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OBJECTS IN PARADISE: OOPSLA PREVIEW

Conference-goers face a tough choice this week allocating their time among Stewart Alsop's Agenda 89, mingling with PC luminaries; the Conference on Computer-Supported Cooperative work (CSCW), research papers and a number of vendors there to learn; and Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), papers but also exhibits and keynotes by two commercial characters -- Ingres and Berkeley's Michael Stonebraker and Lotus and ON's Mitchell Kapor. OOPS is an approach to programming and design, and so it's natural that it already has tools -- mostly languages and lately a few databases. CSCW, by contrast, operates at a higher level, and as yet has garnered some one-off applications but few dedicated tools -- especially any of commercial mien. Object-oriented programming ultimately affects users too, but its reach extends from languages to tools, while CSCW extends from tools to applications -- one level nearer to end-users and real-world models. OOPS, of course, is an excellent approach for the development of CSCW applications.

Object-oriented programming is gaining widespread recognition for a number of reasons, starting with: (1) the emergence of standard object-oriented tools and languages for standard environments, including HyperCard/Talk and most notably (and arguably!) C++, which will have its own conference sponsored by UseNIX in October, with gurus Bill Joy and Bjarne Stroustrup; and (2) the rise of graphical user interfaces, which are painful to build without object-oriented tools and class libraries. Once you let people use objects to make dialogue boxes and menus, they start to wonder why they can't use them for everything else. The recent struggles of certain well-known companies to get their products out on time show the need for *some* new approach to overcome the growing complexity of multi-tasking environments with graphical user interfaces and multivendor machine interfaces. →

FORUM PLANS -- SEE PAGE 24

INSIDE

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funded by Xerox PARC). In due course it should be moved onto a UNIX platform (probably the SPARC architecture that Xerox has pledged to adopt), but still with LISP. Some day perhaps a commercial version written in a standard language (C++) will make its way to market. The closest thing we're aware of, but more ambitious, is the ON Technology development environment, the specs of which are still shrouded in mystery.

A fundamental principle behind both Lenses is "semi-structure," the delicate balance between structure and nonstructure -- or information whose structure is not yet apparent. Creating semi-structured messages was a first step, providing a powerful way for people to manipulate the explicit structures in their messages and a pragmatic way to handle the unstructured parts -- all the while encouraging them to move more and more information into defined fields or slots in a semi-structured message template. Now Object Lens is consolidating and advancing further into the unspecified, unstructured territory of the everyday world, helping people to discern and model its structures so that more routine work can be handled automatically.

InFlow: FIRST THE MODEL...

