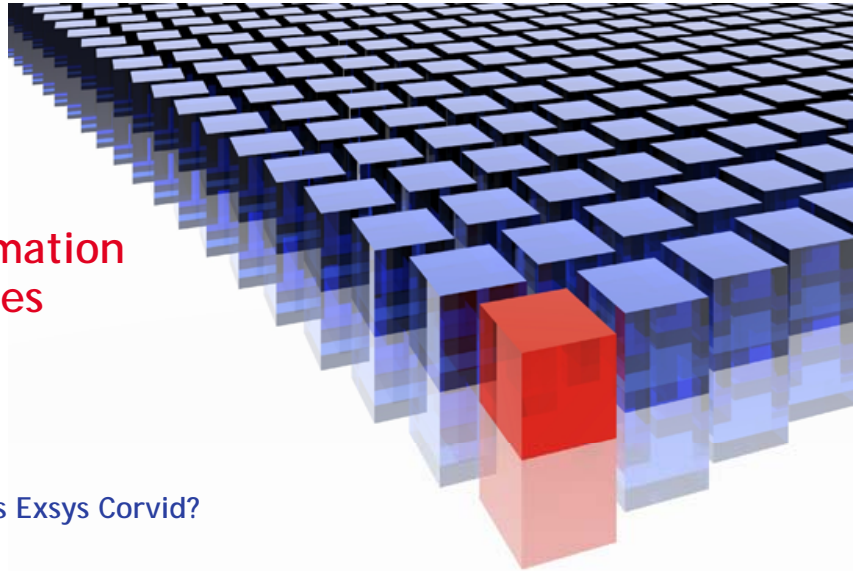


Exsys Corvid[®] Knowledge Automation Systems & Services



What is Exsys Corvid?

Exsys Corvid provides the most efficient and effective way to automate the delivery of problem-solving advice to customers and employees. It is a development tool that makes it practical for a company to build and deploy systems that capture knowledge to provide situation-specific answers. Systems built with Exsys Corvid interact with users in a way that emulates a conversation with a human expert. The systems ask questions dynamically, and use the expert's logic to produce reasoned advice tailored to the individual. Corvid systems can be easily integrated into existing web sites and IT environments to provide support and advice 24/7.

The Exsys Corvid development environment is designed for non-programmers. Systems are built using an English and algebra syntax to write structured If/Then rules that describe decision-making logic. The rules are analyzed and processed by the proprietary **Exsys Inference Engine**, which drives the user sessions. Corvid makes it easy to build and organize the rules, design user interfaces and integrate them with other IT resources to field "Knowledge Automation" systems.



What is "Knowledge Automation"?

"**Knowledge Automation**" is an approach to on-line interactive systems that rapidly and automatically provide each site visitor with tailored, reasoned answers and advice, based on expert knowledge. Traditional sites rely on the Web's ability to provide tremendous amounts of information and data, either as FAQs or using "search" to find potentially relevant information. This works in some cases, but as a decision becomes more complex, the amount of material visitors must read and understand can become overwhelming. Customers and employees want a solution to **their specific problem**, and they want it as quickly and easily as possible without having to do their own research. If they could just contact an expert for advice, they would – but that is typically impossible. Knowledge Automation makes it possible to provide expert consultations in a way that is automated, consistent and reliable 24/7. Knowledge Automation systems built with Exsys Corvid follow the same problem-solving logic and process as human experts; reaching the same conclusions and making consistent recommendations. Exsys Corvid makes it practical to build and field these systems on a Web site to provide advice on everything from product selection, customer support, predictive maintenance, process monitoring, regulatory compliance and many other areas.



Why is it important to implement knowledge automation systems in today's business climate?

The Web has become the primary means of communication for most companies. Business happens 24/7, around the world - around the clock. Prospects are going to Web sites to make purchasing decisions, and customer support is increasingly provided primarily online. Also, employees are expected to understand and follow company business processes and policies based on what they find on intranets. Everyone is looking for answers to their specific questions. Experts are busy people and aren't always available to help. Plus if the experts are often interrupted, productivity declines. Exsys Corvid knowledge automation systems are the only technology that helps businesses and organizations capture expertise and deliver it to those that need it, when they need it.

