
Editorial

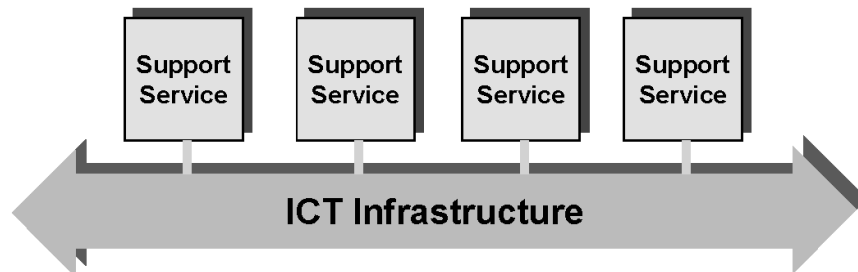
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Infrastructures for new virtual organisations

The ICT-based infrastructure plays an *intermediary* role, as the enabler of interoperation among organisations and support services provided in the virtual organisation (VO), and representing the (horizontal) base means for safe and coordinated interactions among the VO members. Therefore, it plays a role similar to the VO's 'operating system' or executor, making the details of the base collaborative network 'machinery' transparent to its application software. On top of the infrastructure, a growing number of (vertical) services, e.g. software tools and applications, provide the necessary support environment for the required behaviour of the virtual organisation (Figure 1)

Figure 1 ICT-based infrastructure and support services for virtual organisations



Design and development of an easy to use, transparent, and affordable ICT-based infrastructure is a key prerequisite for the effective large-scale implantation of collaborative network organisations such as VOs, professional virtual communities, e-science communities, etc.

Progress in information and communication technologies and the accumulated experience with the first cases of virtual organisations/virtual enterprises lead to the emergence of new collaborative networks that require new infrastructures and new support tools. As a representative of this trend, this issue includes five examples of novel infrastructure developments for new forms of collaboration or advanced support for more classic collaboration forms that consist of:

- advanced business process coordination in dynamic supply chains, allowing controlled transparency of joint processes
- collaborative experimentation environments for scientific domains (e-science/Virtual Laboratories)
- coordination of collaborative teams such as codesign or coengineering teams, based on a flexible workflow management approach
- virtual communities and VOs in remote elderly care
- collaborative commerce.

These infrastructures address and explore a variety of paradigms and technologies, including:

- multi-agent systems and mobile agents
- federated information management
- component based framework
- grid computing
- flexible workflow.

In line with the increasing interest on 'human' facets of collaborative networks, an emerging area addressed here focuses on the combination of virtual organisations with virtual communities. This can be exemplified by the recent cases in e-science and elderly care.

The IFIP series of Working Conferences on Virtual Enterprises (PRO-VE), as the pioneer international conference specifically devoted to virtual enterprises (VE) and VOs, represents an important contribution to the consolidation of this area and an opportunity to discuss both the research challenges and the practical implantation aspects. This issue is based on the extended versions of four selected papers from the PRO-VE'02 conference, focused on the infrastructures for emerging VOs.