

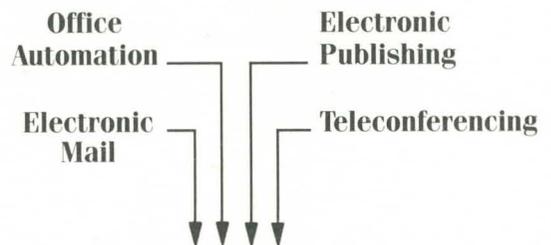
BBN Slate™

advanced office automation software

If you've ever written any kind of document for your organization, you're well aware of how frustrating, time consuming and expensive the process can be. Deadlines, time, money, and even new business opportunities can be lost while you're trying to see the people whose opinions and approvals you require.

During the document preparation process, have you ever wished that you could . . . *Get the information you need when you need it? Check the accuracy of your interpretation as soon as you've written it? Run an idea by someone in a distant office for immediate review and approval? Get charts and graphics from other locations without having to wait days or even weeks? Arrange a conference with people in several separated sites to collaborate, modify and revise the document in real time?*

If this looks like your wish list, then you're ready for something new in document processing—you're ready for BBN Slate™ advanced office automation software for UNIX™ workstations.



BBN Slate™ advanced office automation software merges elements of four powerful technologies into one seamless environment.



Slate™ Software Expands the Concept of Electronic Documents

Developed by BBN Systems and Technologies Corporation, Slate™ software helps you create, edit, transmit, and manage documents. A Slate document integrates six media elements—text, geometric graphics, scanned images, speech, spreadsheets and charts generated from spreadsheets—into a single seamless environment. The result is an integrated package that will expand your present concept of electronic document exchange.

With Slate software, a single author or group of authors can collaborate to produce documents combining text, artwork, and images in a matter of moments.

The six media elements supported by Slate software can be used interchangeably across the system and can be combined to form a single integrated document. For example, your marketing manager's monthly report may contain the text of a new product market assessment from the New York office, the sales forecast on a spreadsheet from the Dallas office, a competitive analysis bar chart complete with textual market share information from London, and copies of scanned advertisements for new entrants in your market segment.

Then, using the Slate Electronic Document Conference Facility, your writers, editors, lawyers, managers, and technical staff—from a variety of locations—can hold an electronic conference to review a part, a page, or all of the draft document, and make whatever changes are required in real time, without losing days or weeks before publication.

The output of the final document can be printed in hardcopy, transmitted via electronic mail, or stored for future use. In fact, a single Slate document can be used in all of these output contexts over its lifetime.

Likewise, a new business proposal can move from bid to evaluation and from draft to best and final stages via electronic submission.

Slate Software for a Variety of Compound Documents

With Slate advanced office automation software, you can quickly and cost-effectively prepare materials for:

- Technical Documentation
- Business Proposals
- White Papers
- International Documentation Exchange (memos, reports, forms)
- Sales, Marketing and Legal Departments (price lists, catalogs, contracts)
- Electronic Slide Presentations
- Electronic Submission and Review (proposals, research reports, forms and budgets)
- Group Teleconferencing (command and control applications, time-critical information)

Integrated, Seamless Technology at the Core of Slate Software

Office automation, electronic publishing, electronic mail and teleconferencing are four powerful tools that, individually, have changed the way we work today. Combined, as they are in Slate software, they can have a revolutionary impact on the ease with which we develop, write, publish, and disseminate documents.

During the lifespan of a typical document, it is printed, revised, changed into many new formats, and distributed many times and in many new ways.

To keep up with this dynamic process, Slate software's integrated technology stores and recalls the underlying structure of each iteration as well as each dissemination of a document.

The Slate editor discerns the various parts of a document—headings, paragraphs, charts, graphs and tables—and then allows the authors to easily change to what is needed.

Slate software seamlessly manages any number of media elements used in the author's document preparation. From simple documents, such as monthly reports and internal memos, to complex documents, such as books and proposals, authors can move within a single document or within a number of documents, changing the type of media element to be edited *very rapidly*. This feature makes Slate software particularly well suited to technical documentation where figures and text must be closely coordinated.

