Metamail Technology

The New Face of Email

Metamail is a next generation email application development platform. Metamail's unique XML-based architecture, ePaper and message display technology, make it easy to design and deliver the industry's most secure, versatile and effective customer communications programs.

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Overview

Metamail Corporation is a leading provider of advanced email security and trusted communications software. Our vision is to bring a new level of security and functionality to global email communications. Metamail provides a next generation platform for building trusted email-based customer relationships. Metamail messages are designed to look and feel like real mail. The concept is simple, but the effect powerful. As a result, Metamail dramatically outperforms all other e-mail formats. Behind Metamail's familiar format lies an advanced security and enterprise-wide solution designed to automated key processes and dramatically enhance the role of email as a strategic business tool. Key applications include product registration, customer relationship management, marketing, and electronic billing.

Key Advantages

Metamail is a new email file format designed to guarantee the integrity and safety of email. To date, email has been limited to two file formats, plain text (ASCII) and HTML, neither of which is inherently secure. Metamail is the first XML-based messaging format specifically engineered for the inbox. Metamail dramatically outperforms conventional HTML messaging systems, providing unparalleled results.
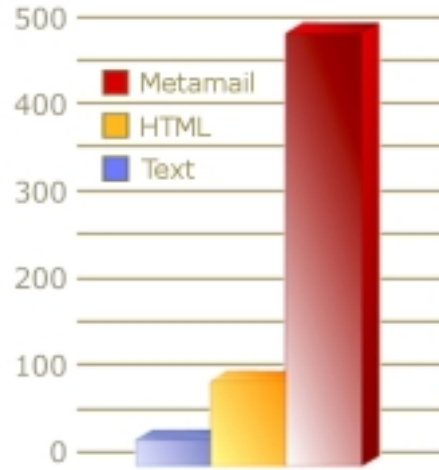
Metamail outperforms all other email formats delivering a 5:1 increase in response.

Products

Metamail helps technology, consumer electronics, appliance manufacturers, and financial institutions expand their registered customer base, increase revenues, and enhance customer relationships. Metamail can be easily added to any product and works even if users are not connected to the Internet at the time of registration. Metamail is designed for wide-scale OEM integration and distribution by leading technology, consumer electronics, appliance manufacturers, and financial institutions.

Integration

Metamail is designed to integrate seamlessly with existing corporate email and database marketing systems and e-commerce processes. Message templates are created using Metamail Publisher and uploaded to the Metamail Enterprise Server which acts as a SMTP mail proxy. Written in Java, the Metamail Server is compatible with Windows NT-based and UNIX operating systems and does not require dedicated hardware.

① E-mail Sender   ② Metamail Enterprise Server   ③ Corporate SMTP E-mail Server   ④ E-mail Recipient

Metamail Message Format

XML Architecture

The Metamail file format is based on industry standard XML, the accepted format for information interchange over the Web. Metamail lets you create XML-based content that can be categorized, searched, re-used, and automatically formatted for use by corporate database marketing, customer support, online billing and other mission critical systems.

Real Mail Messages

Metamail messages recreate the look and feel of paper documents. The concept is simple, but the effect powerful. Metamail formatted messages outperform HTML by an average 5:1.

Paper Textures

Metamail offers the world's most advanced e-paper technology. Metamail's patented TurboTexture technology offers a wide range of bandwidth efficient e-papers and eye-catching effects for enhancing any email campaign.

Document Metaphor

Unlike HTML, the Metamail format is not plagued by annoying and confusing pop-up windows. All Metamail frames—coupons, attachments, business cards, photos and more—are interconnected within a single Metamail document workspace. This entire workspace can be moved and resized as a single, cohesive unit.

Campaign Metrics

Currently, the ability to track user behavioral information is limited to simple data points, such as whether or not the user has opened an email or whether the user has clicked on a hyperlink. Metamail's campaign tracking technology goes far beyond this ability and allows the capture and recording of significant, detailed, user-permitted information including whether a message has been opened, viewed, printed, forwarded and much more.

Security – Trusted Publishing

Metamail is a new email file format designed to guarantee the integrity and safety of email. To date, email has been limited to two file formats, plain text (ASCII) and HTML, neither of which is inherently secure. Metamail is the first XML-based messaging format specifically engineered for the inbox.
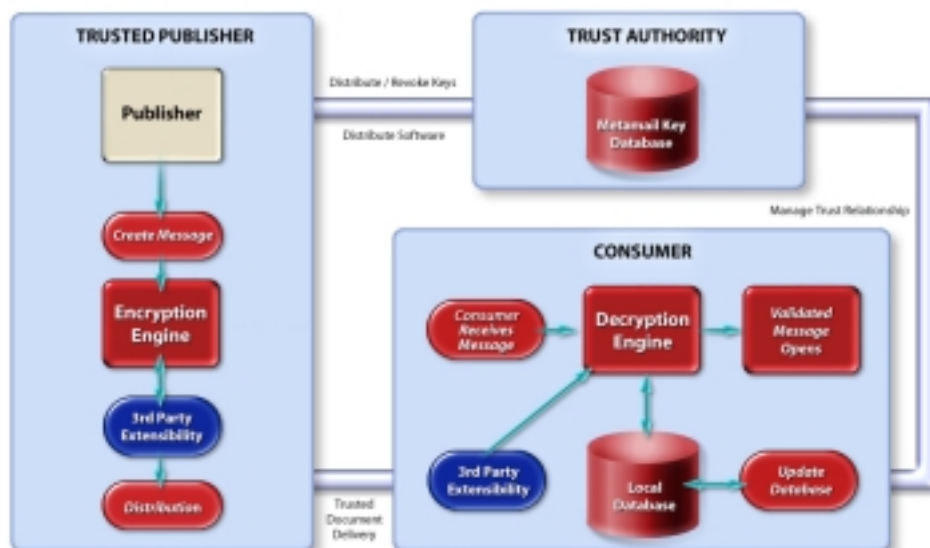
The Metamail Trusted Publishing solution ensures that all messages are 100% SPAM-free and trustworthy. Metamail's digital signature technology verifies both the identity of the sender and the integrity of every message. The Metamail process is remarkably simple. Trusted Publishers are issued private keys used in creating and signing Metamail messages. End users receive public keys used to validate the messages.

