



## What Epiplex Can Do for You

Epiplex is a new kind of application. There is no other software currently on the market that can do what it does, and the wide range of business problems that it can solve historically have been considered as totally unrelated to each other and addressed by very different types of software. As a result, it can take time to understand the full range of solutions that Epiplex provides. This document is an overview of the advantages that Epiplex can provide to your organization.

The thread that ties all of these advantages together is Epiplex's core capture-and-generate technology. All Epiplex interventions are possible because of its capability to watch, record, and (most importantly) *understand* interactions between a user and one or more software applications.

Think of the interactions between a user and software as a conversation. The user starts the conversation by performing an action such as clicking on a button, double-clicking on a file or typing text. These actions have specific meanings; for instance, clicking on the "OK" button is not the same as clicking on the "Cancel" button. The software application responds in very specific ways depending on the user's action, perhaps popping up a dialogue box or opening a file. The system's response, in turn presents the user with a new set of possible next steps based on the kinds of user interface controls that it displays.

At first blush, the animation capabilities of Epiplex might be confused with a simple screen capture tool that records a video of what is happening on the screen. Such tools work analogously to tape recorders; they can capture the sound produced in a conversation but not the *meaning*. Epiplex is completely different in this respect. It captures the conversation *as a conversation*. It understands that a button is a control that a user "clicks on," different from text that is something the user "enters" into a text field. It recognizes and records the button's name and its image. It knows that the new screen that appears after the user clicks on the button is the application's direct response to the user's action. In other words, Epiplex captures an enormous amount of metadata about the interaction between the user, the logic of one or more software applications, and the various names, images, and other elements programmed into the application. This metadata is useful *knowledge* about the business process being performed, and it is captured in real time *as the user actually performs the business process*. The capture process is vastly more accurate and faster by an order of magnitude than the traditional method of capturing a business process by interviewing an expert and taking notes.

Once Epiplex has captured the knowledge of the business process, it can put this knowledge to use very quickly in a variety of ways. All of this information collected at capture time is packaged up in an XML file and a related directory of assets such as screen images. To create an intervention that enables business performance—whether it is documentation, interactive training, a macro, a wizard, or some other type—Epiplex starts by extracting the relevant knowledge from the capture file and automatically *generating* the interaction and the corresponding code to make it operate. So, for



example, rather than playing back a movie of what happened on the screen during capture, Epiplex actually *reconstructs* the interaction. It takes the screen images, draws and animates the cursor to represent the user's actions, writes out a list of the steps in plain English (or any other language the author chooses), and highlights those written steps appropriately and synchronized with the animation. Epiplex automatically generates this animation—and much more—literally in minutes, once again reducing the time it would take to create similar interventions with more conventional tools by typically 85-90% using conventional tools and methods.

However, unlike many authoring tools that provide shortcuts to creating cookie-cutter applications at the expense of flexibility, Epiplex provides full best-in-class authoring environments that enable authors to extensively edit the pre-generated interventions. Furthermore, in many cases it allows authors to use their own specialty tools and editors (such as Photoshop, Dreamweaver, or even Microsoft Visual Studio) to enhance the final product.

These core technologies of capture and generation, coupled with the added flexibility of rich editing tools, enable Epiplex authors to generate an extraordinarily wide range of intervention types. These interventions are described in this paper.

## DOCUMENTATION

One of the most basic applications of Epiplex is to capture a process and render it to an electronic document such as a Word, HTML, PDF, or general XSL file. Epiplex recognizes close to two hundred types of interactions between users and applications, including actions such as clicking on a radio button or dragging a menu bar. Each of these actions is linked to a sentence structure that reads a little bit like a "Mad Libs" sentence (called a *sentence structure* in Epiplex). For example, one sentence structure might be "Click on \_\_\_\_\_ in the \_\_\_\_\_ drop-down menu." When Epiplex generates a document, it fills in the blanks with the control names captured from the document: "Click on *Copy* in the *Edit* drop-down menu." It associates each sentence with a captured screen image and puts them together, in order, in the document that it generates.

