual users require no special hardware or software and can access the system using any computer with an Internet connection. The user interface is based on browser functionality in order to make it as intuitive and user-friendly as possible. Users can adapt it to a certain extent to suit their individual needs (e.g. menus in their own language) and an effort was made to provide a similar 'look and feel' for different devices such as PCs, PDAs and WAP phones.

Security is an important aspect of the system. The security features include easy user management and administration, support for different levels of access rights, user authentication and secure data transfer. Data is mirrored to a second server to provide system back-up and crash recovery.

The results

The prototype system developed by DYNOCA was used by two of the project partners in trials of distributed working in order to determine its:

- User friendliness: Is the system self-explainable or is there a need for training?
- Usability: Does the system really support the tasks, employees have to perform? Does the system provide the right information for the role an employee has in the project?
- Economic viability: How much time and cost savings are generated, when the system is used widely within the enterprise? How does the quality improve?
- Commercialisation prospects: What are the right marketing and market introduction strategies? At what prices the system could be sold? What kind of additional services have to be offered to gain long-term customer commitment?

Consultancy Trial

In the first set of trials, the prototype was used by the Portuguese partner FORDESI on a number of internal projects. FORDESI then tested the system with its partners from Israel and Germany in another IST project SABARECO to develop the Consortium agreement for the project. The German project manager, Produotec developed a structure for the consortium agreement and uploaded it to the DYNOCA server so that all the partners could have access to it and comment on it. The version management functionality of DYNOCA made it easy to track the changes, and know who had made them. The tool enabled the members of the team to communicate in a very fast and effective way, though they were geographically apart and in three different time zones with different working days (In Israel, people don't work on Fridays).

Media Trial

The other trial involved one of the German partners, BIG and the project chosen to test the system was the overhaul of the berlininfo.com information service, including the introduction of a new technical framework and the redesign of the content. The project involves 11 people, including company managers, web designers, internet consultants, programmers, content managers, freelancer writers, online editors, and users. A number of these people were freelancers working mainly from home. The DYNOCA system was used to help them share data and files and keep in touch with the product manager about the usability and functionality of the new website design. This significantly reduced the number of physical meetings needed to carry out the project and speeded up the exchange of project files. The version management functionality helped reduce the risk of misunderstandings associated with different versions of working documents.

Experiences from trials

Both trials confirmed that the system could indeed deliver the functionality needed to support distributed project teams and that it reduced travel costs and the time taken to complete the projects. There were some reservations about the user interface, which was found to be less intuitive than its designers had hoped it would be. However the user friendliness improved as users became more familiar with the system. Users also identified a number of enhancements that would significantly add value to a commercial system based on the prototype and also highlighted refinements to improve the effectiveness or ease of use of existing features.

Demonstrations to potential users

As well as the formal trials, each of the DYNOCA partners demonstrated the system to potential customers. These included large companies, SMEs and freelance consultants. Their areas of business included the design of helicopters, consultancy on business process engineering and the management of corporate identity, and the development of e-business solutions and other types of software. Most reacted positively to the system and offered constructive comments that will help the future evolution of the system. Although DYNOCA was initially designed with the business consultancy and media sectors in mind, it would appear to have potential for use in any type of dynamic networked organisation.

Conclusions

DYNOCA has developed and tested a prototype of an innovative system that delivers most of the functionalities needed to support a distributed dynamic networked organisation. It allows the members of such an organisation to manage their collective knowledge more effectively, and improves the communication and information flows between the various entities involved in individual phases of a complex project.

The architecture means that there is no need to install clients (either hardware or software) at the individual user's sites. The system can be accessed by any computer with an Internet connection. It can therefore support team members anywhere in the world. It can be rapidly configured to provide the facilities needed by an individual project team and can assure the confidential management of sensitive documentation.

¹ The project is led by the German company 'artundweise' and includes partners from Germany, France and Portugal. It started at the beginning of 2000 and completed its work at the end of 2001.

² A more detailed technical description of the architecture and functionality of the system can be found on the DYNOCA website <http://www.dynoca.net>



A further important feature of the system is that users need very little training – the aim being to provide a user interface that is approachable for anyone familiar with industry standard applications such as web browsers and MS Office.

It is likely that commercial systems based on the DYNOCA prototype will be developed by the project partners in the coming years. These should be of considerable interest to both large and small businesses who are regularly involved in one or more collaborative projects with dynamic and distributed teams.