



If all of this confuses you, do not worry. It also greatly confuses the vendors who are the 'experts' in the technology. Certain of the acronyms really stand for the same thing. EDMS and TIM are EDM. PIM and EPD are PDM. I always group them under the term PDM. Not because it is semantically correct, but I need to give the generic technology some meaningful name, and do intend to invent yet another TLA.

Perhaps the members of the United Nations could fund a TAU, Technology Acronym Union, after they have finished sorting out their usual problems. Personally I doubt it as they probably realize how much more difficult it would be, especially as the French would have the same TLA's, but would of course want to spell them backwards, and the Germans would like to have FLA's (four letter acronyms)!

#### *Main Technologies - PDM, EDM, ERP and CSM*

For simplicity I split these four technologies into two groups, new product generation and product manufacture. However it is quite possible for some of these technologies to span both areas. In general though, PDM and EDM are about helping to create new products faster and at less cost. ERP and CSM are about efficiency in manufacturing products.

#### **Design – PDM and EDM**

According to the Computing Suppliers Federation Glossary of Terms, PDM stands for Product Data Management, and EDM is for Engineering Document Management.

The basic difference between the two is in the structure that is used to access the information. Most interfaces for PDM or EDM are not unlike the Windows File Manager to look at, with pieces of data collected into groups, like files in sub-directories, although the term 'branch' is normally used in place of directory.

#### *PDM*

PDM has the data for a product organized as a bill of materials hierarchy called a product structure. Thus the specific product, say a Rover 214 Sli car, is at the top level, and this breaks down into major modules, such as body, powertrain, electrics - and these major modules continue to break down until you arrive at basic components. This is a very natural interface for an engineer who is designing the battery tray and can immediately access the engine compartment and surrounding engine parts to check for fit and interference.

#### *EDM*

An EDM implementation shows common pieces of data collected together into folders. So using the car example, a folder would be 'starter motors'. Here all

the starter motors are collected, possibly grouped into folders by car type, small, medium or large. This may not be so useful for a mechanical engineer, but is useful for a purchaser who wants to see which motors have been used that are similar and at what cost and availability.

Similarly in the construction and process industries, some architects and engineers find that EDM approach of grouping items in a folder suits their needs better than PDM. EDM installations are more common than PDM installations, and vendors like Intergraph and Cimage have many installations in the chemical, process plant, transportation and utility industries.

The crux of the PDM or EDM choice is 'who is going to use it the most and for which applications?' A growing number of companies have opted to implement both PDM and EDM systems to cater for the needs of different departments.

PDM lends itself naturally to digital prototyping and configuration management, as the product structure is defined and can be frozen, or baselined, upon the release of that version of the design.

EDM is most useful for applications where recalling information of a generic type, or by keyword, is required, say in document distribution, purchasing or sales.

The good news is that many PDM and EDM systems have developed such a range of functionality that they can be both EDM and PDM systems at the same time - the type of interface that the system presents depending on who the user is and which application is being undertaken. Altris, Centra 2000 and Metaphase are examples of such joint PDM/EDM systems.

#### **Manufacture – CSM and ERP**

In Manufacturing, the difference between the two acronyms is more valid than in the Design area. CSM, Component Supplier Management, and ERP, Enterprise Resource Management, are different technologies, even though some may argue that CSM is a component of ERP.

Both technologies provide efficiency in the manufacturing process - CSM by preventing the production of equivalent components and ERP by planning out the process for a product based on the resources of the company and past experience.

#### *CSM*

CSM is a new technology that is about 25 years old. Confused? Well it started in the early seventies with computerized coding and classification of parts. This

was a great theoretical technology. It enabled engineers to see if they had already produced something very similar to what they currently needed. This was done by software asking a number of questions about the component, 'turned, punched or milled', 'material', 'length, height and width' etc. The software then generated a code of considerable length to describe the basic parameters of the part. Unfortunately this process was very cumbersome and did not appeal to the majority of rather conservative, 'if it ain't broke don't fix it', manufacturing companies.

A major drawback was the amount of effort to set up the system and input the legacy data of components that already existed. Even when CAD companies tried to incorporate this as an add-on in the eighties, it did not reach the required popularity.

With CSM each component is described just as in the old coding and classification systems. The difference is that each parameter in the database record for a component is readable, and not a string of numbers requiring the CIA's computing resources to decode it.

The other advantage is that the existing database of components already in a computerized inventory system, can be read into the CSM system automatically, cutting out the major cost deterrent of the old coding and classification systems. This is basically a technology that has come of age due to the low cost of computer storage and the usability and friendliness of the system.

Implementers, like Aspect and their recent acquisition, CADIS, tell horror stories of finding over 40 equivalent components across one major American group of companies. Of these something like half were provided by one supplier, who had a different price for each part number. This highlights the waste from being tempted to redesign a component rather than seek out an equivalent, because it is so fast and cheap to do on today's CAD systems.

The cost of duplicate components is in all of the downstream activities. The extra production engineering, manufacturing methods, stock to be ordered, administration of an additional part number, inventory cost of holding a minimum quantity and re-ordering when that is reached. Various surveys have put some frightening costs of many thousands of dollars per new part or many tens of thousands of dollars per new part against this, but let me just say it is 'significant' and avoidable.

#### *ERP*

ERP is what we all knew as MRP in the seventies and eighties. MRP started in the sixties as Manufacturing

Requirements Planning, and was a matter of providing a list of what you needed to order to manufacture a product. MRP later became MRP II, or Manufacturing Resource Planning, and was greatly promoted by IBM in the seventies, to the automotive and aerospace industries. MRP II added the concept of what resources were needed to manufacture a product in addition to the materials required.

Over the years more functions have been added as development became easier due to the use of commercially available relational database systems. These include financial planning and accounting modules, sales planning, capacity planning, product configuration etc. With all of the additional functions, the MRP vendors changed the name to Enterprise Resource Planning to reflect the much wider scope of the system within the enterprise.

Some vendors say that a system is not truly 'enterprise' unless it can cope with multi-site and multi-company planning and control. This addresses the increasingly common process of getting a significant portion of a product made 'outside'. For the acronym purists, the system must be in use and co-ordinated amongst the suppliers of the main manufacturer to be truly 'enterprise'. This becomes a very interesting challenge with many suppliers being located throughout the world, as in aerospace and automotive manufacture.

Some vendors claim that ERP is only the current state of the technology and, before long DEM, or Dynamic Enterprise Modeling, will be the technology of the day. Personally, I think that some companies need to get email first.

#### **In conclusion**

If you are still reading, and the aspirin has helped with the headache caused by all the TLA's, just remember - EDM and PDM are becoming the same thing and are the same as EDMS, EDaM, TIM and PIM. ERP is what we all knew as MRP, and CSM is a new technology that's 25 years old.

Easy isn't it?

#### **About the Author**

*Geoff Hall is a senior EIM consultant at Tachbrook Consulting and has been involved with implementing PDM, EDM, CAD and CAM for many years.*

*Geoff started with CAM 32 years ago and has lived with TLA's ever since.*

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# Java-Based Viewing — Benefits of the Next Evolution

*C.L. Murphy*

*Informative Graphics Corporation*

Java-based viewing – the technology of viewing and redlining drawings and images through a Web browser – offers users several advantages over the traditional “plot and courier” method of data exchange. Foremost among these are:

- The ability to streamline virtual supply chains;
- Expanded ease of internal access to information;
- Reduced error, and Improved time to market.

This article will briefly explore the various aspects of Java-based viewing, including an overview of the technology, the benefits to the supply chain and the potential improvement in internal communication.

## **Technological Aspects of Java-Based Viewing**

Developed by Sun Microsystems, Java is a dynamic application development language tailored for interoperability across several different platform types.

Electronic drawing and image viewing grew out of the desktop computer boom of the 1980s. By creating the ability for users to view and comment on drawings and images without requiring each person to have a CAD seat, costs were lowered and time to market was improved.

The combination of viewing and Java – in a Web environment – offers great potential to expand the benefits of traditional viewing even further, along the entire length of the supply chain.

With Java-based viewing, drawings and images are stored on a central server, which can be accessed by the involved parties using their Web browsers, such as Internet Explorer or Netscape Navigator. With more advanced variants on Java viewing and redlining, when a user opens a drawing, he or she views it via the browser; it is not downloaded to the desktop as a file. Users also have the ability to redline the images and review other users’ comments. Less advanced Java-viewing solutions transfer a DWG file to the desktop, then convert it via a Java applet. The benefit of more advanced Java-based viewing is that the core document remains on the central server, ensuring the most up-to-date document is the one being viewed and protecting the security of intellectual property.

A key benefit to Java-based viewing is its ease of administration. Java-based viewers reside on a server, rather than individual desktops. As a result, they are

installed one time, in one location. As obvious as it may sound, applications that reside on the desktop must be installed on the desktop. Someone has to physically go to each desk, load CDs or diskettes, run the setup utility and configure the application. This requires a lot of time on the part of IS personnel. Java-based viewers, however, since they reside on a server, take the time of one installation – not 100 or 1,000.