Epiplex gives users a great deal of control over the document output. To begin with, they can control the granularity of the steps that Epiplex displays, including options such as combining menu and submenu selections (e.g., "Click on *Page Break* in the *Break* submenu of the *Insert* menu") or combining repeated actions on the same control (e.g., "Hit the *Page Down* key four times"). They can control typesetting options such as font characteristics and can insert the generated output into pre-created templates (such as Word .dot files) of their choosing. If this isn't enough control, then an expert can further customize the output using XSL. Naturally, once the documents are generated, they can be edited using the appropriate tools for the document type, such as Microsoft Word or Macromedia Dreamweaver.

Even the generated sentence structures are editable. Epiplex allows users to create their own sentence structures for each of the actions it recognizes and tie those sentence



structures together in a unified style that is appropriate for the type of document being generated. In fact, this feature makes it easy to generate documentation in other languages by simply having a translator create sentence structures in the target language (which is roughly the equivalent amount of work to translating a four-page document).

When combined with the order of magnitude compression in documentation development time that Epiplex's capture and generate capabilities afford, the documentation functionality affords you a broad range of practical applications:

- **Retaining business process knowledge that could be lost due to downsizing or other attrition:** Because Epiplex can capture computer-mediated processes in real time, it can be used to acquire and preserve valuable knowledge that would otherwise be lost due to downsizing, office relocations, or other causes of employee attrition. For example, during the upcoming migration of several branch insurance offices of a large financial services client of ours, Epiplex will be used to prevent the possible loss of business process knowledge should none of the employees in one or more of the offices choose to relocate. Christensen/Roberts Solutions expects to be able to capture 100% of the computer-mediated processes in less than two days. These capture files can then be used to generate documentation and interactive training for new hires in the new office.
- **Meeting Regulatory Requirements for Process Documentation:** The Federal Government mandates that financial services firms, and firms in certain other industries, document a wide range of transaction procedures. Using Epiplex, it's possible that companies in such a situation could reduce the total cost of their documentation efforts by 85% or more.
- **Documenting Workflow on Legacy Systems for Design of New Software Applications:** Epiplex can reduce one important risk element in software application design by making it easy to accurately capture the current workflows. Because Epiplex can capture the workflows in real time from actual on-the-job transactions, it dramatically speeds up this critical step in requirements gathering while simultaneously increasing its accuracy over notes taken from conventional interviews with legacy system process experts.
- **Generating QA and User Acceptance Testing Scripts:** Because Epiplex can generate step-by-step instructions so quickly, it is a natural to use in the creation of any sort of test script. The extensive control that the software offers in terms of output styles and document templating makes it easy to tailor the generated script for the appropriate type of test.
- **Generating Accurate Bug Reports:** One of the more difficult aspects of defect tracking is getting accurate, useful bug reports from the field. Epiplex enables QA testers to append a capture file to their bug reports, so the QA team can see exactly what the tester saw.



- **Capturing Current Business Processes for Six Sigma Studies and other BPR-type Efforts:** Possibly the most critical and yet time-consuming task in any sort of business process analysis and re-engineering effort is capturing the current state of the process as it is actually practiced in the field. EpiPlex provides a fast, low-impact, cost-effective method of doing so with unparalleled accuracy.
- **Generating Multi-lingual Documentation:** Because EpiPlex's output is generated from a list of less than two hundred sentence structures, it is a relatively simple and inexpensive matter to localize documentation. EpiPlex can even handle double-byte languages such as Kanji.

## SIMULATION, ANIMATION, AND TEST

Just as EpiPlex can use XSL to generate documentation from the information it gathers during the capture of a process, it can also generate extremely rich, interactive simulation training. To begin with, it can generate a "Show Me" animation of the task, with the actions of each step synchronized to a running text list of the steps (in the same way that EpiPlex generates the sentences for documentation). Second, it generates a fully interactive simulation, in which learners are presented with a list of steps and asked to perform those steps in the simulated GUI of the captured application (or applications). Once again, EpiPlex synchronizes their actions with a running list of steps in the task, highlighting the step that the user must perform next and checking it off when it is done correctly. EpiPlex even automatically generates feedback for incorrect actions by users, showing them a dialogue box that lets them try again, get a hint, or have the system perform the step for them. And finally, EpiPlex generates a test in which the users are asked to perform the actions in the task and are scored on their performance. All of these interventions can be generated simultaneously with documentation (and all accomplished literally within minutes) to create complete learning and documentation resources.