More and more functions that relied on direct human contact are now being delivered via the Web. As the questions become more complex, they require more than a simple standard answer. The specific needs and situation of each user must be considered to make the best decisions. Exsys knowledge automation systems are the most effective way to handle these situations. The ability to have Web sites with "advisors" that interact with the user as if they were talking to human experts vastly increases the quality, detail and scope of recommendations that can be delivered. Also, a Web site that provides visitors with expert recommendations will attract customers and encourage them to return. Throughout a business's enterprise, internal knowledge automation systems can make employees more productive, with less training and fewer mistakes. For today's global market, Corvid has special features allowing systems to be fielded in multiple languages, allowing advice to be provided around the world and across facilities at multi-national companies.

Companies have a tremendous need for the capture and distribution of knowledge. The cost of training staff and consequences of mistakes are enormous. The growing mass exodus of retirees also has companies scrambling to save valuable "know-how" before it goes. In most companies the vast majority of questions that come up everyday on specific subjects, can be answered by a Corvid system - and there is probably someone in the company that could build the system. There are great benefits to having many pieces of decision-making knowledge preserved and made widely available - but it takes a change in the way people think about distributing knowledge. With approximately the same amount time and effort put into writing a manual or "Standard Operating Procedures", an Exsys Corvid system can be built and fielded that will automate the knowledge and make it available to all. Companies that have made widespread use of Exsys tools for knowledge retention and distribution have shown measurable significant ROI, benefits and savings.



What types of problems does Exsys Corvid knowledge automation systems help solve?

Exsys Inc. has been helping companies and government agencies build knowledge automation systems for over 26 years. The Exsys Corvid approach has been proven highly successful across a large decision-making spectrum. Corvid is used for a wide range of problems that involve providing a recommendation or advice based on logical rules and procedures. The decision can involve combining many separate aspects, including "uncertain" or probabilistic factors to reach a conclusion. Systems results may provide a single specific answer, or generate entire advisory documents or web pages if required. Systems can interact directly with a user, or analyze data from databases or other external programs.

The easiest systems to build are for decisions based on well-documented steps or diagrams, but this is not required. If a decision-making process is well understood (at least by the expert) and based on logical steps that can be explained, it can probably be converted into a Corvid system. Some of the most beneficial systems distribute the knowledge of commonly occurring problems that are well documented, but which are too

complicated to easily explain to a site visitor. Typically this type of problem is easy to build and will produce a rapid ROI by reducing the repeated workload of solving the problem. Also, commonly occurring problems are ones that the experts most fully understand. They know all the exceptions and can describe the logic of the decision-making process fully.

Some of the most common areas for knowledge automation are:

- **Customer Support** - Field highly capable “Self-Service” sites that provide situation-specific answers
- **Troubleshooting** – Process diagnostics, and machinery repair
- **Compliance** - Understanding and conforming to regulations, company policy and Best Practices
- **Product Selection** - Sales advice to recommend the best product(s) for each customer
- **Smart Questionnaires** - Collect data effectively, in a unique interactive user-friendly form
- **Predictive Maintenance** - Detecting problems before they become serious or costly
- **CRM/Sales Support** - Make the knowledge of the best salespeople available to everyone
- **Configuration** - Assure that interrelated pieces will all work together
- **Scheduling** - Prevent resource allocation problems
- **Automated Reporting** – Unique analysis of complex data and report generation
- **Fraud Detection** - Check data and situations for inconsistencies



What types of industries use Exsys Corvid knowledge automation systems?