At the heart of the system is the Metamail Message Format (MMF). When a Metamail message arrives in a user's inbox, clicking on the message launches the Metamail Reader, an intelligent client application that automatically decodes and verifies every message prior to opening. If a message has been altered in any way, or the identity of the sender is not a confirmed Trusted Publisher, the Metamail client software will refuse to open the message, automatically alerting the Metamail Trusted Publisher Network.

Metamail messages can be created quickly and easily using Metamail Publisher, the industry's first XML-based Email Publishing tool. Each Trusted Publisher partner is provided with a protected copy of Metamail Publisher, which includes a unique publisher certificate. When an MMF message is created, the message is signed using the Trusted Publisher's certificate, which is managed by Metamail Corporation on behalf of the Publisher. The Metamail message is delivered to the recipient using standard email transports. The Metamail Reader references a local list of Trusted Publishers to ensure that the message was sent by a Metamail Certified Trusted Publisher. The Metamail Reader client runs continuously on the user's desktop, communicating with the Metamail Network to maintain an up-to-date list of Trusted Publishers.

Metamail tracks and manages all Publishing Certificates. Trusted Publishers must abide by CAN SPAM regulations and industry-standard best practices, as well Metamail's own strict licensing provisions. As a Trust Authority, Metamail ensures the highest level of consumer confidence with real-time security monitoring and enforcement.

The following diagram illustrates the Trusted Publishing Network Architecture.

The Metamail Trusted Publisher Network guarantees secure content creation and delivery.

4 Commercial Applications

Product Registration

Email Marketing

Electronic Bill Presentment
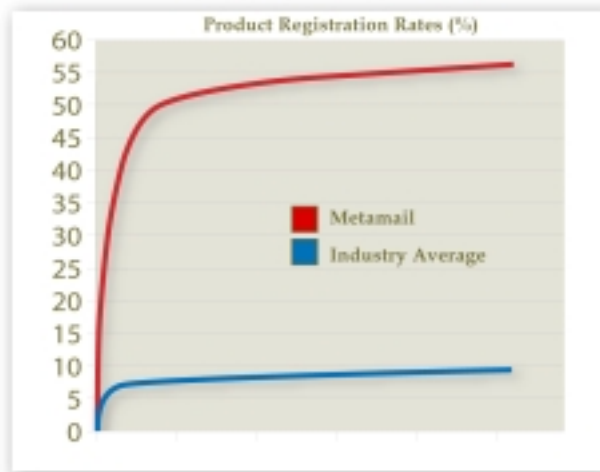
Product Registration - Closing the Loop

Metamail helps technology, consumer electronics, appliance manufacturers, and financial institutions expand their registered customer base, increase revenues, and enhance customer relationships.

Metamail's innovative Product Registration software dramatically increases customer registration rates, delivering up-to-date customer lists and profiles complete with permission-based email addresses.

Metamail automates the registration experience, providing consumers with a fast and convenient way to register new products and sign up to receive product related information by email. Metamail is designed for use with any Microsoft Windows application, computer peripheral or consumer product. Available as an integrated OEM (Original Equipment Manufacturer) software solution or standalone CD, Metamail can be easily added to any product. Metamail works even if users are not connected to the Internet at the time of registration.

Metamail provides integrated on & offline forms support for a wide range of OEM, CRM and e-commerce applications.

Metamail Boosts Product Registration

Metamail's next generation customer registration software has set a new industry benchmark with nearly two-thirds of all consumers choosing to register products featuring Metamail, a ten-fold performance increase over conventional paper-based registration systems.

*Metamail delivers registration rates **ten times higher** than any other solution.*

Email Marketing - Powerful Simplicity

As email volume continues to grow at an unprecedented rate, marketers are faced with the daunting task of maintaining awareness amidst a rising tide of inbox clutter.

With a look and feel of traditional direct mail, Metamail allows marketers
to re-create proven control packages – complete with items such as dynamically generated coupons and cross-sell teasers.

Metamail consistently outperforms all other email formats. Customer trials involving more than 40 million messages yielded a 5:1 performance increase over comparable HTML messages (see chart below).

Advanced Campaign Metrics

Metamail delivers a wealth of campaign data. Conventional HTML messages can only suggest whether a message has been opened and monitor click-thru rates. Metamail's XML-based campaign tracking technology goes far beyond this, allowing for the capture and recording of significant, detailed, user-permitted information, including whether a message has been opened, viewed, printed, forwarded and much more.