Another problem affecting desktop solutions is version compliance. If an update is released for an application, there is always a time curve in which some people deploy the update and others do not. There are obvious negatives associated with having part of your team on one software version and part on another. Data can be lost going from one version to another. Certain functionalities may not be interchangeable. Files can be corrupted, or a range of other problems can take place.

With Java-based viewers – administered from a central server – when an update is issued, everyone has the updated version immediately and transparently after the server install, with no conflict and very little effort.

When desktop applications are used in a team project environment, there is an inherent risk to the currency of data. Rather than saving comments and changes to the central data repository, users may save them on their desktops. As a result, the information is unavailable to the rest of the team, and the desktop houses large volumes of unnecessary data.

This does not happen with Java-based viewing. Since data are viewed through the browser, no actual files are transferred to the desktop. All information, from the core file to all of its comments and redlines, resides on the server. Users’ desktops don’t fill up with files they don’t need, and the most current information is available to anyone who needs it.

## **What about PDF?**

One question often asked about Java-based viewing over a network is, “What about PDF?” the ubiquitous Web-based document format published by Adobe.

While PDF is a good medium for static documents, it is not particularly well-suited for living pieces such as CAD drawings and images. First, the files must be converted to the PDF format, a process that can be moderately time-consuming for larger files. Second is the issue of redlining and annotation. If Web

annotation is part of the process, then, version 4.0 or higher of the Adobe Acrobat product must be installed on each desktop involved. Third, PDF files do not include ISO banner and/or watermarking information, which can be vital for ISO standards compliance. Finally, transferring the annotated files to all the people who need to see them can affect the quality of communication, in that everyone may get a different revision from everyone else involved in the project, and these then have to be collaborated. Advanced Java-based viewing and redlining operates without any of these complications.

### **Java-Based Viewing and the Supply Chain**

Although it is primarily of benefit to the rapid movement from prototype to full-scale production part of the process, Java-based viewing has the potential to impact the entire process. Assume, for example, XYZ Corp – an automotive company – purchases an inventor’s design patent to improve the differentials of front wheel drive cars. In order to make use of this design, the car company will have to contract co-design and production services from one of its part suppliers. Engineers from both companies will have to collaborate on applying the design to different model cars in the line. The supplier’s factory will have to prototype and test the differential, manufacture it and ship it to the XYZ storage facility. The storage facility will then need to get the piece to the factory on a Just-In-Time basis. When it arrives, the manufacturer will have to assemble it with other drive train components and ship out the finished product.

When you think how many eyes need to review all of these documents and drawings, it is amazing anything gets done using paper. By deploying Java-based viewing in the supply chain, there is no lag time, no need to worry about outdated versions or missed changes/notations. All the information is right there any time someone in any of the affected positions needs to look at them.

### **Benefits to Internal Communication**

In the corporate world, the Web browser has become a ubiquitous and vital tool. Employees can track information on competitors, conduct customer research, process orders, research technical issues and a range of other vital communication and business functions, all from their desk. Viewing on an intranet or the Internet is a natural extension of this broad access. Employees can review engineering drawings, specifications, reports and nearly any other project-related information in an environment as familiar to them as their own desktops.

The Web environment is a comfortable and familiar one to most people. This creates a shorter learning

curve for using the Java-based viewer, as the environment is already understood. This ease of use translates directly into other benefits as well. First, employees can access information more quickly than they can under the traditional method of requesting a plot, waiting for its delivery and then making comments by hand. They also interact with the latest and most current information, improving accuracy, reducing redundancy and increasing the sense of employee empowerment.

With the latest version of a drawing or image available for all necessary personnel inside and outside of the core operation, project status is readily apparent; cost alterations can be accurately estimated, and errors are reduced since all are “working off the same page.”

Another key benefit of Java-based viewing is the reduction of project costs. This benefit is realized in two ways. First, project time is saved in that the amount of time needed to send drawings, specifications and associated documents is eliminated. The documents are available all the time, with no shipping or lag time beyond opening the file.

Second, the “many eyes” concept, as it cuts down on the potential for error, cuts down on the potential to build scrap. At one point or another, nearly every manufacturing company has had to deal with the fact that a design or element change was not noted before going to production. When that happens, whether they built one-cent widgets or \$50,000,000 aircraft, they have nothing more than a paperweight when they are finished. By offering the ability for everyone involved to verify the process, and by checking each change in the order it was made, the potential to overlook changes is drastically reduced.

### **Conclusion**

By combining the technologies and uses of electronic drawing and image viewing, the World Wide Web and the Java language, companies may now be on the verge of the next evolution of design and production streamlining. The advent of Java-based viewing and redlining may ultimately prove to be as significant a process enhancement as electronic viewing was in the 1980s and early 1990s. Java-based viewing gives every indication of becoming a major component in the arena of expanded Supply Chain Collaboration.

### **About the Author**

*C.L. Murphy has spent ten years in various technology-related fields and has written on everything from hazardous waste disposal to telephony, process manufacturing and design visualization. He currently lives in Phoenix, AZ and can be reached at [murphy@infograph.com](mailto:murphy@infograph.com)*

## From the EDMNL archives

*The extra space made available by changing from a paper-based EDM Newsletter to an electronic one allows us to introduce a new section – ‘From the EDMNL Archives’. In this section we’ll republish some of the best articles that have appeared in the EDM Newsletter since publication started in October 1991. Many of these remain surprisingly topical, but have not been seen by the majority of today’s readers.*

*Where better to start than with the following article written for the December 1991 Newsletter by the late Steve Schopbach, one of the pioneers of EDM, and at that time CEO of Sherpa Corporation. The advice he gave in this article remains as useful in 2000 as it was in 1991. Many companies ignore it – to their cost.*

*The 1991 title of this article was*

### **Viewpoint: Successful implementation of EDM**

Let me extend my welcome to you as a reader of the new "EDM Newsletter". I am pleased to be on the Advisory Board with such a distinguished list of EDM industry experts. This is a young industry that is having, and promises to have, a tremendous, positive effect on improving a manufacturing company’s competitive position by reducing the time to market for new products; lowering manufacturing costs through improved efficiencies; and improving quality.

Most of the articles written about EDM or PIM are on the technical aspects of products. This is important, and in fact perhaps the "raison d’être" of this newsletter. However, in this article, I want to discuss some non-technical issues that we at Sherpa have found are common ingredients for a successful production site. I define productive sites as those involving real people, doing real work using the EDM system, and therefore receiving positive financial returns.

At a recent executive seminar I attended entitled "Key Manufacturing Strategies for the 90’s", quality and concurrent engineering were the two dominant themes. The questions and answers from the executives centered on the management side

of implementing these practices. In short, the issues were : "How do you get people to work together to implement these programs?" and, "How do you overcome employees’ resistance to change?"

At Sherpa, these issues are critical to us and our success, since we measure our success by the number of customers that achieve production status. We have learned much about the things that make a successful production site, and we will continue to learn and utilize this information for future product and service improvements. Even though each customer’s installation is unique, there are two common factors that, if present in a company, will almost always ensure success. If either of these factors is not present, there will be delays and the risk that the project will never achieve its promise. These two factors are management commitment and user involvement.

### **Management Commitment**

Since this term has been so overused, and, in some instances misused, I will explain my definition.

*Management needs to state explicitly what it wants.*

EDM is a product that affects many people in an organization and improves efficiency at the organizational level. Because it is used by many different people in an organization it should not be assumed that everyone automatically understands the overall goals and expected benefits of the EDM system.

If this assumption is made you may end up with disjointed views - like the three blind men who each touched a different part of an elephant with the result that each identified a different animal. To achieve a common view, management should ensure all employees understand why this project is being done and what it means to the organization. If EDM is being implemented to reduce the time to market for a product, then explain why this is important : what amount of reduction in time is being sought in terms of specific weeks or months. This "connects" the employees’ work to the goals of the organization.

Employees want to work on those things that are important to the company. Explaining why something is important, and what are the expected benefits for the company, is critical to the implementation team's success. We have a saying at Sherpa that points this out : *"If you don't know what you want, you can't have it!"*

*Management must support the team.*

The first element in support is to provide adequate staffing of full-time employees on the project. This stresses the importance of the EDM project and avoids conflicts of priorities. Another critical form of support is to expect the employees to be successful. Education studies consistently show that students will perform up to the teacher's expectations. Expecting someone, or a group, to be successful establishes the trust and confidence to get the individual, or the team, off on the right foot, and to keep them on track if they run into delays or obstacles.

*Management needs to be visionary, but implement their vision in "bite-size" chunks.*

The vision of the entire organization, (engineering, manufacturing, purchasing and suppliers) integrated electronically and integrated with the major electronic systems, (MRP II, project planning, manufacturing work instructions) operating seamlessly across vendor boundaries as well as geographic boundaries is powerful and attainable today. However, this vision should be broken into "bite-size" chunks that can be completed in less than a year, say four to six months. Getting an application such as design release management or engineering bill of material management into production in a short period of time provides a higher return on investment. Risk is reduced. Also, the project team builds confidence and success. Further, since the overall benefits of an EDM system are fully realized when it is deployed across the entire organization, getting one part of the organization successfully into production aids in building support for further deployment. Realizing that EDM or PIM deployment across an entire organization will take time, and patiently and persistently pursuing the vision in "bite-size" chunks, will get you to the goal line in less time, with less frustration and with less cost.