The Exsys client base covers a broad spectrum of industries including:

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|------------------------------------|------------------------------|
| • Aerospace / Airlines | • Insurance |
| • Accounting | • International Trade |
| • Agriculture | • Legal |
| • Architecture | • Manufacturing |
| • Biotechnology | • Process Control |
| • Business Process Management | • Marketing / Sales |
| • Chemical | • Medical / Healthcare |
| • Compliance | • Military |
| • Computer | • Mining |
| • Construction | • National Laboratories |
| • Consulting | • National Parks |
| • Contact Center / Help Desk | • Oil & Gas |
| • Customer Relationship Management | • Pharmaceuticals |
| • E-Commerce | • Real Estate |
| • Electronics | • Retail |
| • Energy | • Research & Development |
| • Environmental | • Science |
| • Engineering | • Telecommunications |
| • Financial Services | • Transportation / Shipping |
| • Food & Beverage | • Travel |
| • Geography | • Universities |
| • Government | • Utilities |
| • Human Resources | • Web / Internet Development |



How does Exsys Corvid compare to “Case-Based” systems and “Search”?

A case-based approach relies on finding a previous occurrence that in some ways may be similar to a current situation, and using that as the basis for advice. This is appealing if there is a large set of historic cases. However, relying on the earlier case assumes that the current situation does not differ in some important (but perhaps not obvious) way, and the even bigger assumption that the actions on the earlier case were correct and optimal. Case-based systems really can only make a “guess” based on a pattern match, and hope the previous actions taken were correct. Some of the guesses will be correct and some will be wrong. This approach is only practical if having the advice be wrong a certain percentage of the time is acceptable.

Case-based systems have no underlying understanding or description of the decision-making process - just the algorithms for pattern matching. The Exsys Corvid approach is to have advice based on the same defined logic that an expert would use to solve problems. All decisions are consistent and have a specific rationale that can be examined in detail in readable logic. When there are new policies or better understanding of a process, the rules can be modified and the new logic will immediately be applied correctly and consistently across the system.

“Search” has many of the same problems as case-based, but the site visitor now has to sift through the “hits” and decide on their own what is relevant. This may be more work than they may want to do, and they still may not find a correct answer. Search engines are powerful tools, but they cannot differentiate up-to-date from out-of-date information, or advice from experts from advice from novices. Search also relies on the visitor knowing what to ask. Instead, a Corvid system “asks” reasoned questions, analyses the users’ answers and provides specific, appropriate information. This results in a more reliable interaction, and one that emulates talking to an expert.



Can Exsys Corvid be used to capture and preserve Corporate Knowledge and Best Practices?

One of the most challenging problems facing corporations today is the loss of knowledge as senior staff retires. Using Exsys Corvid to build Knowledge Automation systems, decision-making processes are systematically and completely described. Resulting systems document each expert’s decision-making process in a very detailed and readable manner; and provide a way for others to access this expertise on the web. The rules in a system can be examined by other experts for collaboration and they can add their own insights. For some companies the documentation process provides almost as big a benefit as the system itself. Corvid systems preserve an expert’s knowledge quicker and in more detail than other techniques of “knowledge capture”.



How easy is it to build systems with Exsys Corvid?

Exsys Corvid is designed for non-programmers, and you do not have to be a knowledge engineer to build knowledge automation systems. Exsys has thousands of users worldwide that have built powerful and effective advisory systems. For over 26 years Exsys Inc. has focused on creating development tools that are easy to use, but with the power needed to handle complex decision-making processes. Exsys Corvid is the culmination of that effort and valuable feedback from our clients. The Corvid tutorials will get most users saying “I see how all this works” in a few hours. The mechanics of adding and structuring rules in a system are quickly mastered, and only the basics need to be learned to build most systems. When an aspect of the problem gets complicated or a special user interface is required, Corvid has the depth of additional capabilities to handle even highly complex logic and interfaces.

Exsys Corvid provides an intuitive, visual development environment that makes it easy to “describe” the steps in a decision-making process. The logic of the process is described in English and algebra, and is easy to read, understand and maintain. Domain experts can build applications themselves, or work closely with the system authors, allowing applications to be rapidly completed. The Exsys Inference Engine automatically uses the rules to drive system sessions. It determines what questions to ask, combines and analyses the user information, and displays the systems recommendations. Various interfaces and controls are available including database connectivity, web integration, and a range of other features.