Metamail supports both online and offline campaign tracking. Metamail messages can be easily designed to gather a wide range of data for use in fine-tuning campaigns on the fly.
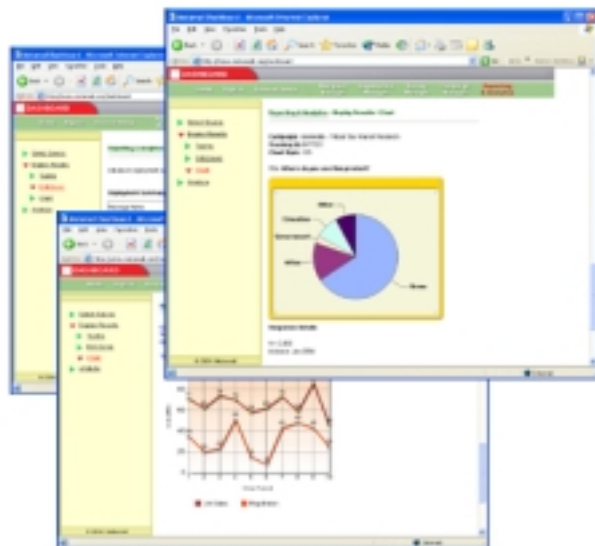

Metamail provides real-time online access to campaign data

Email Marketing - Database Integration

Metamail supports integrated forms and web services for a wide variety of business needs. The following illustrates Metamail's ability to streamline business processes, drive online revenues and enhance customer relationships with a single email.
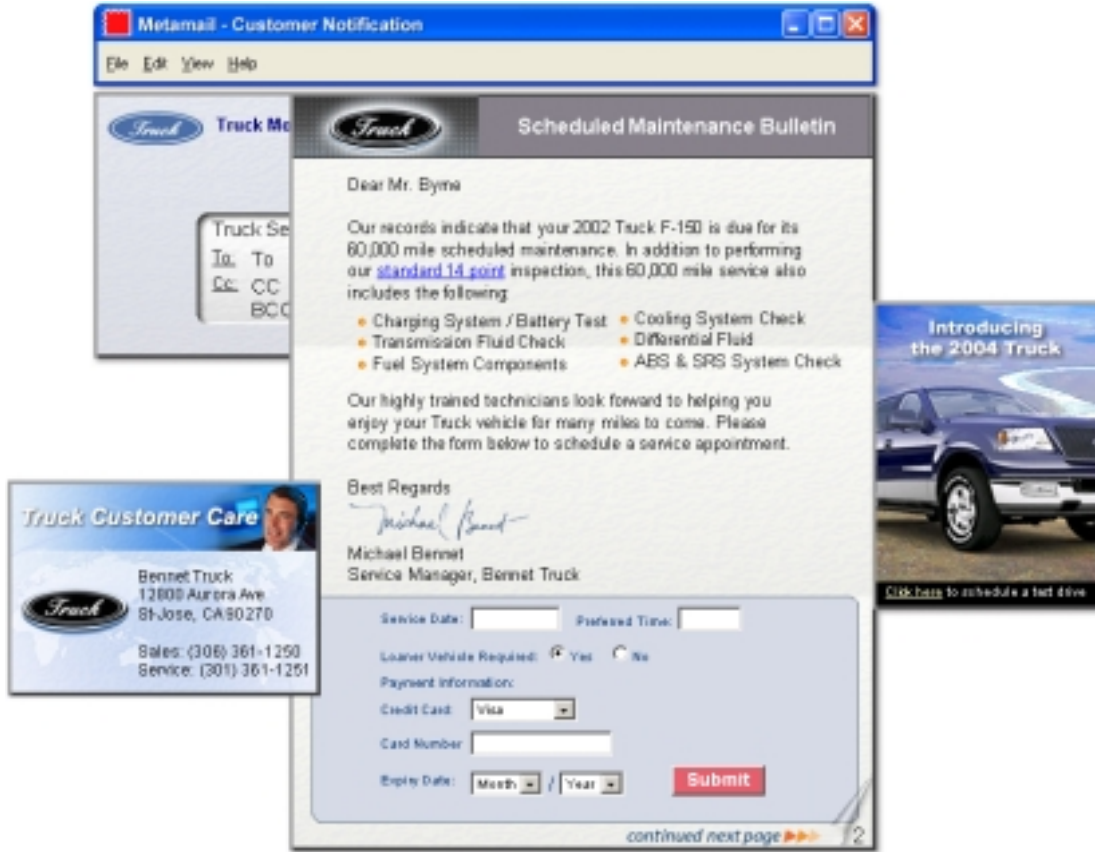
Sample email based CRM solution combining a database driven customer reminder message with integrated reservation, e-commerce, customer care and product marketing programs.
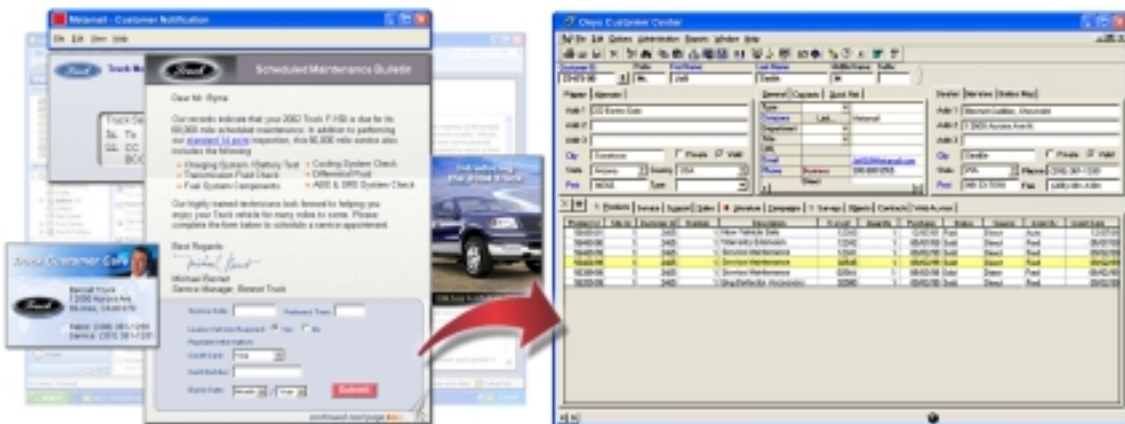
Metamail enables dynamic updating of customer records.