Once these interventions (called "epiLearns") are generated, they can be edited in a rich, best-in-class authoring environment. EpiLearn authors can edit step sentence structures, feedback, and visual hints quickly and easily. They can add audio narration to each step. They can add hint balloons and comments. In places where screens don't exist yet or are about to be changed, they can add artist-created images of the screens and add interactivity just as if those screens had been captured from the live application.

As powerful as EpiPlex's authoring environment is, epiLearn authors are able to supplement it with traditional web authoring tools of their choice. They can add introductory content screens created in their favorite HTML editing tool, such as Dreamweaver, Front Page, or even Microsoft Word or Powerpoint, and import these screens into their epiLearns. They can even edit media resources in their favorite editors, such as Adobe Photoshop for the screen captures or Sound Forge for the audio narration.

Once the epiLearns are edited to the author's satisfaction—a process that typically takes hours rather than the days or weeks required to create the equivalent level of functionality using other tools—EpiPlex will generate the fully interactive epiLearns in industry-



standard DHTML. These files are simply static HTML directories; no plug-ins are required, no Java is used, and no server-side functionality is necessary. However, if the epiLearns will reside in a Learning Management System (such as MLU), Epiplex includes a utility for generating industry-standard SCORM metadata that allows the LMS to set access permissions and track learner progress and test scores.

This functionality can support a variety of business needs:

- **Application Training:** Because Epiplex can generate fully interactive simulations, animations, and tests all in the same or less time than it takes to build a non-interactive slide show or animation using other tools, it can enable you to provide dramatically and demonstrably higher learner retention with very low development costs. And since Epiplex fully supports the SCORM interchange standard, learner progress and test scores can usually be reported directly to whatever learning management or content management system you may use.
- **Business Process Training:** Because Epiplex can create SCORM-compatible learning objects, and because it can incorporate HTML pages created by any tool into its generated learning objects, embedding epiLearns into courses about larger business processes is easy. For example, it would be a simple matter to create an epiLearn that starts with information about how to choose stock options that are appropriate for a client's risk tolerance and then provides the learner (in this case a broker) with an interactive simulation of how to trade those options using the applications available to the broker.
- **Embedded Help:** Since they are nothing more than static HTML directories, epiLearns can be added to the contextual help menu of any application, providing animations and even interactive simulations for any tasks that users may want to perform on a given screen. Epiplex even has a "Cue Card" style that generates output very similar to the "Quick Cards" found in many applications today.
- **Simulating the User Interface for Software Applications Under Development:** When applications are under active development, Epiplex's robust simulation development environment can be used to quickly assemble interactive mock-ups of the application's goal state, either by editing the epiLearn generated from the capture of the application's current state or by creating an epiLearn from scratch using artist mock-ups of the screens.

## GUIDES AND GENIES

Beyond generating documentation and interactive tutorials, Epiplex can also generate interventions *that interact with the live applications themselves*. Using a small run-time engine that can be either installed as part of a desktop build or downloaded on-the-fly from a web server, it can interact with the user and the application in two distinct ways.



First, Epiplex can actually play back the actions performed by the user during capture, essentially generating a macro-like element in minutes, called an *epiGenie*. Once the epiGenie has been generated, Epiplex allows the author to create user input forms and bind the fields and data in those forms to fields and data in the application via the genie, using a simple drag-and-drop interface. For example, a standard macro that looks up a particular stock and generates a report for it can be turned into an epiGenie that can look up any stock. The process merely involves creating a form with a text input field, opening up the list of steps that the genie performs using Epiplex's built-in editor, and dragging the step where the user enters the stock symbol onto the text input field in the new form. Epigenies can be created in minutes and, in many cases, can be edited, run through QA, and be ready for production in a matter of hours.

Epiplex can also generate an interactive coach that walks users through performing tasks in the live application. Using the same technology that performed the original capture, Epiplex compares the actions of the user to the steps performed by the expert at the time the task was captured. These coaches, called "epiGuides," can be more or less assertive in their coaching interventions, depending on what the author chooses. At their least assertive, they will simply display an always-on-top cue card that will check off steps as the user performs them. At their most assertive, the epiGuides can actually stop the user from making a mistake, providing error feedback and painting a hint box around the control that the user is supposed to select.