## **User Involvement**

A key question on the implementation path of any project is : "Will the users use it?"

Involving users at the beginning of the project reduces many risks at the start of the project when adjustments can be easily made. Waiting to the end of the project to re-do completed efforts adds delays and unnecessary costs. Seeking users involvement and input, and involving users, follows the key quality maxim, "Do it right the first time!"

Those that will actually be using the system, need to be involved in the design and testing of the system. Users will utilize the system if they are involved and if they see how the system will simplify their work. Users are also the best consultants available to tell how to simplify their work to increase efficiency. This seems simple. Yet, we continue to have customers where there are teams with too little user involvement. Perhaps this occurs because the product selection team, involved in specifying and making the recommendation for the EDM system, is fully capable of getting the prototype functional. As a result, its members do not see the need to involve users.

It is in the next step, the details of making EDM work within a production environment to meet the unique needs of users, that obstacles are discovered. Instead of moving forward from prototype to production, the team may spend weeks adding additional features - the proverbial bells and whistles. As weeks elapse, it becomes apparent that some of these "features" may not be needed, or, may even be counterproductive for the user. Had the users been involved from the beginning, direct feedback on the relevance of these items could have been determined up front.

Implementing an EDM or PIM system, as with most complex systems, introduces change to the organization. At Sherpa, we are rather pragmatic. We believe that people change when they benefit by the change. Ensuring that your company is providing the management commitment, and that the implementation team has the necessary people, company focus, time, and key users involved, will bring about success. •

## EDMS at Sears, Roebuck and Co.

Sears, Roebuck and Co. with headquarters in Hoffman Estates, IL, is a leading U.S. retailer of apparel, home and automotive products and services, with annual revenue of more than \$41 billion. The company serves families throughout the U.S. through 858 department stores, 2,100 specialized retail locations, and a variety of online offerings accessible through the company's Web site, [www.sears.com](http://www.sears.com).

Recently Sears, Roebuck needed to upgrade its document management system to manage hundreds of thousands of architectural drawings.

Sears Facilities Planning department turned to Dayton, Ohio-based Document Imaging Solutions, Inc. (DIS) to help them manage more than 123,000 existing facilities drawings, plus all those being generated on a weekly basis for new or remodeled stores and a variety of other smaller projects.

Sears Facilities Planning department includes three major areas - Planning, Construction, and Visual Presentation - responsible for virtually every facet of how a store looks.

DIS helped Sears Facilities Planning department categorize its drawings into six document types depending on the information they contain. A project team consisting of representatives from both DIS and Sears, designed, developed and implemented an EDMS incorporating the various document categories. For example, all of the documents created with floor plans are categorized as "Planning" documents. A workflow process designed to assist in the Planning change approval cycle was also implemented as part of this project.

### Sears EDMS Update

The software used to develop this document management and workflow application for Sears is Step2000 - developed by Universal Document Management Systems in Cincinnati, OH. The solution addressed several key company concerns: document tracking, accessibility, security and Y2K compliance.

"Sears system allows our 110 Step2000 users to properly track every drawing revision, and to more easily share the drawings with other departments because of the system's increased security," explained Pete Schultz, systems manager, Space/Facilities Planning, with Sears Information Technology department.

Thousands of documents were already being managed by an existing document management application that was outdated and lacked functionality.

"We implemented a document management system and a review workflow application for all of these drawings. Our first task was to automatically import these documents and related attributes into the new application with minimal user interaction," said Director of Technical Operations for DIS Nick Gagianas.

"All users have the ability to search for and view all document types. The DMS application also includes a security module that allows the administrators to select additional functionality for each user. The EDMS provides Sears with document revision control and the ability to store and manage all revisions of documents. The electronic workflow review of Planning document changes provides Sears with a tool to monitor and streamline the entire review cycle," added Gagianas.

The overall benefit is a streamlined process for approving, rejecting and discussing drawings through an electronic system. This replaces Sears previous process in which drawing reviews were dependent upon manual processes.

In addition to Step2000 software, several other technological components make up this document management and workflow solution. Communication of potential changes and modifications are frequently handled on-line through the integrated Myriad viewing software from Informative Graphics Corporation (Phoenix, AZ).

The technical side of the Step2000 implementation starts with an Informix database (version 7.24) on an IBM AIX (version 4.1.4) RS6000 server. The EDMS software runs on a Compaq Proliant NT server, and each of the end-user workstations is running the Windows NT Operating System. The network connects everything through a Transmission Control Protocol/Internet Protocol (TCP/IP).

### DIS

Document Imaging Solutions, Inc. is a privately held systems integration company focused on providing high quality, cost-effective Electronic Document Management System and Automated Workflow solutions, system solution components, related professional services, and scanning conversion services. More information about DIS is available at [www.disolutions.com](http://www.disolutions.com).

## Market News

### ACS Software, Inc. (Lomita, CA)

(+1 310/325-3055) <http://www.acssoftware.com>

ACS Software announced that it has released a new version of the AutoEDMS document management and workflow software. This r2 maintenance release of AutoEDMS Version 6 includes a new data import wizard for converting Excel-based document data into AutoEDMS. AutoEDMS' viewing technology has been enhanced with additional support for AutoCAD 2000, MicroStation, Acrobat PDF and the latest Microsoft Office file formats. A new version of the AutoEDMS Redline Module is also included on the r2 CD. This release of AutoEDMS has been improved with new administrative and automated setup functions. AutoEDMS' API has also been enhanced with additional commands and capabilities. With the r2 release, ACS has also included an 'AutoEDMS Developer's Kit' that provides more extensive customization of the AutoEDMS Workflow Engine.

### Agile Software (San Jose, CA)

(+1 408/975-3900) <http://www.agilesoft.com>

Agile Software Corporation announced a new hosting service for the company's Agile Anywhere suite of product content management applications. Agile has expanded the range of available Application Service Provider (ASP) delivery models to match customer needs.

- Smaller manufacturing firms who want to outsource most, if not all, of their IT requirements, and are looking for a broad range of tightly integrated applications and extensive consulting and support services, may choose to have their Agile Anywhere applications hosted at one of the full-service ASPs, such as AristaSoft, Applicast, Corio, etc.
- Manufacturing firms who want to outsource only their ERP systems and collaborative manufacturing applications, such as Agile Anywhere, that are tightly integrated with these ERP systems, may choose to have their Agile Anywhere applications hosted by one of the ERP-specific hosting providers, such as Oracle Business Online, with which Agile has partnered.
- Manufacturing firms who want to outsource just their Agile Anywhere application suite may opt to have Agile host their Agile Anywhere installation for them.

Agile Software Corporation announced a strategic partnership with SupplierMarket.com, the leading

Internet marketplace for the buying and selling of custom manufactured products. Under the terms of the partnership, Agile and SupplierMarket.com will link MyAgile.com to SupplierMarket.com's online marketplace. Agile Buyer, a business-to-business sourcing and procurement solution, lets users quote and order standard electronic components in Internet time.

The agreement with SupplierMarket.com enables MyAgile.com users to post product specifications for custom components in an Internet-based request for quote (RFQ). Manufacturers will be able to use Agile to build their Bill of Materials and Approved Vendor Lists, and submit an RFQ to the SupplierMarket.com marketplace, using XML-based data exchange. The two companies will collaborate to define the format of the data exchange, leveraging the Agile-supported XML-based Product Data eXchange (PDX) standard and the Open Application Group, Inc.'s defined standard for RFQs in XML.

Agile Software Corporation announced the release of Agile Buyer 5.0, the direct materials e-procurement solution that Agile added to its product portfolio when it acquired Digital Market, Inc., in November 1999. This release of Agile Buyer includes:

- Support for Larger Environments. Agile Buyer systems can now be distributed across multiple web servers with automatic load balancing to support multiple manufacturing sites, hundreds of buyers, and thousands of potential suppliers.
- More Customizable. Agile Buyer administrators can fine tune new capabilities and information access based on user roles.
- More Visibility Across the Supply Chain. Additional information is now available to buyers through expanded reports and analytics, information on alternate parts and components, contracts, and historical pricing.

Agile Software Corporation announced total revenues for the third quarter of fiscal 2000 increased to \$8.56 million compared to total revenues of \$4.59 million for the same period in fiscal 1999, representing an increase of 86.5%. For the nine months ended January 31, 2000, total revenues were \$21.39 million, compared to total revenues of \$11.65 million for the nine months ended January 31, 1999, an increase of 83.6%.

Agile Software Corporation announced a partnership with PartMiner, Inc., a leading business-to-business

marketplace for the electronic components industry. As part of this agreement, PartMiner will be linked to Agile's Internet-based Agile Buyer and Agile Anywhere products through open Internet XML standards. Agile customers will gain access to CAPSxpert, PartMiner's database of millions of electronic components. CAPSxpert features both descriptions and technical data sheets of semiconductors, passive and active components, interconnect devices, and discontinued components.

