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supported. And in the future, applications wishing to take advantage of the rich features of DOE, will be able to access the additional capabilities of Solaris LIVE! on DOE.

Solaris LIVE! delivers the foundation for next-generation distributed multimedia applications today, as well as a simplified migration path to the IMA-conformant, interoperable object-based multimedia services of tomorrow. Accordingly, SunSoft has joined with other leading computer vendors including HP, IBM, Univel, SCO and USL to cooperatively develop and promote these cross-platform multimedia standards.

multimedia products available today, Solaris LIVE! delivers a rich multimedia environment. The Sun Catalyst multimedia portfolio: *Third-Party Solutions for Multimedia on Sun Workstations* describes many of these solutions.

Providing for the increasing demands of multimedia in the future requires a robust operating environment with stable interfaces and multimedia extensions. Requirements for time-critical, synchronized transport of large amounts of data, complex multimedia objects, device control capabilities and support for distributed multimedia facilities will place new demands on applications, networks and systems. To address these requirements and build a foundation for future distributed, object-based multimedia applications, SunSoft has developed Solaris LIVE!. Designed to conform to emerging Interactive Media Association (IMA) recommended practices, the Solaris LIVE! environment is a powerful platform for distributed multimedia for the 1990s and beyond.

Solaris LIVE! and Multimedia

Solaris LIVE! provides the framework for distributed, integrated multimedia applications, and builds upon the foundation of Solaris. Solaris delivers a powerful paradigm for distributed computing, while meeting open industry standards for interoperability. As a client-server environment, Solaris further provides a foundation for distributed applications and their network-based communication.

Solaris includes integrated network computing capabilities ranging from inter-application communication facilities (ONC/RPC and ToolTalk) and distributed file systems (NFS) to multiprocessing/multithreading capabilities and distributed window systems. No other computing environment today provides the flexibility, performance and power of Solaris.

Multimedia applications today can utilize the Solaris ToolTalk network-based inter-application communication mechanism to quickly and easily create a ToolTalk interface to an array of multimedia services independent of the application providing the service. ToolTalk technology is also the basis of the *Media Exchange Message Set*, a SunSoft initiative providing integration protocols between multimedia applications.

Applications can use ToolTalk today and migrate to SunSoft's future distributed object-based environment, Project DOE (Distributed Objects Everywhere), in the future. Applications which use ToolTalk today will run without change in the DOE environment because the ToolTalk API will be fully

and management, will all be impacted. For example, through the use of video conferencing, multimedia electronic mail, interactive visualization, and audio annotation to images and text, users can collaborate more effectively.

As products are conceived and developed, increased communication between sales, marketing, engineering and manufacturing will permit greater flexibility in responding to changes in the marketplace. Prototypes can be reviewed before going to manufacturing, and as problems arise, a company's entire pool of expertise can be leveraged to solve them.

Marketing departments can develop more effective strategies for representing their products, as well as have a greater "feel" for development and manufacturing issues. Sales can provide more timely feedback on shipping products and customer requirements, as well as communicate with their customers in the format and location they prefer.

The Multimedia Marketplace

The multimedia marketplace today is made up of a large range of individual software and hardware products providing tools and applications to the user. The lack of clear cross-platform standards, particularly in the PC market segment, further contributes to poor interoperability. Combined with the limits of single tasking systems, in which network connectivity is generally an afterthought, these systems fail to provide much more than stand-alone multimedia systems.

The challenges facing companies today however, are in reducing information overhead, making timely decisions, and getting the right products to market in a timely manner. Only collaborative environments can truly provide this.

Multimedia: Applications for the User, Tools for the Developer

The proliferation of multimedia applications, particularly in today's open, distributed computing world, requires the availability of powerful development tools. The Solaris LIVE! multimedia environment includes a flexible set of tools for development and deployment of network-transparent, distributed, client-server, multimedia applications.

The core services of Solaris LIVE! are the basis of a rich set of multimedia applications and development tools, ranging from audio and video technology to scanning, facsimile, and authoring products. With more than a hundred

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The Impact of Multimedia

Today's companies typically manage information in a piecemeal fashion, through individual applications tied together only through common data. More often than not, extracting new information or gaining insight into a company's operations requires new applications, which in turn act to isolate information rather than to share it.

To free individuals to share information and ideas more widely requires a new approach. Collaborative multimedia has the potential to change the way organizations work, both in terms of how they develop products and services, and how they market them. In particular, multimedia can:

- Promote the exchange of ideas
  From collaborative environments ranging from desktop video conferencing to shared white boards, multimedia applications can provide greater interaction between users and their information.

  Collaborative environments can also grant users direct interaction with information "pools", providing them with broader knowledge and ideas on which to base decisions.

- Enhance information flow
  By communicating ideas in their most effective and efficient format, be it text, image, graphics, video, or audio, information processing can move beyond the limits of today's stand-alone applications. Users can better visualize and process information, and share relevant portions of it with others.

  By using multimedia as a means of communication, companies can reduce training and information overhead so as to make more timely decisions, as well as more effectively communicate with their customers.

- Enable more flexible organizational structure
  As computer networks increasingly become the backbone of today's corporation, the flexibility of organizations to use this medium as a method of sharing information improves.

  The ability to address changing market opportunities, and the flexibility to change organizations to do so are fundamental benefits of improved communication - and multimedia makes it possible.

In the near term, as multimedia technology becomes more commonplace, companies will find its use applicable throughout their organizations. Traditional approaches to research and development, marketing, sales, training

Overview 1

Modern companies are increasingly becoming information-based organizations, dependent upon the continuous flow of data for virtually every aspect of their operations. However their ability to handle data is breaking down because the volume of information is growing at a faster rate than their ability to process it.

Companies today are equally frustrated by the need to maintain competitive, skilled workforces, and to manage information flow between workgroups that increasingly span the globe. For companies to compete in a global economy, they must capitalize on the expertise of the individuals in their organization, empower greater communication among them, and deliver coherent, compelling messages to their customers.

Multimedia, the coordinated merger of multiple forms of information and its presentation, represents the greatest potential vehicle to enhance communication to and between individuals. In providing an advanced, stable platform for multimedia applications in the 1990s, SunSoft is delivering on the promise of maximizing the value and use of information.

Solaris LIVE! represents SunSoft's strategic platform for distributed media for enterprise communication. Solaris LIVE! builds upon the capabilities of the industry's leading distributed client-server operating system, Solaris, while providing a flexible platform for enhanced multimedia applications.

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