Electronic Bill Presentment

Metamail opens the door to new and exciting business applications, as well as old, familiar ones. Applications like electronic billing where traditional statements and time-honored business processes are combined with secure, industry standard billing solutions.

Consumer Challenge

Consumer adoption has long been the goal of Electronic Bill Payment and Presentment (EBPP). However, existing online solution providers face the daunting task of requiring consumers to master an entirely new billing environment. Metamail addresses this issue by seamlessly extending the web experience directly to the inbox where users are presented with a familiar and time-honored experience designed to mimic traditional paper-based business statements and documents.

Inbox Billing

Security is the first and foremost consumer concern when it comes to e-commerce of any kind. Metamail has been specifically designed to overcome these concerns by combining conventional billing procedures with industry standard web-based security solutions. Metamail's Trusted Publisher Network technology ensures that all Metamail messages are completely trustworthy, spam and virus-free.

A Metamail bill arrives in the recipient's inbox and when opened, presents the user with a secure login procedure before the bill contents can be viewed. This is done entirely within the Metamail document frame – without ever leaving the convenience and safety of the inbox.

Metamail is designed to leverage existing EBPP infrastructures. Seamlessly embedded within the Metamail bill is the company's existing customer login web page and associated SSL security. When the user logs in, the bill information is then delivered to the Metamail bill. As an XML-formatted document, Metamail can easily accommodate OFX or ebXML data. Metamail can also be programmed to respond to user's needs.

After logging on, the user's bill appears in a familiar paper format (as illustrated) within the Metamail frame. In addition, coupons and other promotional offers routinely enclosed with paper bills can be automatically generated and included with any Metamail-based statement.

Application Integration

With its XML-based message format, Metamail can offer basic bill analysis and organizer features directly within Outlook, including automatic reconciliation with personal accounting packages such as Quicken and MS Money.
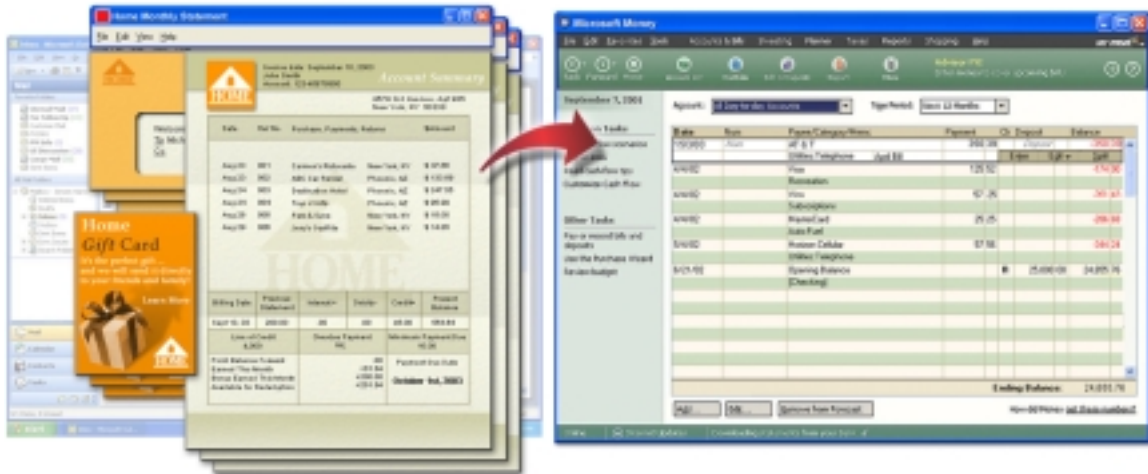
5 Core Technologies

Smart Frames

MetaTextures

Smart Frame Technology

Metamail enables content creators to effectively manage complex documents that routinely incorporate multiple components, including text, graphics, file formats, active media and attachments.

Our next generation publishing tools go even further, breaking down the barrier of traditional rectangular frames, letting you create new and exciting user interfaces. With Metamail, messages come alive, offering a whole new level of functionality and creativity.

At the heart of Metamail lies our unique Smart Frame technology, a highly advanced Frame Management System. This unique capability enables:

- **Interlinked Windows** - all windows in the document behave as a cohesive unit - moving, resizing and closing as a single entity. Documents are no longer constrained to a single-frame presentation mode.

- **Frame Control** - content providers have complete control over the location and behavior of interlinked frame windows. All frames are programmable and multimedia enabled.

- **Shaped Windows** - supports layering, masking, skins, animations and other advanced UI design features enabling the creation of irregular shaped window templates for use in a wide variety of business and consumer applications.

- **Rich Client User Interface** - by extending the display capabilities of web-based applications, Smart Frames provide web applications designers with a level of sophistication that rivals desktop applications.

Enhanced Document Presentation

Metamail Smart Frame technology enables secondary objects to remain attached to the main document at precise locations determined by the author. Although independent, each object will move and size with the entire document. And unlike annoying pop-ups, each object will disappear when the document is closed.