**AIM Systems GmbH (Karlsfeld, Germany)**  
 (+49 8131/59600) <http://www.aimsystems.de>

AIM Systems GmbH announced that the thermal power station division of ABB ALSTOM POWER AG is using its COMPASS TDM Oracle system. In a first step 50 workstations have been equipped.

**Altris Software, Inc. (San Diego, CA)**  
 (+1 619/625-3000) <http://www.altris.com>

*Altris Software, Inc.* announced that, subject to approval by Altris shareholders, Spescom Ltd., a South African company, has agreed to provide additional working capital to Altris and to convert \$6.0 million of debt and redeemable preferred stock plus related accrued interest and dividends into Altris Common Stock.

Also as part of the transaction, Altris will acquire all the rights to Spescom's EMS 2000 software, a configuration management product that is currently being integrated with Altris' flagship eB product. Altris has also agreed to transfer its remaining 40% share of Altris Software Ltd. to Spescom. After the transaction, Spescom will own approximately 66% of the Company's outstanding Common Stock.

*Altris Software Ltd* announced that Railtrack has selected an Altris Configuration Management system to manage engineering modeling information for its West Coast Route Modernization Program. Railtrack manages the UK rail network, providing access to the network, managing the allocation of train paths, planning and co-ordinating train movements. The Altris CM software is being used to manage the configuration of engineering modeling information related to the design and implementation of the West Coast Route Modernization Program including safety, dependability, and performance modeling.

The Altris CM software provides Railtrack with the ability to identify the implications of changing any part of this information ahead of making the changes.

*Altris Software, Inc.* reported results of operations for its fourth quarter and year ended December 31, 1999. Total revenues for the quarter were \$1.7 million

compared to \$3.1 million for the quarter ended December 31, 1998. Total revenues for the year ended December 31, 1999 were \$7.1 million compared to \$12.8 million for the year ended December 31, 1998.

**Aspect Development, Inc., (Mountain View, CA)**  
 (+1 303/402-2970) <http://www.aspectdv.com>

IBM and *Aspect Development* announced a global relationship that will enable customers to more rapidly apply Aspect's eBusiness solutions for managing inbound supply and eCommerce. Deploying Aspect systems as part of its integrated product development and e-procurement strategies, IBM has saved more than \$500million in the last three years.

Under the agreement, the companies will jointly market and sell inbound supply chain solutions using Aspect's eXplore-based eDesign, eSource and eOperate suites through their global direct sales forces, beginning initially in North America and Europe. The automotive, electronics, industrial, aerospace/defense, chemical/petroleum, consumer-packaged goods and healthcare industries will be the initial segments IBM and Aspect will focus on.

*Aspect Development, Inc.* announced that it had signed a definitive agreement to acquire TACTech, Inc., a leading content provider for component life cycle data to over 100 military and industrial customers worldwide. Under the terms of the transaction, TACTech shareholders will receive Aspect stock worth about \$15 million. Aspect will continue the development of TACTech content products and decision support tools in Yorba Linda, integrating them into Aspect's B-to-B eCommerce decision support solutions for inbound supply.

*Aspect Development, Inc.* announced results for the fourth quarter and fiscal year ended December 31, 1999. The company reported record fourth quarter pro forma revenues of \$33,510,000 - a 29% increase over the prior quarter. Aspect reported record 1999 pro forma revenues of \$95,041,000, up from \$86,365,000 in 1998. Pro forma net income for the year totaled \$8,960,000 contrasted with \$16,025,000 in 1998.

*Aspect Development, Inc.* and Commerce One, Inc. announced a letter of intent to partner to conduct joint marketing and sales of the two companies' solutions. Commerce One will resell Aspect's content management software and content services.

The companies have also agreed to collaborate on Aspect's Standard Classification Scheme as a basis for defining a standard product definition language for B2B eCommerce and trading.

*Aspect Development, Inc.* announced Aspect's eMarket solutions which extend traditional eCommerce transaction automation capabilities by providing decision support and content management solutions for collaborative commerce inside business enterprises and among trading partners in B2B eCommerce exchanges.

i2 Technologies, Inc. and *Aspect Development, Inc.* signed an agreement that Aspect Development will be a preferred content provider for i2's TradeMatrix marketplace. TradeMatrix is a dynamic Internet marketplace, powered by i2's intelligent eBusiness solutions, that provides a one-stop destination for online collaboration and dynamic trading, electronic procurement, spot buying, selling, order fulfillment, logistics services and product design services.

*Aspect Development, Inc.* announced a new B2B content publishing and management platform, the Aspect Content Network, designed to support the content publishing and subscription needs of Business-to-Business exchanges and portals that connect many buyers with many suppliers, as well as meet the needs of an enterprise eProcurement implementation.

#### **Baan Company (Herndon, VA)**

**<http://www.baan.com>**

Baan Company announced Baan E-Configuration version 2.2, the latest evolution of its product and service configuration solution and a key component of Baan Company's E-CRM strategy. Baan E-Configuration provides an optimized selling environment on the Web for complex products, services, pricing models and channels. It aims to ensure that customers and suppliers select, configure, and price complete and correct products and services while minimizing incorrect orders and protecting customer and supplier relationships.

#### **CoCreate Software Inc., (Fort Collins, CO)**

**(+1 970/206-8000) <http://www.cocreate.com>**

*CoCreate Software Inc.* named Mike deFisser as vice president and director of Worldwide Sales and Field Operations and Bob Alfieri as vice president and director of U.S. Sales and Field Operations.

Prior to his new assignment, deFisser was responsible for North American sales of CoCreate products and services. Prior to joining CoCreate, deFisser was instrumental in building the HP OpenView software sales organization and held key sales-management positions with the organization.

Alfieri was previously responsible for CoCreate's eastern sales organization. Prior to joining CoCreate, Alfieri held numerous sales-management positions with SDRC Corp.

*CoCreate Software Inc.* and Perot Systems Corporation announced that Perot Systems will serve as an Application Service Provider for CoCreate's innovative OneSpace solution.

#### **Cyco (Rijswijk, The Netherlands)**

**(+31 70/395-4179) <http://www.cyco.com>**

*Cyco Software* announced that it is releasing new versions of both AutoManager WorkFlow and AutoManager View - AutoManager WorkFlow 6.11 and Auto Manager View 3.11.

The maintenance release of AutoManager WorkFlow 6.11 has incorporated integrated support for AutoCAD Mechanical 2000 Power Pack, Mechanical Desktop 4, AutoCAD LT 2000 and GTX RasterCAD 6.0. The latest version of Cyco's Auto Manager View 3.11 has also been upgraded to support these products. In addition, both products now offer the user the choice to use the licensed Autodesk Object DBX technology for accurate 3D viewing or Cyco's native fast 2D viewing for AutoCAD 2000 DWG. Overall viewer improvements include viewing of clipped Xrefs, better spline viewing, upgraded handling of large raster files and viewing of non-rectangular view ports.

*Cyco Software* announced that they received a multi-million Euro second round investment, following a first round early last year from three European venture capitalists. The financing will support Cyco's worldwide launch of AutoManager Meridian, a new document management system designed for the engineering and design environment. Man and Machine Software AG, the largest AutoCAD distributor in Europe, entered as a new investor in the second round and made a 5% investment in Cyco Holding. In the first half of 2000 Cyco will be launching its latest product, AutoManager Meridian.

#### **Dassault Systemes S.A. (Suresnes, France)**

**(+33 1 40994099) <http://www.dsweb.com>**

*Dassault Systemes* announced that the Boeing Company released the following information on January 7, 2000. 'The Boeing Company has selected the CATIA and ENOVIA software products from Dassault Systemes and IBM as the core of the first set of engineering computing standards that spans all Boeing business units and all sites. They will be used on all future product development programs throughout Boeing and on current programs where their use makes business sense.'

*Dassault Systemes* announced total revenue increased 17.7% to FF 967.8 million (Euro 147.5 million) in the 1999 fourth quarter. For the year ended December 31, 1999, total revenue increased 22.1% to FF 3,310.4 million (Euro 504.7 million). During the year, Smart

Solutions added over 450 new customers. Enovia made an important advance with the commercial introduction of Enovia Portfolio.

**Documentum Inc. (Pleasanton, CA)**

(+1 510/463-6800) <http://www.documentum.com>

Documentum, Inc. announced revenues for the fourth quarter of 1999 were a record \$41.0 million, a 12.6 percent increase over the same period of 1998. Net income for the fourth quarter of 1999 was \$0.2 million, a 95.2 percent decrease compared with the fourth quarter ended December 31, 1998.

**Eigner + Partner AG (Karlsruhe, Germany)**

(+49 721/62910) <http://www.ep-ag.com>

EIGNER + PARTNER announced its New Generation products offering a wide range of new features including a workflow that is fully integrated into the data model, a federated repository, CORBA/DCO compatibility, and multiple language support for both the user interface and metadata. Additionally, many different portals ensure easy web access.

EIGNER + PARTNER announced that Engineering Animation Inc. and EIGNER + PARTNER will collaborate closely in the future development of their software solutions. The aim of the co-operation is to integrate components from EAI into EIGNER + PARTNER's PDM solutions to provide efficient visualization of product data.