Slate™ Software Features

- Simple, responsive, what-you-see-is-what-you-get (WYSIWYG) interface.
 - Editor supported multi-font text, bitmap images, geometric graphics, spreadsheets (and graphics derived from spreadsheets), and digitized voice.
 - Multimedia conference facility allows geographically separated sites to view and update the same document on displays in real time.
 - Single editing display surface.
 - Uses standards (ASCII, PostScript™, TCP/IP).
 - Added dimension of graphics in electronic communication.
 - Voice annotation using speech digitizer.
 - Supports electronic document exchange via existing mail facilities as well as ISO, X.400.
 - Compound documents can be produced by user's applications programs.
 - Runs on workstation hardware.
 - Uses standard window environments.
-

Slate Software Elements

Text

Text generated on a Slate system can be formatted in a wide range of styles. Authors may adjust margins, tab stops, line spacing, justification and fonts in a passage. Formatting is done as text is entered with immediate what-you-see-is-what-you-get (WYSIWYG) changes. Predefined styles exist for convenience, but you can develop specific styles for future documents. Individual words within a paragraph can be displayed in various font families (Times Roman, Helvetica, Fixed Width) and font faces (roman, bold, italic, bold italic), in a face which is smaller or larger than the surrounding text, or as a superscript or a subscript, underlined, or overstruck.

Voice Annotation

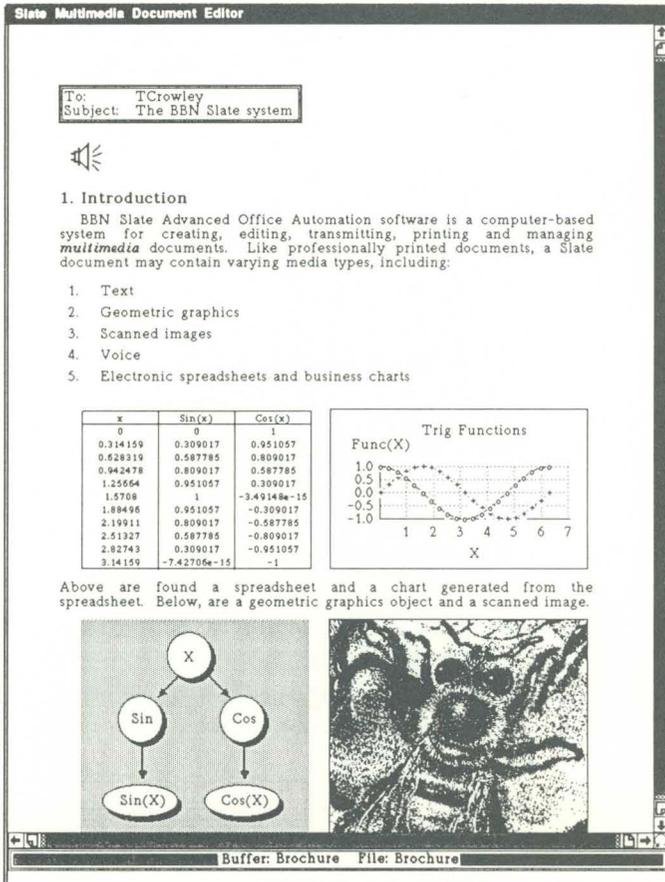
Voice annotations can be inserted as part of the Slate editorial process. Authors and editors who review a document can make comments about desired changes, deletions and additions. By means of a speech digitizer, the spoken voice is digitized and compressed. When a voice icon appears, , it signals the reader that a voice comment has been made and that invoking the playback command will allow the comment(s) to be heard.

Scanned Images

Original black and white photographs, maps, drawings, or text are inserted in a document as a bitmap representation (digitized image) by an image scanner. Images can be manipulated in an electronic darkroom including scaling, rotation and cropping.

Geometric Graphics

The graphics possibilities in a Slate document include lines, geometric figures (polygons, circles, ellipses), text and scanned images. Closed regions (such as a polygon) can be shaded with textures and patterns that fill the region. Individual objects within graphics may overlap one another.