Smart Frames support a wide variety of media types and functionality, including Macromedia Flash, embedded browsers, HTML, forms scripting, and more. Combining precision layout with intelligent content management control, Metamail enables the development of new and compelling applications.

All Metamail documents and messaging applications are fully secure and protected by the Metamail Trusted Publisher Network.

Inbox Application Development Platform

Metamail's combination of advanced frame management, layout controls, XML file format, scripting capabilities, and forms support transforms the inbox into a powerful new application development platform.

Our next generation of smart client communication applications can combine multiple message elements and end-user features, including custom skins, layering, web services, content management, e-commerce, CD burning, printing, animation, chat, security and much more. Delivered directly to the user's inbox, these applications will provide consumers with a completely integrated experience without ever having to leave their inbox.

Preview new games, automatically tune your system, play online, or chat – all from within the inbox.

Smart Client Applications

In addition to Smart Frames, web application designers will benefit from being able to define new workspaces complete with floating and docking toolbars, menus and much more.
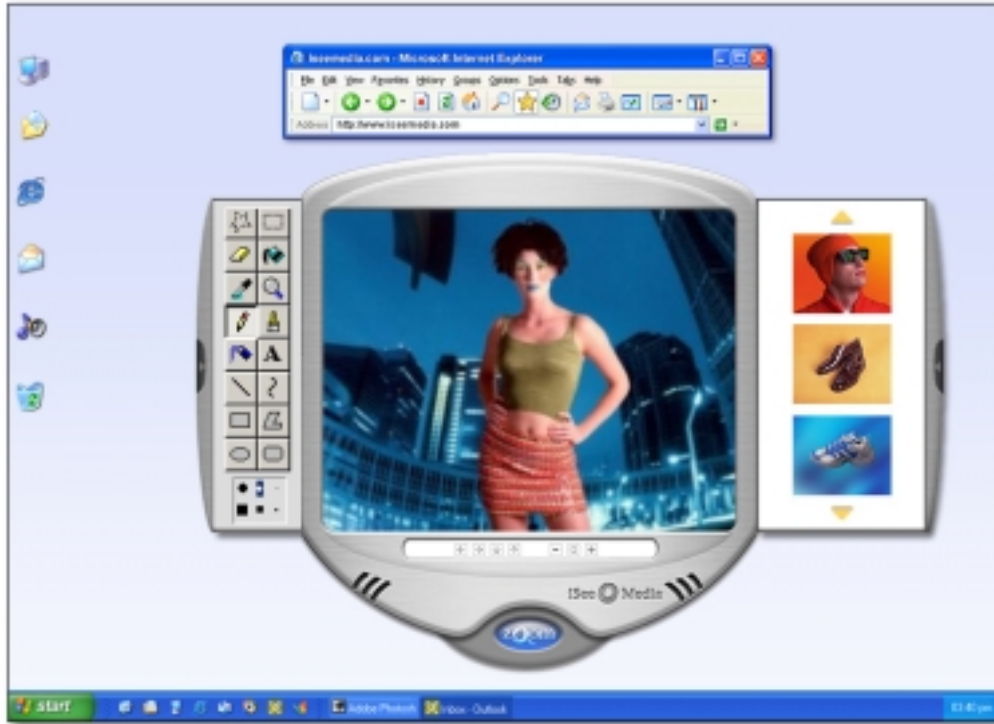
Capture the image, not the background – edit clip-art and other images directly from within your browser.

MetaTextures - Infinite Detail, Endless Possibilities

Metamail's content creation tools include an advanced, algorithmic-based texture generation and rendering system. Key features include; infinite resolution and detail, small file size, genetic texture creation, small memory footprint, real-time rendering, and hardware acceleration.

MetaTextures take document presentation to the next level with remarkable looking e-paper textured backgrounds.

MetaTextures can be used to enhance virtually any background, including business documents, 3D gaming environments and wireless applications.

Key Features:

1. **Infinite Resolution and Detail** - algorithmic generation of the textures means that a brick wall will look like a brick wall, no matter how close you get to it. MetaTextures are non-repeating and can provide infinite levels of detail. With MetaTextures, anisotropic filtering is a thing of the past.

2. **File Size** - MetaTextures are available in file sizes that are impossible to achieve with raster-based compression technology. The MetaTexture definition can be thousands of times smaller than an equivalent image represented through JPG or PNG technology.

3. **Shorter load times** - high resolution, high color-depth textures can burden the download package size. MetaTextures can significantly reduce this bottleneck.

4. **Skins** - user interface design is leading towards cleaner, slicker interfaces, with effects ranging from simple color ramps to glossy buttons and alpha-rendered moiré-patterns.

Metamail provides an advanced methodology and rich toolset for creating remarkable looking textures at a fraction of the bandwidth and memory costs associated with conventional imaging techniques. MetaTextures render very quickly (even when loading from a local cache) and can enhance the entire web experience, from simple browsing to thin-client .NET applications using web services. Wireless devices can benefit from the high resolution, minimal file size and memory footprint of MetaTextures.

Metamail provides an advanced methodology and toolset for creating realistic looking textures at a fraction of the bandwidth and memory costs associated with conventional techniques.

MetaTextures eliminate the pixelation and blurring traditionally seen with bitmap-based textures.

MetaTextures render very quickly (even when loading from a local cache) and can enhance the entire web experience, from simple browsing to smart client .NET applications using web services.

Wireless devices can benefit from the high resolution, minimal file size and memory footprint of MetaTextures.