EIGNER + PARTNER announced that the collaboration started in the last fiscal year with MICROBOX DR. WELP GmbH has resulted in the signing of a co-operation agreement. The co-operation will provide companies, such as those involved in machinery, heavy equipment, utilities and chemical/pharmaceutical industries, with a single co-ordinated package for the development, release, organization and long term security of products.

**Filenet Corp. (Costa Mesa, CA)**

(+1 714/850-5851) <http://www.filenet.com>

FileNET Corporation reported final financial results for the fourth quarter and year ended December 31, 1999. FileNET reported record revenue of \$94.1 million for the quarter, up 11 percent from the fourth quarter of 1998. For the year ended December 31, 1999, revenue was \$347.1 million, up 12 percent from the year ended December 31, 1998. Net income for 1999, the highest in the company's history, was \$19.7 million compared to 1998 net income after restructuring costs of \$1.0 million.

**Framework Technologies Corp. (Burlington, MA)**

(+1 781/270-6554) <http://www.frametech.com>

Framework Technologies Corporation and Perceptual Robotics, Inc. announced an integration plan designed to help businesses achieve faster project turnaround through enhanced visual communication. Framework Technologies ActiveProject now offers easy integration with Perceptual Robotics' Telepresence technology to power on-site Web cameras, providing project teams with the ability to see and discuss schedule-threatening issues from anywhere in the world via a Web browser.

Once a Web camera powered by Perceptual Robotics' Telepresence technology is in place, the camera's video feed can be added to an ActiveProject extranet. Multiple project team members can then log into a secure project extranet to simultaneously view and control the movement of the Web camera, zooming in on issues and enabling faster resolution while reducing travel time and costs.

Framework Technologies released ActiveProject v2000/E, an enterprise-scalable version of its industry-leading project communication software. ActiveProject v2000/E is a Web-based software solution that enables corporations to set up their own project extranets for sharing information with an extended team of suppliers, subcontractors and internal constituents.

**Green Pasture Software (Corvallis, OR)**

<http://www.greenpasture.com>

Green Pasture Software announced GPS W/EDGE 2000, a new version of its internet-based GPS W/EDGE document management software. GPS W/EDGE features the ability to manage technical documents like CAD files created with AutoCAD or MicroStation. GPS W/EDGE also features tools that help companies track document versions and revisions efficiently. GPS designed its GPS W/EDGE 2000 software to run on top of FileNET's Panagon 2000 integrated document management system.

Green Pasture Software announced that AT&T has selected its internet-based GPS W/EDGE software and FileNET's Panagon integrated document management system to give its business partners and suppliers access to its geographically dispersed engineering and site-management documents. AT&T gave this order to GPS after a 10-month development and test program. AT&T's subcontractors, suppliers, distributors and customers can access all GPS W/EDGE features through a web browser and check out large, complex design documents and equipment-location files as needed.

**Informative Graphics Corp. (Phoenix, AZ)**

(+1 602/971-6061) <http://www.infograph.com>

Informative Graphics Corp. announced the release of inViso - a versatile native CAD drawing and image

visualization application / ActiveX component for Windows and NT. InViso is powered by the same viewing technology available in MYRIAD, but offers an ActiveX interface and a reduced function set at a significantly lower price. Informative Graphics has targeted a low cost "view and print" version of the software for specific market niches requiring a very simple to use viewer such as:

- Shop Floor and similar applications where a very basic user interface (seven buttons) is required and low software cost (\$49/per seat) is a factor.
- Intranet Deployment for companies seeking a basic in-line HTML/MIME associated viewer that have standardized on IE for their Corporate Intranet. Since inViso/X is a true ActiveX component, it doesn't have the overhead associated with ActiveX enabled "fat" applications.
- CD ROM publishers (like scanning and drafting service bureaus) that put drawing content on CDs and seek to include a very low cost (per CD) viewer. The cost per CD for inViso can be as low as \$1/seat for CD volumes in excess of 1,000.
- Application Embedding by Solution Partners, VARs and System Integrators to take advantage of the OCX API interface in inViso/X to create embedded visualization within their Visual Basic, Delphi or Visual C++ applications.

*Informative Graphics Corp.* announced an agreement with Pointillism, Inc. - providers of the uExpedite Engineering Change Order (ECO) solution. Using Brava!, approved members of the ECO team will be able to view and add comments to project-related documents and drawings using any standard Web browser. With uExpedite, customers, vendors, suppliers and partners can all contribute to design changes, accelerating approvals and reducing rework. uExpedite users can create, route, track and archive ECO's easily with simply a Web browser and email. uExpedite is a 100 percent Web-enabled ECO solution that requires no software installation on the end-user's desktop and utilizes a familiar email-style interface.

*Informative Graphics Corporation* announced the French and German language release of MYRIAD in addition to existing MYRIAD localizations in English and Japanese (Kanji).

*Informative Graphics Corp.* announced that Collaborative Structures has agreed to incorporate Brava! Java-based viewing and collaboration software to empower viewing, redlining and collaboration in

conjunction with its FirstLine product. Collaborative Structures, Inc. is a provider of Internet-based communications solutions facilitating collaboration among project management teams in the A/E/C industries. FirstLine is a central, shared database enabling project members to share and manage all types of project information.

#### **Inso Corporation (Boston, MA)**

(+1 617/753-6500) <http://www.inso.com>

Inso Corporation announced that preliminary fiscal fourth quarter revenues from continuing operations are expected to be approximately \$11-12 million. Revenues for the Company's eBusiness Technologies (eBT) division are expected to be approximately \$4.0 - 4.5 million, while revenues from the Company's Information Exchange (IED) division are expected to be approximately \$7.0 - 7.5 million. In addition, the Company announced that it has retained Morgan Stanley Dean Witter to explore strategic alternatives, including the potential sale of the Company.

#### **Intergraph Corporation (Huntsville, AL)**

(+1 256/730-3707) <http://www.intergraph.com>

*Intergraph Corporation* reported operating results for its fourth quarter and year ended December 31, 1999. For the quarter, the Company incurred a loss from operations of \$4.3 million on revenues of \$224.4 million. For the year, the Company incurred a net loss of \$71.6 million on revenues of \$938.6 million. By comparison, in 1998 the Company incurred a net loss of \$19.6 million on revenues of \$1.033 billion.

*Intergraph Corporation* and SAP AG announced they signed a memorandum of understanding for joint development to integrate mySAP.com solutions with Intergraph's integrated life cycle engineering solutions. Joint efforts are aimed at integrating the business and engineering environments, and bridging the companies' distinct data models and databases.

For SAP and Intergraph, the effort is expected to result in joint penetration into the marine and process industries and increases in software sales to current and future joint customers. Initial joint work will be performed in two areas: a charter project and an integration project. The charter project involves Intergraph and SAP working together with a mutual customer to combine business and engineering workflows. The integration project consists of integrating SAP software with Intergraph software for shipbuilding, GSCAD (Global Shipbuilding Computer Aided Design).

#### **Interleaf, Inc., (Waltham, MA)**

(+1 617/290-0710) <http://www.interleaf.com>

*Interleaf, Inc.* announced that it has entered into a definitive agreement providing for the acquisition of Interleaf by BroadVision, the leader in personalized e-business applications.

Key to the acquisition is the e-Content Company, a division of Interleaf and leader in XML-based content management tools. This separate Interleaf business unit is dedicated to the development, marketing and sale of XML-based content management tools which enable the design, creation and management of dynamic and intelligent content for web and wireless applications. The e-Content Company comprises nearly 70 percent of Interleaf's approximately 400 employees and has been the most significant area of growth and investment within Interleaf over the past two years.

*Interleaf, Inc.* announced third quarter results. The Company reported revenue of \$12.5 million for the third quarter of fiscal year 2000, ended December 31, 1999, an 8% increase in revenue from the same period last year. Net loss for the third quarter was \$4.0 million. The increase in revenue was mainly driven by e-content sales of BladeRunner products and services, which grew 83% to \$5.1 million in Q3FY00 from \$2.8 million in Q2FY00, constituting 41% of the total revenue for this quarter.

**MatrixOne, Inc., (Chelmsford, MA)**  
(+1 978/454-0444) <http://www.matrix-one.com>

*MatrixOne, Inc.* announced a \$1.1 million contract to deliver its eMatrix business collaboration solution to Smith & Nephew, Inc., a leading orthopaedic devices supplier. The eMatrix solution is designed to help Smith & Nephew's Memphis-based orthopaedic business unit optimize production of fracture-healing and joint-replacement devices by streamlining processes for product development and manufacturing, as well as uniting global operations. The first phase of the eMatrix implementation encompasses product life cycle change and document management. In the second phase, the orthopaedic business unit intends to apply the eMatrix solution to further automate and streamline business processes and unify global operation processes and information access via the Web and federated databases.

*MatrixOne, Inc.* announced that Munich-based Krauss-Maffei Kunststofftechnik GmbH, a leading producer of plastics machinery and a subsidiary of Mannesmann Demag Krauss-Maffei AG, has awarded MatrixOne software and service contracts for its eMatrix business Internet collaboration software.

