

Toward a Process Handbook for Organizational Coordination Processes

The goal of this project at the MIT Center for Coordination Science is to help organizations redesign their existing processes and to "invent" new organizational processes that take advantage of information technology.

The project addresses these problems in two ways: (1) by collecting organizing, and analyzing numerous examples of how different groups and companies

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perform similar functions, and (2) by developing new methodologies for representing and codifying these organizational processes.

Research Approach

These process descriptions will be stored in an on-line "process handbook" which companies can consult to find a variety of alternative ways for performing particular activities, along with experiences and guidelines about which alternatives work best in which situations.

A key intellectual contribution of the work is expected to be a novel approach to representing processes at various levels of abstraction. This approach uses ideas from computer science about inheritance and from coordination theory about managing dependencies. Its primary advantage is that it allows users to explicitly represent the similarities (and differences) among related processes and to easily find or generate sensible alternatives for how a given process could be performed.

Project Members

Principal investigators on the project include Thomas W. Malone (MIT), Jintae Lee (University of Hawaii), Kevin Crowston (University of Michigan), and Brian Pentland (University of California at Los Angeles). The project has recently re-

ceived a five year grant from the U.S. National Science Foundation. ■

References

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Research Programme in Supra-organizational Systems

This Programme was established in 1988 at the Department of Commerce at the Australian National University. Its purpose was to address systems which transcend the boundaries of individual organisations. The term 'supra-organisational' was coined to encompass the many different forms such systems take. The concentration of the Programme is in the following areas: Electronic Commerce, Consumer EFTS, EDI, EDI in Government and International Trade, On-line Trading, Wide-area and Public Networking and Dataveillance.

A considerable amount of work has been undertaken on a variety of aspects of EDI. The scope has progressively broadened to include all aspects of elec-

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tronic commerce encompassing the complete range of electronic services which can be used in support of the buying and selling of goods and services. Additional areas include on-line or screen trading, databases and catalogues, and commercial use of the Internet. Other areas of interest have been Consumer Electronic Funds Transfer Systems (EFTS), particularly financial applications of smart cards and computer matching.

Profile of the Programme

The orientation of the Programme is mainly towards business and policy aspects of IT applications. Support for the Programme has been attracted from a variety of sources. In some projects, the

research investment is recovered from sales of the resulting publications; the depth of understanding of supra-organisational systems (S-OS) is enhanced by consultancy work. The projects undertaken provide valuable information to user-organisations in the private sector, and in Federal and State Governments; to product and service providers and consultants; to industry associations, such as the EDI Council of Australia (EDICA); and to organisations fulfilling policy and regulatory roles, such as the Reserve Bank of Australia, and the Federal Government's Information Exchange Steering Committee (IESC).

'Supra-organizational Systems'

Since the term S-OS is not in common usage, this section explains the notion. From the late 1960s, telecommunications technology was increasingly used to link geographically dispersed users with computers. This era might be described as that of 'intra-organisational systems'. Some of these systems have become

large, complex and highly integrated, such as distributed CAD/CAM and CIM systems. During the 1980s, the combination of computers, communications and in some cases robotics (now referred to as Information Technology - IT), was applied not only within organisations but also across organisational boundaries. The needs of pairs of organisations operating in partnership are served by 'inter-organisational systems'. Such systems may involve a terminal installed in one organisation and connected to a processor in another, or direct links between the processors of two organisations; for example, reservation systems enable airlines to maintain direct contact with travel agents who sell tickets on their flights.

In many cases, the economics of IT militate against the proliferation of inter-organisational systems. Instead, arrangements have arisen in which many organisations communicate through some form of common facility. The term 'multi-organisational systems' is used for arrangements such as EFTS, whereby financial institutions conduct transactions electronically instead of via cash or paper-based documents. Another class of multi-organisational system is EDI or computer-aided logistics support (CAL) and on-line or screen-based trading, in such diverse products as livestock, foreign currency, grain, shares and fish.

We distinguish furthermore a class, for which the term 'extra-organisational systems' has been coined. These systems