Enhance Web experiences through dynamically rendered backgrounds without increased load time.

MetaTexture Editor

MetaTextures are developed using Metamail's patented, genetic-based algorithm creation and rendering techniques. Users create blur-free, non-repeating, resolution independent textures by combining the desirable properties of existing textures to create entirely new effects.

Imagine starting with a concrete texture, and applying rust, then cracks and finally mildew. The MetaTexture Editor operates in real time, allowing the designer to create a specific effect or explore new variations. The possibilities are endless.
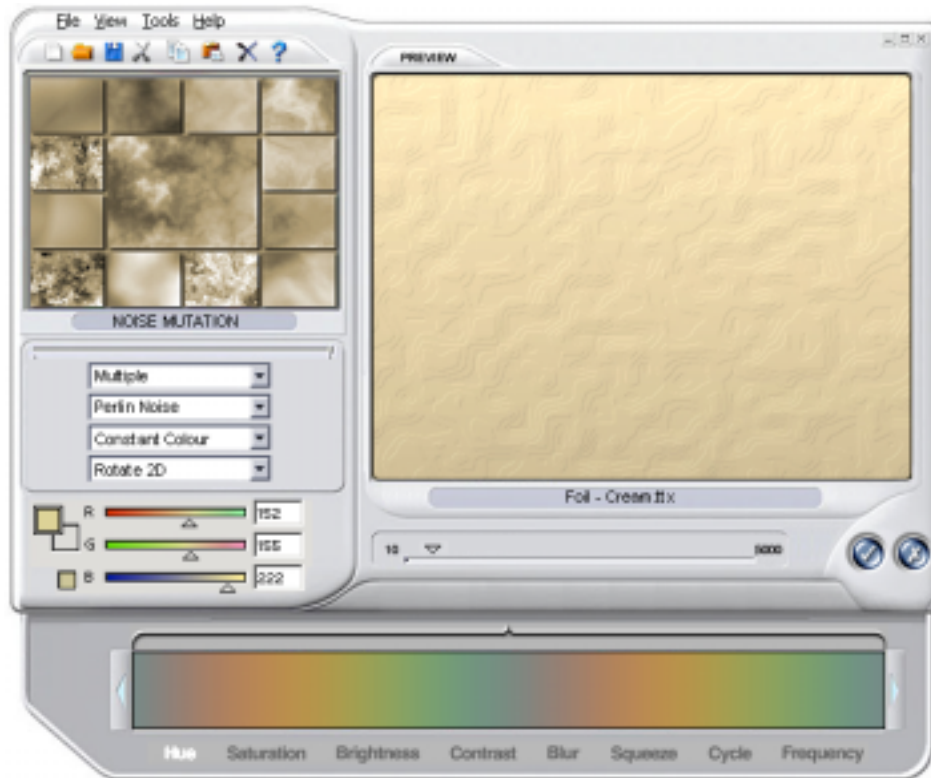
Genetic algorithms work behind the scenes letting users create new textures in real-time.

Extensions

The XML-based MetaTexture format was designed with extensibility in mind. For example, shape data can be included within texture definitions so that each trait can be applied to an arbitrary polygonal shape, allowing the MetaTexture to replace numerous textures or objects when used in conjunction with other technologies. A single MetaTexture might represent a wall complete with a medieval window.

Time and variable-based attributes can be added enabling animation effects such as realistic water-effects, thereby eliminating complex and expensive multi-texture animation techniques. Layering effects would allow for the creation of a gaming sky that could flare with hues of gold and red near the horizon at dusk, while showing pure cobalt blue on a cold sunny day.

Utilizing shape and time attributes, MetaTextures can be applied to user interface design elements such as skins and interactive buttons, all within in a single MetaTexture definition. The button state, for example, would define its shape, color and appearance.

In addition, MetaTextures can produce sound effects for use in audio applications and beyond.

6 Product Suite

Metamail Reader

Metamail Publisher

Metamail Enterprise Server

Metamail Reader

The Metamail Reader is designed for wide-scale integration and distribution by technology, consumer electronics, appliance manufacturers, and financial institutions alike.

Email Client Integration

The Metamail Reader supports popular email clients including Microsoft Outlook, Outlook Express, Netscape Mail, Eudora, and Web mail systems such as Hotmail and Yahoo.
The Metamail Reader ensures end users that all Metamail messages they receive are from a Certified Trusted Publisher, spam-free and trustworthy.

Campaign Metrics

The Metamail Reader's campaign tracking technology allows the capture of significantly more data points than any other messaging technology as shown in the table below.

Metamail supports both online and offline campaign tracking. Metamail message can be easily designed to gather a wide range of aggregate (anonymous) data for use in fine-tuning campaigns on the fly.