EpiGuides and epiGenies can be used individually or they can be woven together (along with epiLearns) into a rich blended solution, automating steps that require no human decisions, guiding the user in steps that do, and providing supplemental tutorials when necessary. The Epiplex authoring environment includes a full visual programming canvas, similar to those found in IDE's like Microsoft Visual Studio, that enables authors to chain various epiPlex interventions together, add branching and looping logic, and even import VBScript to supplement the functionality that Epiplex can generate natively.

Using these tools, an Epiplex developer can automate, simplify, and drastically improve the user interface of almost any application, or even provide integration tools that work across several applications, in far less time that conventional development tools would allow. Furthermore, it can accomplish all of this *without ever touching the application's source code*. EpiGuides and epiGenies interact with applications exactly the way users do — by stimulating the pre-existing user interface controls. As a result, Epiplex interventions can be added or removed as required, without having any effect on the underlying applications.



These capabilities provide you with what you need to address a broad range of business challenges:

- **Achieving Day-1 Competence Without Conventional Training:** Using genies to simplify workflows and guides to provide interactive guidance, it is possible to provide enough embedded support that users can learn to perform tasks on-the-job without any prior training. In effect, the system will teach users what they need to know as they go. For example, Christensen/Roberts Solutions used Epiplex to create a genie for a client for creating a new job classification in Peoplesoft — a task that normally requires entering data repetitively across a number of screens that are scattered throughout the Peoplesoft interface. The end result was that users who formerly would have required two hours of training can now perform the task with no training at all.
- **Preventing Critical Errors:** Because it is possible to compare a user's actual workflow with a canonical workflow using a guide, or to hide error-inducing application complexity behind a genie, Epiplex can reduce or even eliminate certain kinds of errors in critical workflows such as those involving financial transactions. In the previous Peoplesoft example, in addition to eliminating the training time, the genies increased accuracy from 70% to 98%.
- **Economically Customizing Third-Party Applications:** Because Epiplex is so flexible and easy to use on any application, it can be quicker and more cost-effective than using a third-party application vendor's native scripting tools. For example, Christensen/Roberts Solutions was able to dramatically reduce the time required to customize Peoplesoft compared to the same customizations using Peoplecode, and in one case was able to create a customization that was actually impossible to do with Peoplesoft's own scripting tools.
- **Customizing Outsourced, Externally Hosted Applications:** Since Epiplex interventions never actually touch the source code of the applications, they can run equally well on ASP-provided applications over which you normally have far less ability to customize.
- **Extending the Useful Life of Legacy Applications:** In cases where the legacy application is being taken out of service mainly because it no longer supports current workflows (i.e., where the problem with the application is the front end rather than the back end), Epiplex can keep those applications useful by making it possible to economically modify the interface and the way it supports workflows. In many cases, Epiplex can even be used to add GUI's to mainframe applications.
- **Front-End Application Integration:** In cases where data needs to be pulled from one application and placed into another by users on a fairly regular basis (typically, when data from the first application is being used to generate a report in the second), Epiplex can very quickly generate a genie that can dramatically reduce the amount of labor required to perform the task.



- **Data Migration:** The same functionality that enables front-end integration makes Epiplex useful for certain kinds of data migration, in cases where the data models match fairly closely. An epiGenie can cut and paste data from the fields of the old application into the fields of the new one.
- **Configuration Management:** EpiGenies can simplify complex and arcane configuration processes, reducing them to interactive business dialogues with the users. For example, Christensen/Roberts Solutions created a Peoplesoft configuration management genie that asks the users questions about their needs for the local configuration and then automatically set the application's parameters in a logical sequence, eliminating the need for specialists to translate customer requirements into parameter settings in the appropriate system modules.

Epiplex was awarded the Extraordinary Product award by the 2000 Online Learning Conference sponsored by VNU Learning. In 2002, Epiplex was awarded the Gold Award for Innovative Products at the 2002 Excellence in E-Learning Awards, sponsored by Online Learning, Brandon-Hall.com, and EPSScentral.com (see <http://www.brandonhall.com/public/awards2002/>). In 2003, Epiplex was a winner in the Extraordinary PCD Tools category at the annual PCD Awards sponsored by EPSScentral.

For additional information, demonstrations, and evaluations, please contact us:



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