The eMatrix solution uses MatrixOne's patent-pending Adaplet technology for transparent access to existing information to enable collaboration across the product

lifecycle. Krauss-Maffei will use this capability to integrate a wide array of legacy data, applications and processes, including mechanical CAD data, hydraulics and electrical drawings (ELCAD).

*MatrixOne, Inc.* announced that BREED Technologies, Inc., one of the top three occupant safety system suppliers in the world, has begun the first phase of its implementation of the eMatrix solution. This implementation is part of an ongoing project that will deliver common processes and practices via the Internet across BREED's globally dispersed design and manufacturing centers. Through the eMatrix solution, BREED will introduce the benefits of e-business to its customers, partners and suppliers.

*MatrixOne, Inc.* announced that Fokker Aerostructures B.V. and Fokker Special Products B.V. awarded MatrixOne a software and services contract and completed first phase deployment of the eMatrix solution. The primary focus of this first phase included the replacement of three Y2K non-compliant mainframe legacy systems with eMatrix applications for change management, engineering bills of material management and CAD model release management. Phase one included the launching of CATIA CAD/CAM models and deployment of the eMatrix system among 250 users at Fokker facilities in Papendrecht, Schiphol and Hoogeveen in The Netherlands. Subsequent phases are expected to include eMatrix Integrations to Baan ERP system and CATIA and CADDs CAD/CAM systems.

**Maxim I/T (West Lafayette, IN)**  
(+1 765/463-4710) [www.maxim-IT.com](http://www.maxim-IT.com)

Maxim I/T Inc. announced Find?View V1.3, its data rich search engine for the Intranet. Find?View allows companies to access a rich array of engineering and manufacturing data from various CAD applications, databases, ERP, PDM and legacy systems simply and easily within seconds via a web browser. Find?View V1.3 includes full text search support for vector drawings. Users now have the ability to search for text, notes, title block information etc. directly from within a drawing.

**Motiva Software Corp., (San Diego, CA)**  
(+1 619/481-4822) <http://www.motiva.com>

*Motiva Corporation* announced that it has secured \$13 million in equity financing, with the lead investment coming from Global Retail Partners.

As part of this \$13 million round, Motiva received continuing support from existing venture capital investors Innocal, Bay Partners and NewTek, and Motiva's strategic partner, Autodesk.

*Motiva* announced that it has named Michael R. Haviken as chief operating officer. Haviken will lead the sales, marketing, customer satisfaction, and strategic partner relationship efforts surrounding *Motiva eChange Solutions*.

**NexPrise, Inc., (Santa, Clara, CA)**  
**(+1 408/327-0330) <http://www.nexprise.com>**

*NexPrise, Inc.* announced that *Cadence Design Systems, Inc.* is using *NexPrise's ipTeam* software in its Design Services organization to increase the efficiency of its globally distributed product development teams. *Cadence* completed a critical design program utilizing *ipTeam* to manage concurrent engineering activities among globally distributed team members.

Using *ipTeam*, the Information Appliance Design Group within *Cadence Design Services* has created a secure extranet to manage and facilitate collaboration among 23 design team members located at *Cadence* facilities in Santa Clara, CA, Portland, OR and Cape Cod, MA, as well as at other locations around the world. The group develops custom embedded systems for products such as wireless-enabled mobile media devices and point-of-sale devices, handheld computing devices, Web and Internet phones, and smart car electronics.

**Océ (Venlo, The Netherlands)**  
**(+1 312/714-8500) <http://www.oce.com>**

*Oce NV* announced that its 1999 net income from ordinary activities - that is before deduction of exceptional items - amounted to 132 million Euro, an increase of 2% compared to 1998. Total revenues increased by 3% to 2,838 million Euro. Autonomous growth amounted to 1%. Acquisitions and exchange rate effects each had a positive influence of 1% on total revenues. Digital machines and the related revenues from software and service meanwhile represent 60% of total machines and service revenues (1998: 57%).

*Oce* announced it has chosen Microsoft's Windows NT as the software platform for the embedded controller of the new *Oce 9600 Wide Format Printing System*. The use of Windows NT technology will enable *Oce* to offer end-users significant benefits through the use of a standardized, PC-based multi-tasking platform with optimum ease of system integration and network connectivity.

*Oce* and *Siemens* signed a binding memorandum for the acquisition by *Oce* of *Computer Gesellschaft Konstanz mbH (CGK)*. The company has around 300 employees. Last year this business achieved a turnover of some DM 75 million. *CGK* is active worldwide in the area of digital character and document recognition

and high speed image scanners and is largely important for *Oce* for the further expansion of document management systems.

**Open Text Corporation (Waterloo, ON)**  
**(+1 519/888-7111) <http://www.opentext.com>**

*Open Text Corporation* announced the appointment of Stanley B. Stern as a member of its board of directors.

*Open Text Corporation* announced results for its second quarter ended December 31, 1999. Revenues for the quarter were \$26.7 million, an increase of 28% over the same quarter last year. Second quarter net income was \$15.6 million or \$0.61 per share (fully diluted) compared to net loss of (\$0.02) per share in the second quarter last year. Excluding one time gains, depreciation & amortization and restructuring charges, the Company incurred an operating loss of \$4.9 million or \$0.19 per share (fully diluted).

**Parametric Technology Corp. (Waltham, MA)**  
**(+1 781/398-5000) <http://www.ptc.com>**

*Parametric Technology Corporation* announced that *InPart Mechanical*, the world's largest 3D CAD library, now exceeds one million parts. With its release of 187,515 parts on January 21, 2000, *InPart* has published CAD geometry for 1,014,535 standard components with 20,290,000 supporting technical specifications. To date, *InPart Mechanical* has delivered 26,013 CAD models over the Internet to design engineers.

*Parametric Technology Corporation* reported revenue totaling \$239.0 million for the first quarter ended January 1, 2000, compared to \$250.1 million for the same period last year. Pro forma net income for the quarter was \$17.6 million compared to \$44.9 million for the year-ago period.

Total *Windchill* revenue (license and services combined) for the quarter of \$38.3 million showed more than a 700% increase over the same quarter a year ago. Total *Windchill* revenue over the past four quarters exceeded \$115 million, and there are now more than 400 *Windchill* customers worldwide. In Q1 *PTC* received significant orders for *Windchill* products from *Siemens*, *Boeing*, *GKN Automotive*, *ITT Aerospace* and *E.I. Dupont*.

*PTC* announced that *Power Generation Group* of *Siemens, AG* has adopted *PTC's* new collaborative product commerce solutions (CPC) strategy. CPC enables manufacturing companies to use the Web to collapse the time and distance associated with collaborating in a global network of suppliers and customers on the development of new products. *Power Generation Group* of *Siemens* uses *PTC's* CPC

solutions including Pro/ENGINEER and is deploying over 3,500 licenses of PTC's Windchill.

PTC announced its new corporate strategy which reinforces itself as a B2B solutions provider. PTC provides a comprehensive suite of e-business collaborative product commerce (CPC) solutions designed to support the complex, diverse, and changing information management needs of world-class manufacturers. PTC's software solutions are complemented by the strength and experience of its newly announced PTC Global Services, which provides a global network of premier consultants and system integrators, along with educational, support, and e-business services to customers worldwide. PTC's CPC solutions address the specific needs of customers by using the appropriate mix of Web-based collaboration and flexible engineering capabilities offered through Windchill and the PTC i-Series, respectively. CPC links together customers, suppliers, and partners across a global supply chain to facilitate product collaboration, innovation, and increased product competitiveness. To reflect the new solutions strategy, the company has introduced a new corporate identity, based on the PTC acronym.

#### **PROCAD GmbH (Karlsruhe, Germany)**

(+49 721/9656-624) <http://www.procad.de>

PROCAD GmbH announced that Siemens Duewag Schienenfahrzeuge GmbH, a subsidiary of the Transportation Systems Group (VT) of Siemens AG in Krefeld (Germany) has selected PRO\*FILE for the management of Pro/ENGINEER models and drawings. Siemens Duewag in Krefeld is a supplier of electrical equipment for trains. PROCAD also received orders to install PRO\*FILE PDM systems from Knaus Caravan (Bavaria, Germany) and ALCOA Packaging Machinery (Englewood, CO). Lurgi Oil Gas in Frankfurt expanded its PRO\*FILE installation to two additional subsidiaries in Chemnitz (Germany) and Krakow (Poland). EnBW Energievertriebsgesellschaft mbH, one of the three biggest utilities companies in Germany equipped its Customer Care Center with a document management solution based on PRO\*FILE.

#### **Quillion**

<http://www.quillion.com>

Quillion announced that Borealis, the European chemical company with Headquarters in Denmark and offices throughout Europe and Scandinavia, have just signed a substantial contract with Quillion worth over one million dollars for the provision of software and related services. Over the next two years, Quillion will implement asset information management solutions at all of their sites to manage all plant-related documents and data. Quillion DataManage and Quillion StructureManager for Documentum will be

implemented over the duration of the contract. This will enable Borealis to migrate existing documents and data into an electronic plant management system to support plant optimization.