	Text	HTML	Metamail
Secure, encrypted content delivery			●
SPAM & Virus proof			●
Guaranteed message integrity (unbreakable links, layout, images, etc...)			●
Message analysis (open duration, page views, print activities, etc...)			●
Advanced metrics (system hardware/software profile)			●
Click-thru rates (trackable links)	○	○	●
Message open rates		○	●
True message open rates			●

Metamail Publisher

Metamail brings security, personalization, and traditional corporate branding to the inbox.
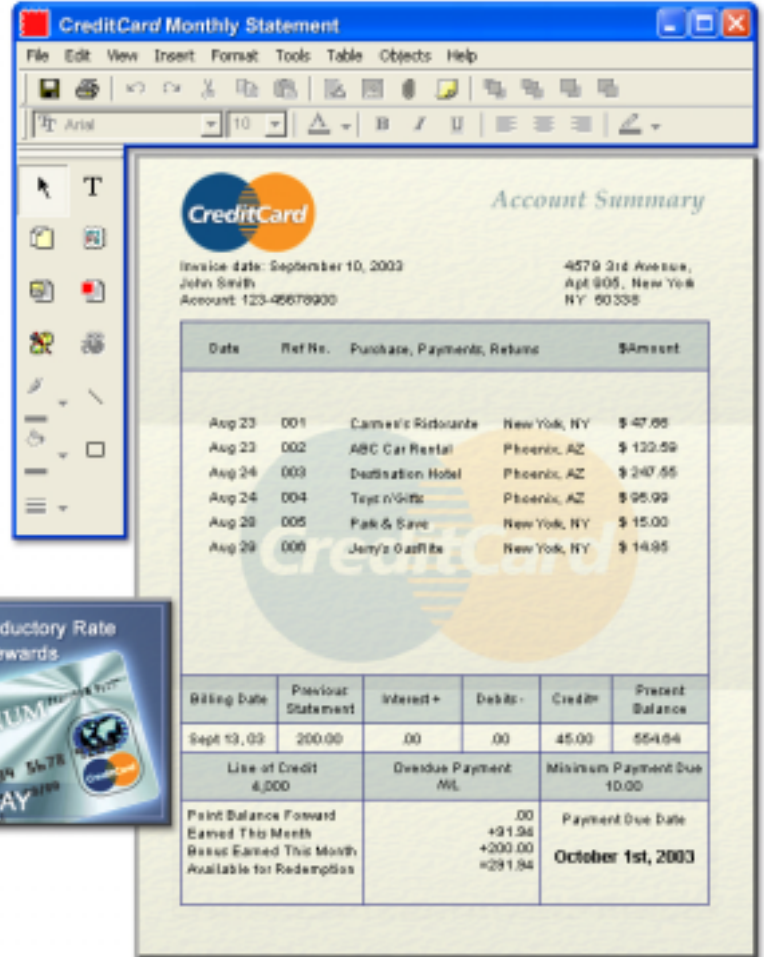
The first XML-based Email Publishing solution of its kind, Metamail publisher makes it easy to create professional looking, rich-media messages for a wide range on business and consumer applications.

Using Metamail Publisher, messages can be easily personalized with custom letterhead, watermarks, logos, signatures, and dynamic, eye-catching Metacards. Metamail supports popular industry standard messaging technologies and file formats, including streaming media.

Metamail messages look exactly as if they were delivered by regular mail, right down to the paper folds, page curls, textured stationery background, and familiar page layout. Unlike HTML email, Metamail messages can be created by non-technical designers and business users quickly and easily. Metamail Publisher provides stationery creators with intuitive design tools similar to those found in Microsoft Word.

Metamail Publisher uses stationery templates to help define the layout and appearance of virtually any type of email or document.

The Metamail stationery page is an ActiveX container which allows the seamless integration of popular online media components such as streaming video and audio, Flash, Shockwave, and more. Metamail Publisher provides stationery designers with the ability to embed an HTML window in any stationery or Metamail Smart Frame providing nearly unlimited design flexibility.

Metamail Publisher includes the industry's most advanced messaging security. Built-in encryption and anti-virus capabilities ensures users that every Metamail message is trustworthy from creation to inbox delivery.

Metamail Enterprise Server

Integration

The Metamail Enterprise Server is a key component of the Metamail Trusted Publisher Network solution. Working in tandem with Metamail Publisher, the Enterprise Server enables corporations to deliver the world's most effective, secure, and trusted messages.

The Metamail Enterprise Server is designed as a value-add to existing mission-critical corporate email infrastructures. The Metamail Server is a software solution that, acting as an SMTP mail proxy, is designed to integrate seamlessly with any email environment. Written in platform independent Java, the Metamail Enterprise Server is compatible with Windows NT-based and UNIX operating systems.

Email System without Metamail Enterprise Server

In a typical corporate email environment, messages are composed using standard graphics design tools, HTML editors and email clients such as Microsoft Outlook. The email server then processes the messages and sends them to the intended recipients.


Email System with Metamail Enterprise Server

When a message is sent, the Metamail Enterprise Server intercepts the message, analyzes it, applies the appropriate stationery and attachment (if required), then passes the processed message on to the email server for delivery to the intended recipients.

System Workflow

The Metamail Enterprise Server transforms ordinary email into visually appealing; information-rich messages delivered in the form of traditional paper-based mail, as well as wide range of other display formats.

Using Metamail Publisher, messages can be easily personalized with custom letterhead, watermarks, logos, signatures, and dynamic, eye-catching *Metacards*. Metamail supports a wide range of industry standard messaging technologies, including streaming media.