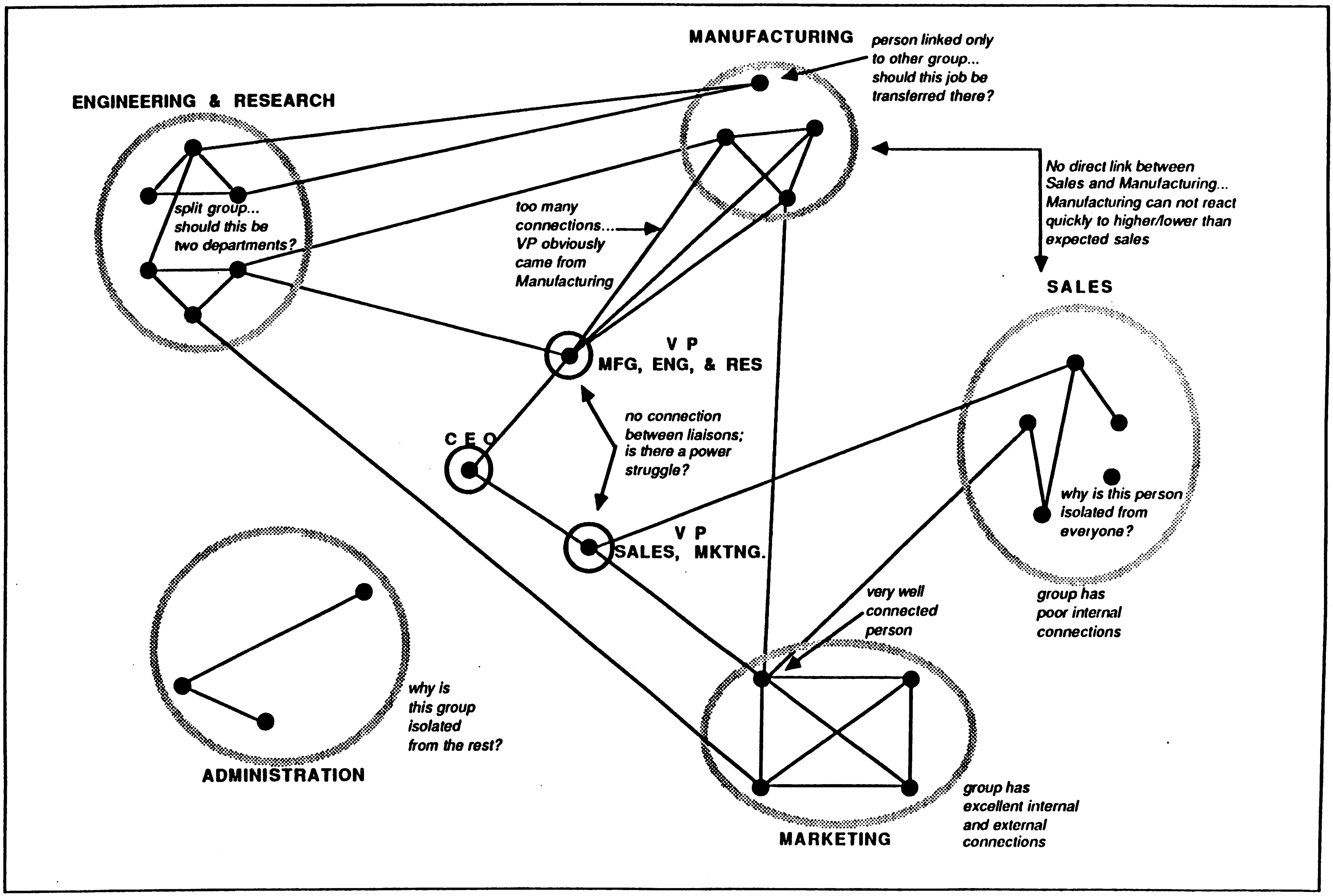
A reader writes: *"I agree [that] 'the better we understand group work and can make its activities explicit, the better we can model it on computers.' [Release 1.0, 88-6] ...we must do organization analysis along with systems analysis if we are to gain the expected payoffs from information technologies. Organization analysis includes looking at information flows & dependencies, policy & procedures, job design, coordination requirements, strategy & structure, employee skill base, etc. A technology-driven approach is not sufficient."*

The writer, Valdis Krebs, has led the implementation of a number of human resources computer systems at Toyota USA and TRW, and is now helping to start up Toyota's luxury car division, Lexus, in Torrance, CA. Krebs has developed an in-house Macintosh-based organization modeler, InFlow, that does some of the ground work he mentions above. (He wrote the tool as a two-for-one project for separate UCLA classes he was attending on Prolog and Organizational Dynamics.) It starts as a questionnaire that quizzes each group member (typically comprising multiple groups) about his relationships with other people in the organization: Who gives you information? How much, how accurate, how timely, how frequent, in what form? Whom do you give information to? Sometimes answers don't always match!

From this simple data set (limited only by disk size, typically tens or hundreds of people), InFlow draws not an org chart but an information-flow chart (a hypertext display with typed links), where the width and intensity of the lines from node to node indicate the qualities of a relationship. The system also has a notion of hierarchy, and can indicate relationships between individuals, or between workgroups. If there's slow communication between two groups, for example, the system can descend a level to show exactly who maintains the relationship between the groups: Perhaps it's too few people for the amount of information involved, or perhaps one person simply slows things up. Once you know these things, says Krebs, you're in a much better position to install group applications. You know where improvements could have the most impact, and you know what problems you're trying to solve. (The illustration across is not an actual screen shot, but indicates the kind of information InFlow can reveal.)

SAMPLE COMMUNICATION MAP

Showing Interactions In and Amongst Departments



person linked only to other group... should this job be transferred there?

No direct link between Sales and Manufacturing... Manufacturing can not react quickly to higher/lower than expected sales

split group... should this be two departments?

too many connections... VP obviously came from Manufacturing

no connection between liaisons; is there a power struggle?

why is this person isolated from everyone?

group has poor internal connections

very well connected person

why is this group isolated from the rest?

group has excellent internal and external connections