#### **SAP AG (Walldorf, Germany)**

<http://www.sap-ag.de>

SAP AG announced the availability of SAP Product Lifecycle Management (SAP PLM), an integrated business application within mySAP.com for managing the complete product life cycle of the extended supply chain, from design and production through sales and maintenance. SAP PLM is delivered through the mySAP.com Workplace, a personalized desktop portal that provides employees with single-screen access to all the functionality they need to perform their roles. The solution makes all product-, process- and project-related data available to users via Web-based access that is tailored to more than 20 different roles, including product design engineer, project manager, collaborative engineering user, supply chain manager and knowledge engineer. SAP PLM is an integral part of mySAP.com that includes and builds on the capabilities of the SAP PDM application, in use by more than 450 customers worldwide.

#### **SDRC (Cincinnati, OH)**

(+1 513/576-2400) <http://www.sdrc.com>

SDRC announced that DENSO Corporation (Kariya City, Japan), the world's fourth-largest automotive supplier, has chosen SDRC's Metaphase software and related services for implementation in the DENSO Engineering Core Computing System (DECCS). DENSO has provided SDRC with a letter of intent forecasting a multi-million dollar investment in Metaphase over the next 3 years. Initial orders have been received from DENSO via NK-EXA Corporation, an SDRC authorized distributor in Japan. DENSO will use Metaphase to share product definition data on a global basis, and to integrate its entire design environment.

SDRC announced that MascoTech, Inc., a supplier to the major OEMs in the automotive industry, has placed a major order with SDRC and is standardizing on Metaphase Enterprise and I-DEAS software products and SDRC ExperTeam services. MascoTech is a diversified industrial products company. MascoTech Forming Technologies will deploy SDRC's products and services in a Phase 1 implementation in their Royal Oak and Farmington Hills, MI locations. Additional deployment is anticipated in subsequent Phase 2 programs.

SDRC announced an updated interface between its Metaphase PDM solution and AutoCAD 14. The

AutoCAD interface is developed and maintained for SDRC by Altair Engineering.

SDRC reported revenues totaling \$114.1 million for the quarter ending December 31, 1999, about even with the same quarter last year. For the year ended December 31, 1999, SDRC's revenue was \$442.2 million, up 10% compared to 1998. Net income was \$28.0 million compared to \$35.7 million.

SDRC announced an updated interface between its Metaphase solution and Unigraphics 15. The Unigraphics integration contains 17 feature/function enhancements to the existing integration.

SDRC announced that Siemens AG is engaging with SDRC in a partnership for competitive excellence. As part of this program, the power transmission and distribution group (Siemens EV, Munich, Germany) of Siemens AG recently standardized on I-DEAS software.

Siemens AG has now standardized on SDRC solutions - including I-DEAS and Metaphase software and related services - at 8 out of its 9 divisions. Over the past 7 years, more than 5,000 seats of SDRC software have been implemented within Siemens AG.

SDRC announced that MTD Products, Inc. (Cleveland, OH) has selected Metaphase as its core PDM system for document management and change management capabilities. The value of this initial order for software and services is approximately \$600K. MTD manufactures a variety of outdoor power equipment for both residential and commercial markets.

SDRC announced that Singapore Technologies Aerospace has placed an order for SDRC's Metaphase Enterprise PDM software and related services.

**SGI (Mountain View, CA)**  
(+1 415/933-2625) <http://www.sgi.com>

SGI announced results for its second quarter. Revenue for the second quarter was \$648 million, a 5% decrease from the previous year. The company reported a net profit of \$9 million compared with a net loss of \$20 million in the same quarter a year ago.

SGI announced several additions to the company's growing portfolio of Linux operating systems offerings, including the introduction of a new SGI Internet server, SGI Advanced Clustering Environment and global Linux services.

**SmarTeam Inc. (Beverly, MA)**  
(+1 978/524-1950) <http://www.smartsol.co.il>

*Smart Solutions Ltd.* announced that Swiss company Bühler AG has chosen SmarTeam as its global PDM solution. Over 1000 users within the worldwide group of companies will manage their system and design projects using SmarTeam.

Bühler AG concentrates on the food industry, chemical process engineering and die-cast areas. Bühler's product development framework includes Autodesk's Mechanical Desktop, AutoCAD and Autoplant. The use of SmarTeam will initially focus on the management of drawings in the Design and System Planning Departments. Beginning in March 2000, SmarTeam will provide support for the design workstations in the chocolate and thermal process areas.

SmarTeam Inc. announced that Krebs Engineers has selected SmarTeam software as its corporate PDM solution. Krebs' will use SmarTeam to manage product design and development efforts for its cyclone separation solutions. The software will help Krebs with electronic document management, process automation, and for automatic BOM (Bill of Materials) creation in its MRP system. Krebs uses CATIA software as its CAD/CAM solution.

**Spatial Technology Inc. (Boulder, CO)**  
(+1 303/544-2900) <http://www.spatial.com>

*Spatial Inc.* announced the upcoming release of IntraVISION's support of Pro/ENGINEER and CATIA 3D CAD file formats. IntraVISION users will now have access to Pro/E Version 18-20 and 2000i, and CATIA Version 4.x models and assemblies (including product structure data). These capabilities will be available as add-on Direct CAD Modules to both Full and Lite versions of IntraVISION.

*Spatial Inc.* announced results for its fourth quarter and financial year ended December 31, 1999. Overall revenue for the fiscal year was up 4% to \$14,900,000. Total expenses for the year were \$16,522,000, including a one-time charge of \$500,000 for acquired in process R&D related to the June 1999 acquisition of Sven Technologies. The \$3,215,000 increase in total expenses was due largely to expenses of \$1,742,000 related to investments in the Company's rapidly emerging Internet b2b application services.

Spatial reported earlier that results for its component modeling technology business would be negatively impacted by a rapid shift in the way customers are purchasing high-end software technologies. Customers increasingly prefer to acquire component modeling technology through recurring royalty and service fees rather than pay up-front license fees.

Spatial's ACIS 3D modeling kernel has been adopted by more than 550 licensees and is the foundation of over 209 applications used by over 1.5 million engineers and designers worldwide.

Spatial expects to launch its full PlanetCAD application service platform in Q2. In the fourth quarter, the Company went live with its first PlanetCAD service, the 3Dmodelserver.com site, and recorded 4991 subscribers by the end of the year. This was well in excess of the Company's internal target, which was set at 5000 subscribers through the end of Q1 2000. There were more than 180,000 page views recorded at 3Dmodelserver.com in January 2000, a 380% increase over those in December 1999.

*Spatial Inc.*, announced the completion of venture capital funding of \$6.9 million for its PlanetCAD b2b (business-to-business) Internet ASP business for the engineering software industry. PlanetCAD will provide a gateway to a wide set of Web-based engineering application services for the estimated 10 million professional engineers worldwide.

**Spicer Corporation (Kitchener, ON)**  
(+1 519/748-2462) <http://www.spicer.com>

Spicer Corporation announced that its new release of Spicer Imagination extends existing document view and markup to incorporate 3D model capability. Imagination's 2D and 3D viewing capabilities are integrated into one product.

The ability to handle text documents, CAD drawings and published CAD models in a single product with a single Application Programming Interface (API) reduces the number of components in a system, simplifying and reducing the costs of acquisition, integration, installation, training and support. Imagination allows the use of existing markup tools and formats with the new 3D model capabilities. A 2D projection mode is capable of creating a 4-view isometric drawing from pure model data for markup purposes.

Imagination 6.0 is available immediately.

**Staffware plc (Maidenhead, England)**  
(+44 1628/786800) <http://www.staffware.com>

Concert, the AT&T/BT global communications venture, announced an agreement with *Staffware* to develop e-business solutions for Concert's global customers. In partnership with *Staffware*, Concert will build e-business solutions designed to improve customer business performance by re-engineering and automating their enterprise business processes to increase operating efficiencies, improve customer responsiveness, and decrease costs.

*Staffware plc* announced the appointment of Michael Landau as Corporate Development Director. Michael's role will encompass corporate strategy and development as well as assisting with institutional investor relations and the management of the new eProcess division. He will report to John O'Connell, CEO.

*Staffware plc* announced the formation of an eProcess Division, targeting eBusiness. Currently *Staffware* is focused on assisting companies with the transformation of their internal business processes. The eProcess division will be providing organizations with the ability to similarly transform their key ebusiness processes in their dealings with customers, suppliers, intermediaries and staff, globally. *Staffware* defines eProcess as 'the use of workflow techniques across the Internet to help develop and deploy Business to Business applications'. It plans to position eProcess as the 'business to business engine'.

Specifically, *Staffware* has identified and targeted six important emerging market sectors with considerably high forecast growth within eBusiness. These include Supply Chain Management (SCM), eProcurement Customer Relationship Management (CRM), Straight Through Processing (STP), the Application Service Provider market (ASP), and mobile Commerce (mCommerce), embracing the professional worker using mobile phone and other mobile devices.

For these sectors, industry analysts are forecasting growth in sales of software and related services from \$8 billion last year to \$56 billion in five years time - an average annual compound growth rate of more than 60%.

*Staffware* anticipates that the costs associated with its investment in the eProcess market and related product development will be approximately £20 million (\$32 million) over the next 3 years, of which £5 million (\$8 million) will be invested in 2000.