HTML Campaign

MMF template uploaded to Metamail Enterprise Server

Metamail Enterprise Server
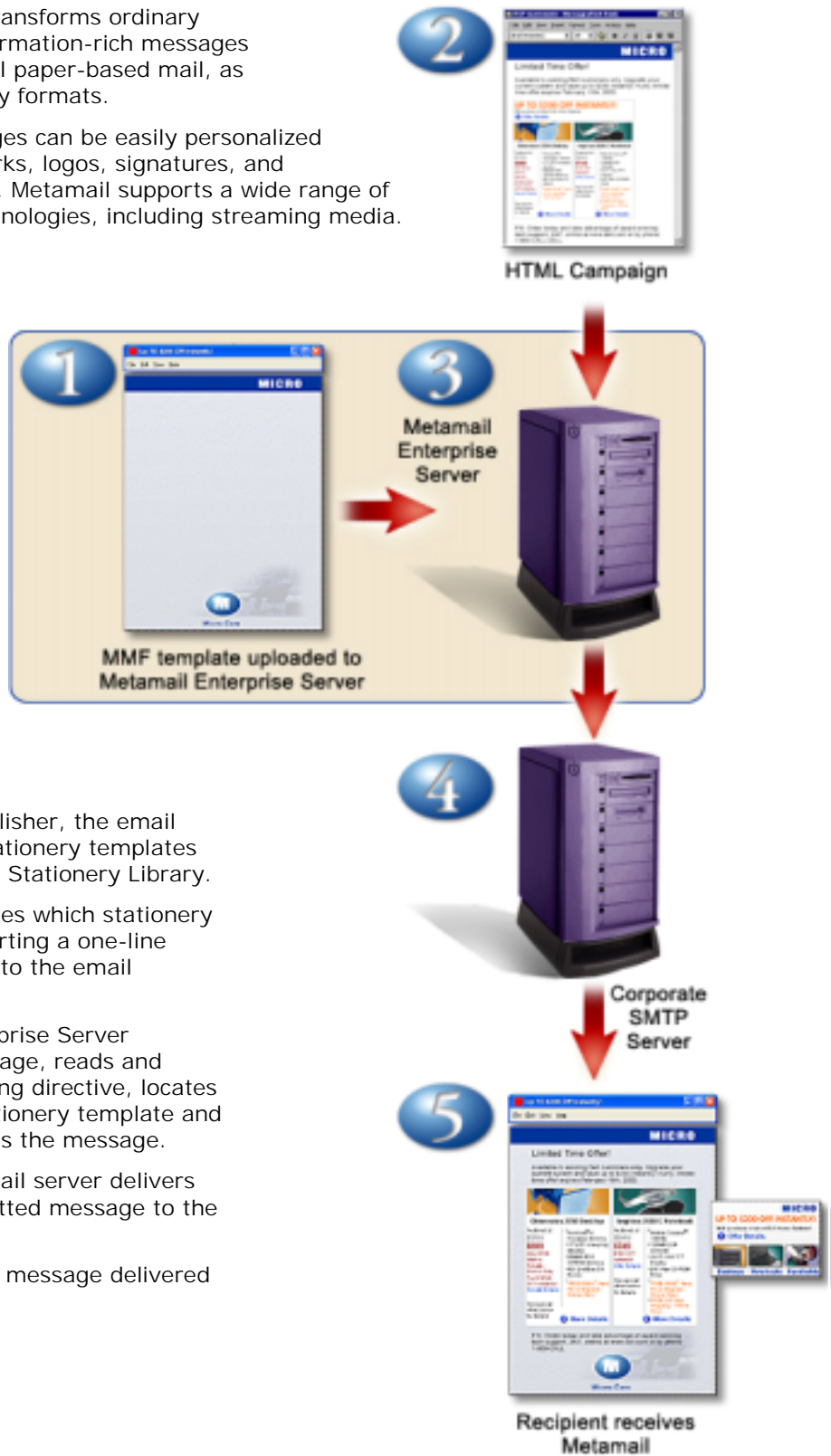
1. Using Metamail Publisher, the email designer creates stationery templates for uploading to the Stationery Library.

2. The designer specifies which stationery will be used by inserting a one-line directive (ID tag) into the email campaign message.

3. The Metamail Enterprise Server intercepts the message, reads and removes the branding directive, locates the appropriate stationery template and automatically brands the message.

4. Corporate SMTP email server delivers the Metamail formatted message to the recipient.

5. Metamail formatted message delivered to recipient's inbox.

Corporate SMTP Server

Recipient receives Metamail

Branding Process

Metamail message templates are created using Metamail Publisher and exported as Metamail Server Files (.SER). These SER files are then uploaded to the Metamail Enterprise Server which acts as a SMTP mail proxy. A Metamail Server file contains instructions that guide the Metamail Enterprise Server through the branding process, merging input messages (MIME Format) with Metamail Stationery (XML) to create a Metamail Message (XML).

E-mail Client/Generator
Points to Metamail Enterprise Server instead of SMTP Server.

1. Compose Message
2. Insert Directive
3. Send

Metamail Publisher
Use the Stationery Editor to create the Stationery.

1. Design Stationery
2. Inset Cursor Position
3. Insert Cursor Position Tag
4. Expert to SER Format

MIME Message

To Cc Bcc
From
Subject
Body Text
Attachments
Directive [MMF UseStationery=name.ser]

SER File (Stationery Export, XML File)

MIME Header

MMF Attachment + Tags
Standard MMF file, marked as a "stationery" complete with all layout. Also includes additional Metamail tags that tell server where to insert info from original message.

Stationery Attachments
Referenced in MMF file, completely written out in SER file.

Metamail Enterprise Server

1. Metamail Enterprise Server creates new XML-based MMF file based on SER.

2. Searches SER for Metamail tags and substitutes the appropriate information from the sent MIME message. (For example, replace the [MMF $To] tag with the "To" recipient names.)

3. Locates the cursor position tag and substitutes it with the body text from the sent MIME message.

4. For each attachment in the sent MIME message, updates the attachment count, writes the full attachment out in the MMF, and inserts attachment icon into the designated "other attachment" region specified in the SER.

Contact Information

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