Most Corvid users build their own highly successful systems. Corvid is used in hundreds of universities for just this reason. An optional Corvid training class is available, and in 3 days students are taken from knowing nothing about Corvid to building complex systems. This class is given regularly at the Exsys offices or can be provided on-site for larger groups. Customized training can also be provided online via web meetings, especially for users outside of the US.



How are Exsys Corvid knowledge automation systems fielded?

An Exsys Corvid knowledge automation system has two parts, the logic of the decision-making process, and the end user interface. The logic is the same regardless of how it is distributed, but the same system may have different interfaces, or run in multiple languages. The Exsys Corvid development tool produces all the files needed to field a system on the web – just move them to a server.

The logic is run using the Exsys Corvid Runtime programs that incorporate the Exsys Inference Engine, and provides the user interface. The Runtime programs are Java-based and portable across operating systems and servers. The Corvid Runtime programs are available in either Java Applet or Java Servlet form, depending on the preferences for delivery. The Applet Runtime can also be run as a standalone Java application for non-web delivery - including running standalone on the HP iPAQ.

The Applet Runtime allows systems to be easily added to a web page and fielded from any web server. It just requires adding an applet tag to a web page and putting the required files on the server. Commands within the system allow you to specify how questions and results will be presented in the applet window. HTML or RTF reports can be built and displayed in separate browser windows. The Servlet Runtime requires a server that supports Java Servlets, typically running either Apache Tomcat or IBM WebSphere. The Servlet Runtime uses flexible HTML templates to define the look-and-feel of the system. Both approaches can be easily integrated with existing web sites and IT infrastructure. Systems can connect to existing databases and other server-side programs. The Servlet Runtime can even automatically send emails. Systems can be delivered on anything from a desktop PC to mobile devices with browser support.



What does the web site visitor see when they run Exsys Corvid systems?

Fielded Corvid systems can have whatever look-and-feel is appropriate for the system and end user. The core logic of a system determines what information is needed, when it is needed and if the user should be asked to provide it. How questions and results are visually displayed is up to the developer. The screen design, controls used to ask questions, number of questions on the screen, HTML links for details, etc is completely flexible. Some systems use a simple question and radio button formats, others use image maps or other controls. The Servlet Runtime uses templates designed with HTML using standard web design tools, which can incorporate many of the advanced features such as CSS, Flash and other web technologies.



We need our knowledge automation project built quickly, what types of support does Exsys offer?

Exsys Inc. provides consulting services for many of our clients. We can assist with pilot projects, help integrate knowledge automation into your own products, implement systems on your web site, or standardize tools and training throughout an enterprise. Our consulting staff has a thorough understanding of operating systems, hardware, software, internet/intranet and IT integration. Exsys provides:

- **System Prototyping**
- **Project Planning and Support**
- **Training – At Exsys facility, onsite or via web conferencing**
- **Knowledge Engineering**
- **Customization**
- **System Conversion**
- **System Integration**
- **Interface Design**

Exsys software customers with maintenance contracts receive top priority privileges for technical support during the contract period. They receive unlimited email and phone support, new releases, bug fixes, patches, and product enhancements along with the latest online help and printed documentation.



Why should a corporation choose Exsys products and services over others?

- Exsys Corvid is easy to learn and use, and systems are easy to deploy, update and maintain.
- Exsys Corvid is competitively priced and many businesses see a return on investment almost immediately upon deployment.
- Exsys Corvid was developed by a company with over 26 years experience in building knowledge automation system products and servicing customers.
- Our top priority is making our customers successful. Exsys has a proven and on-going track record with thousands of systems fielded worldwide. Our customer relationships cover many years, and their feedback is instrumental in new product development. Our experience with a large variety of successful applications is often drawn upon as new customers explore how to bring knowledge automation to their firms.

For more information, to set up a free web conference or to get a quote on your next Knowledge Automation Expert System project contact:



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