The screenshot shows the 'Slate Multimedia Document Editor' window. At the top, there is a header bar with the title 'Slate Multimedia Document Editor'. Below the header, there is a text area containing a memo header: 'To: TCrowley' and 'Subject: The BBN Slate system'. Below the header, there is a voice icon. The main text area contains the following content:

1. Introduction
BBN Slate Advanced Office Automation software is a computer-based system for creating, editing, transmitting, printing and managing *multimedia* documents. Like professionally printed documents, a Slate document may contain varying media types, including:

1. Text
2. Geometric graphics
3. Scanned images
4. Voice
5. Electronic spreadsheets and business charts

Below the list, there is a spreadsheet and a chart. The spreadsheet is a table with three columns: 'x', 'Sin(x)', and 'Cos(x)'. The chart is a line graph titled 'Trig Functions' showing 'Func(X)' on the y-axis and 'X' on the x-axis. Below the chart, there is a caption: 'Above are found a spreadsheet and a chart generated from the spreadsheet. Below, are a geometric graphics object and a scanned image.'

The geometric graphics object is a diagram showing a circle 'X' at the top, with two arrows pointing down to circles 'Sin' and 'Cos'. Below 'Sin' is a circle 'Sin(X)', and below 'Cos' is a circle 'Cos(X)'. The scanned image is a black and white photograph of a spider.

At the bottom of the window, there is a status bar with the text 'Buffer: Brochure File: Brochure'.

Electronic Spreadsheets

The Slate spreadsheet medium is represented as a two-dimensional array in which each cell contains a number, label, date, or formula. Formulas relate the contents of one cell to other cells in the table. Since a spreadsheet in a Slate document includes the underlying model (i.e., the formulas that interrelate the data), the recipient of a Slate spreadsheet can do "what if" experiments with the table.

Charts

Line, bar and pie charts based on spreadsheet values can be included in any Slate document. As the values in the spreadsheet change, the values in the chart also change. Resulting charts can be annotated and customized.

Slate Multimedia Document Editor

Text Slate text can be formatted in a wide range of styles. The user may adjust margins, tab stops, line spacing, justification, and the font of a page as well as other reformatting parameters. Certain styles are predefined; users are free to develop their own styles and use them in creating new documents. All formatting is done as the text is entered. The user can immediately see the effect of any formatting changes. Individual words in a paragraph may be displayed in various font families (TimesRoman, Helvetica, Fixed), sizes, roman, bold, italic, bold italic font face, in a font which is smaller or larger than the surrounding text, as a ^{super-script} or as a _{sub-script}, underlined, or ~~overstruck~~.

Geometric graphics
A Slate graphics element is a drawing which may include lines, polygons, circles, ellipses, text and bitmap images. Closed shapes (such as polygons) may be shaded with textures (regular bit patterns) or filled with another. For example:

Document Editor Operation

```

    graph TD
      DispatchTasks[Dispatch Tasks] --> EventsPending{Events pending?}
      EventsPending -- yes --> ModifyDocument[Modify Document]
      EventsPending -- no --> LayoutWrong{Layout wrong?}
      LayoutWrong -- yes --> Layout[Layout]
      LayoutWrong -- no --> PaintRequest{Paint request?}
      PaintRequest -- yes --> Painting[Painting]
      Painting --> Format[Format]
      Format --> InputEvent{Input Event?}
      InputEvent --> DispatchTasks
      Painting --> LayoutDisrupted{Layout Disrupted?}
      LayoutDisrupted --> EventsPending
  
```

Scanned Images
A Slate image element is a bitmap representation (digitized image) of a drawing, map, photograph or other picture. Images are entered into a document by an image scanner, such as a digital facsimile machine or a digital camera, or directly by use of the Slate multimedia editor to "paint" a black and white image. Currently, black and white images are currently supported, although we are in the process of supporting color and grey-scale images in the future. For example:

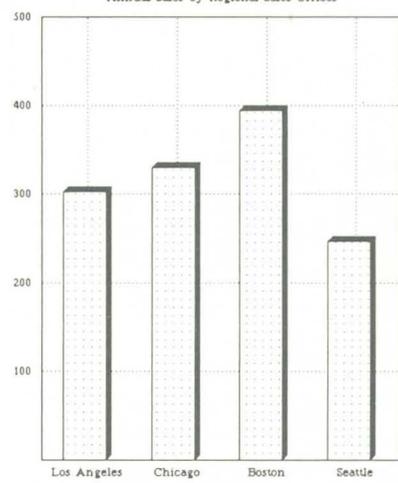


Buffer: Brochure File: Brochure

Slate Multimedia Document Editor

Charts Line, bar and pie charts based on values in a spreadsheet may be included in a Slate document. As values in the spreadsheet change, the depiction of those values in charts change also. For example:

Annual Sales by Regional Sales Offices



City	Annual Sales
Los Angeles	300
Chicago	330
Boston	400
Seattle	250

Speech Voice annotations may be inserted so that any reviewer of a Slate document can make comments about desired changes. A voice element is a digitized speech passage. Voice elements are entered into documents by means of vocoder devices. Currently Slate software uses LPC vocoding devices to digitize and compress spoken speech. For presentation purposes, each voice element in a document is represented graphically by the icon:



Needs more exploration

as well as an optional text caption. A reader of a Slate document can hear a voice element by pointing to the icon and invoking a playback command.

A Slate document is an integrated composition of elements of the six media types

Buffer: Brochure File: Brochure

Electronic Document Conference Facility Allows Real-Time Collaboration

BBN Slate software has a built-in Electronic Document Conference Facility that allows participants in geographically separated sites to confer over one document. With this feature, all parties see the same view of the draft document while they participate in a conference with other authors, editors or reviewers. The author, editor or reviewer who has the 'floor' in the conference is able to modify the draft document while all other participants see the edits actually being made on their own screens—in real time.

The Electronic Document Conference Facility can also be used in other situations to bring everyone from colleagues to customers together. For example, an electronic slide presentation can be made to a remote customer site without incurring time and travel costs. And collaborative real-time sales training can be done without disrupting work schedules.

The Slate Interface Gives Authors Document Control

The Slate interface was designed with authors in mind. With Slate software, an author can:

- *Transparently switch among media elements.* The author can update a spreadsheet application then immediately change the corresponding text without leaving the one document screen.
- *Easily combine multiple documents to produce a new document.* The author can move text from one place to another in the text without complex commands. Slate software translates the document into its underlying structure and then fits that structure to multiple, new document formats.
- *Effortlessly edit 'live' documents.* The author always sees a complete what-you-see-is-what-you-get (WYSIWYG) document no matter how many edits are done.
- *Conveniently meet current needs.* The author can add new formats to the existing or predetermined format styles.
- *Skillfully manage multimedia choices.* The author can use the resources of many media elements in one editing session, in one or more documents, with one or more authors.

Slate Software Interacts with Other Systems and Applications

In addition to traditional document operations such as filing and printing, Slate software supports the electronic exchange of documents via standard electronic text mail systems and the ISO X.400 mail transport systems.

BBN has developed data conversion utilities for Slate software which translate many of the document processing packages available today. For example, a Slate utility can translate a Slate document into ASCII text. Likewise, there are Slate translators for introducing the output files of many applications, including Lotus 1-2-3™, into their corresponding Slate media elements (e.g., graphics, scanned images, spreadsheets, drawings, and charts). Using the standard formats of a Slate document, your specific application programs can also produce a report containing text, graphics, charts, and images.

Slate Software Puts Your Data Where It's Used and Needed Most

Whether you're writing a monthly report, a new business proposal, an employee newsletter, a price catalog, or the script for a slide show, Slate software can help you.

Slate software cuts writing time, reduces the need to use costly production facilities, eliminates waiting, and speeds up approval processes. By connecting author to editor, author to reviewer, and author to other authors, *BBN Slate software puts the data where it will be used the most, when it is needed most.*

For more information . . .

For more information on how you can expand the power of your electronic document exchange and reduce your company's documentation costs, write or call the Slate Software Marketing Manager at:

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