*Staffware plc* announced Group sales at approximately £25 million (\$40 million) for the year ending 31 December 1999. Audited Preliminary Results for 1999 for the Group are to be released during the week commencing 6 March 2000.

**Step Tools, Inc. (Troy, NY)**  
(+1 518/276-2848) <http://www.steptools.com>

*STEP Tools, Inc.* announced that Alibre, Inc. has set up a direct web link to STEP Tools' Free Online Translation Service, a component of their ST-Repository product. Alibre purchased STEP Tools' ST-Developer and ST-ACIS products for the development

of STEP-enabled applications and data translators for Alibre Design ([www.alibre.com](http://www.alibre.com)).

*STEP Tools, Inc.* announced that Atlanta-based ManufacturingQuote.com llc ([www.mfgquote.com](http://www.mfgquote.com)) has set up a direct web link to STEP Tools' Free Online Translation Service, a component of their ST-Repository web-based data management product.

**Sun Microsystems, Inc., (Palo Alto, CA)**

(+1 650/336-2238) <http://www.sun.com>

Sun Microsystems, Inc. reported results for the second quarter that ended December 26, 1999. Revenues for the second quarter were \$3.554 billion, up 27 percent compared with the second quarter of fiscal 1999.

**Tecnomatix Technologies Ltd. (Herzliya, Israel)**

(+ 972 995/94777) <http://www.tecnomatix.com>

Tecnomatix Technologies Ltd. announced that it has received a \$450,000 follow-on order from Comau, S.p.A, a Fiat Group company and line designer and systems integrator.

**Tecoplan AG (Munich, Germany)**

(+49 89/6087620) <http://www.tecoplan.de>

*Tecoplan AG* announced the appointment of Eberhard Walcher as Vice President of Product Development. Before joining Tecoplan, Walcher worked for 15 years for Hewlett-Packard / Co-Create Software where he led several different software projects. Ultimately he was head of development for CoCreate's "Shared Engineering" program.

*Tecoplan AG* announced it signed a two-year contract with the DaimlerChrysler group in the amount of 3 million DEM. DaimlerChrysler first decided to use the Digital Mockup solution "Tecoplan Virtual Workshop" in 1995. The software is used to realize the digital vehicle for passenger car and commercial vehicle development projects, as well as at MCC (Smart car) and AMG of DaimlerChrysler Stuttgart.

*Tecoplan AG* announced it restructured the company's software sales and services areas. Leadership of the newly-structured company is transferred from previous CEO and founder of Tecoplan, Thomas Koytek to Dieter Höfler, previously Director of Sales and Marketing. Mr. Koytek will continue to be responsible for the technological direction of Tecoplan in his role as Chief Technology Officer.

Tecoplan will enter new territory for engineering software sales. The center of the company strategy will be Digital Engineering services. The provided services will be built on two pillars. The Professional Services business, with focus on Tecoplan products, will also include external products (including competitor software products) in the future.

The second pillar will be a new business segment. The core of this segment will be today's Tecoplan software technology; however, in contrast with the traditional engineering software sales method, Tecoplan will offer the use of this software as a pay-per-use internet based software service.

*Tecoplan AG* announced that its product development is now divided into two company segments, 'Professional Services' and 'Web-based Services'. The development department for existing software products is directly integrated into the focused Professional Services segment. Additional access to PDM systems is under development. For example, it is now possible to directly access the iMAN PDM system from Tecoplan's Unigraphics integration. In cooperation with gedas GmbH, the existing Matrix integration is being enhanced.

**Unigraphics Solutions Inc. (St. Louis, MO)**

(+1 314/344-8448) <http://www.ugsolutions.com>

*Unigraphics Solutions Inc.* announced that it has, through its distributor in India, Tata Consultancy Services (TCS), won a contract to provide the Aircraft Research & Design Centre (ARDC) of Hindustan Aeronautics Ltd. (HAL) with CAD/CAM and PDM software.

The contract, valued at over \$1 million, includes more than 100 licenses of UGS' Unigraphics and iMAN applications. The new system will be used throughout the design and development of HAL's new Intermediate Jet Trainer (IJT), from single component design, through large assembly modeling to the complete electronic mock-up of the aircraft. HAL will use UGS' iMAN software to manage all the project's associated product data.

*Unigraphics Solutions Inc.* announced that Soler & Palau (S&P), the leading manufacturer of ventilation systems in Spain, has standardized on UGS' product development software with orders valued at over \$500,000. S&P will replace its existing CAD system with UGS' Unigraphics CAD/CAM/CAE application and will also add iMAN as its standard software for product data management.

*Unigraphics Solutions Inc.* announced financial results for the fourth quarter and twelve months ended December 31, 1999. Software revenue increased 30% and total revenue rose 15% over 1998's fourth quarter with a corresponding 33% growth in net income.

Annual software revenue grew 26% to \$199 million while hardware, consistent with plan, declined 41% to \$35 million.

*Unigraphics Solutions Inc.* announced that the Koenig & Bauer Group has selected Unigraphics and UG/Manager as its corporate standards for product design and data management. The contract's initial implementation phase will consist of 300 licenses of Unigraphics and UG/Manager. A future expansion of the contract is planned to include ProductVision for 3-D enterprise-wide product visualization.

*Unigraphics Solutions Inc.* announced that Germany's BSH Bosch und Siemens Hausgeraete GmbH (BSH) has selected Unigraphics CAD/CAM/CAE and UG/Manager data management software as its new corporate standard for product development. In addition to the integrated software solution, the three-year, \$15 million contract includes extensive training and consulting services. BSH is a leading manufacturer of white goods.

**Verity, Inc. (Sunnyvale, CA)**

(+1 408/541-1500) <http://www.verity.com>

*Verity, Inc.* announced the opening of a new office in Sydney, Australia. Led by Deborah Campbell Lyon, director of Asia Pacific and Latin America sales, this move enables Verity to provide better sales and marketing support for existing Verity customers in Australia, as well as deliver its knowledge retrieval solutions in the Asia Pacific technology sector.

*Verity, Inc.* announced that PurchasingCenter.com, a free online business-to-business service, has implemented Verity's Information Server to provide online customers with advanced information retrieval throughout its expanded Website.

PurchasingCenter.com, designed to reduce the time, cost, and hassle of procuring maintenance, repair, and operating (MRO) supplies, selected Verity's technology to create an easier and faster way for customers to locate products on their E-commerce site.

*Verity, Inc.* announced that it has extended its management agreement with Regent Pacific Management Corporation through August 31, 2001. Under the amended agreement, Regent Pacific continues to provide the services of Gary J. Sbona as Chairman and Chief Executive Officer of Verity.

Computer Sciences Corporation and *Verity, Inc.* announced a strategic alliance to deliver advanced portal and knowledge retrieval solutions to CSC's employees and its customers. As part of the alliance, CSC has selected Verity as the foundation for its Sources Knowledge Portal and has agreed to resell Verity's product suite.

**Vuent, Inc. (Sunnyvale, CA)**

(+1 408/481-1700) <http://www.vuent.com>

Vuent, Inc. announced that Norwegian oil and gas giant, Statoil, in conjunction with its Åsgard offshore oil and gas project, has implemented Vuent's Envision-i to provide enhanced access to its engineering data warehouse and improve design model distribution. The PIM data warehouse applications support engineers and maintenance/operations personnel within Statoil, and external contractors and suppliers during all phases of the plant life-cycle. To ease the sharing and exchange of technical information between project participants, Statoil/Åsgard designed a central data warehouse to make information available over the Internet. Vuent's Envision-i provides the interoperability standards that permit Statoil/Åsgard to link 3D CAD models with associated engineering data warehouse information over the Internet and corporate Intranet. Information that can be retrieved includes design data with technical/functional hierarchies, links to over 80,000 technical documents, and links to information about installed equipment including manufacturer, model/variant, serial number and manufacturer/supplier data sheets. There are approximately 111,000 design items documented in the Åsgard data warehouse.

**WTC (Workgroup Technology) (Lexington, MA)**

(+1 781/674-2000) <http://www.workgroup.com>

Workgroup Technology Corporation (WTC) announced its financial results for the third quarter of fiscal 2000 ended December 31, 1999. For the third quarter of fiscal 2000, WTC reported revenue of \$1,910,000 compared with \$2,183,000 in the third quarter of fiscal 1999. The net loss for the third quarter of fiscal 2000 was \$2,996,000 compared with a net loss of \$2,120,000 for the third quarter of fiscal 1999. The net loss for the third quarter of fiscal 2000 includes restructuring charges of approximately \$1,303,000.

These restructuring charges consist of the following approximate amounts: \$618,000 of severance costs, \$362,000 for costs related to the WTC OpCenter product which was discontinued during the quarter, asset disposition costs of \$270,000, and other restructuring costs of \$53,000. Further, Total Cost of Revenue also includes an additional one-time charge of approximately \$78,000 for the write-off of prepaid royalty fees related to the WTC OpCenter product.

Revenue for the first nine months of fiscal 2000 was \$5,906,000, compared with \$6,093,000 for the comparable period one year ago. The net loss for the first nine months of fiscal 2000 was \$8,328,000 compared with a loss of \$6,841,000 for the first nine months of fiscal 1999.