



## Eliminating Paper-Oriented Forms

a White Paper prepared by:  
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### OVERVIEW

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#### Purpose

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The purpose of this white paper is to show how any organization can obtain substantial savings by converting from paper-based form-processing methods to the Groeware **eXFORMA** Process Automation System, a web-based software solution that creates, deploys, and automatically manages the data-entry, routing, tracking, and approval processing of online electronic forms. At the same time, this paper explores the features and technologies used by **eXFORMA** to achieve these savings by exploring a step-by-step implementation of the system.

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## THE SERVICE DELIVERY CHALLENGE

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Yesterday's darling is today's burden: ERP systems. These costly and complex systems that handle core business functions such as Financials, Distribution, Manufacturing, Human Resources, and Payroll have endured an intense amount of scrutiny over the recent years both for their costs and their failure to deliver justifiable business value.

Despite spending millions of dollars on these systems, organizations are still relegated to the use of manual, paper-oriented processes to fulfill various core business functions that their ERP systems do not provide or do not provide correctly (due to business changes such as a merger).

A solution most organizations deploy is the use of paper-oriented forms. These forms are either paper with handwritten data entry or electronic documents that users fill-in by typing or printing and handwriting data entry. According to the Gartner Group, the cost of processing forms in the U.S. exceeds \$15 billion annually with the cost of document scanning now reaching \$.08 per page. This is not surprising given that business processes that use paper-based forms are inefficient. Here are some areas for improvement:

- ❖ Time wasted using incorrect or outdated forms and delays in locating the correct form
- ❖ Time spent filling in the same information, over and over
- ❖ Data-entry errors and miscalculations followed by error corrections and corresponding delays
- ❖ Improper use of forms by ineligible employees
- ❖ Illegible forms
- ❖ Re-entry of the data contained on a form into software applications
- ❖ Incorrect form routing and failure to obtain the correct signatures and approvals for prompt action
- ❖ Delays caused by the absence of authorized individuals or co-contributors
- ❖ Costly printing, storage, dissemination, and disposal of outdated forms

The challenge for many organizations is that the budgets required to integrate these business processes with their existing ERP investments has been eliminated due to budget restrictions and the failure of these systems to deliver justifiable business value. Introducing new business processes into an ERP system that has failed to deliver on its promise is simply not an option to consider. In fact, in many cases such as in mainframe-based ERP systems, organizations are opting to replace them with newer, easier to implement and manage web-based systems.

## From ERP to the Web

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The influx of new technology and standards as a result of the Internet revolution has introduced new, powerful, feature-rich and standards-based products into the market. One such product – **eXFORMA** – tackles the challenge of automating business processes using powerful, simple-to-use, web-based technology.

## The eXFORMA Solution

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**eXFORMA** is a business process automation platform that allows organizations to efficiently develop web based service delivery applications that integrate with their ERP investments simply, easily and without the need for programming. For the business user it provides an easy to use browser-based interface for rapidly building powerful electronic forms that can automate business processes. For the IT professional it provides a powerful forms engine that can be plugged into company wide portals to serve up electronic processes throughout an enterprise. It replaces the use of paper forms and the routing of form documents using email as a business process. In doing so, it transforms every aspect of processing forms from creation, printing, storage, and distribution to filling in, routing, signing, checking, obtaining authorizations,

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## White Paper – Eliminating Paper-Oriented Forms

and making available the valuable data contained on forms to mission-critical and business-critical software applications. In accomplishing this task, **eXFORMA** delivers the following benefits:

- ❖ It eliminates repeated data entry & re-keying. It has built in features to pre-fill forms using data from existing databases. This improves both the speed and accuracy of the data entry process.
- ❖ It allows you to capture data in real time and then have that data forwarded to the appropriate departments for further review, approval, processing or to capture additional information. And it does so with a web-based, browser interface. Fax traffic doesn't slow information down and it doesn't get lost in the e-mail shuffle that many organizations suffer from. It also provides a way for users to check the status of their request so they always know what's going on.
- ❖ Ensure privacy, security and auditability. It has a robust user management system that provides multiple layers of security in terms of who can have access to the forms and who can see the data. Submissions are stored with their forms in a secure place and auditors can with the appropriate security clearance access the system to do regular system audits.
- ❖ Consolidate & re-use existing forms. It provides a forms repository where forms can be stored and easily accessed. Forms can be broken down into templates and sub-templates that can be used to assemble new forms much more quickly. Form designers can develop new forms with ease – even for ad-hoc requirements – using a browser.
- ❖ Instant availability. Since forms do not require a client side application.- it is 100% server based – forms are instantly available to your enterprise, your business partners or the entire Internet - making the implementation of the new business process extend across departments, individuals or organizations.
- ❖ Open standards. **eXFORMA** has been designed from the ground up to use every applicable open standard. This allows the system to be able to seamlessly integrate with virtually any technical environment with minimal effort. The system was built using J2EE and XML and provides advanced integration options using Web Services and portal integration.
- ❖ Formalize forms processing. With a sophisticated, feature-rich business process management engine that has been integrated into the platform, **eXFORMA** can model very complex business processes that incorporate data flow between individuals, between systems and even across organizational boundaries.

## A PHASED APPROACH TO CAPTURING THE BENEFITS

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Once an organization has decided to automate business processes with **eXFORMA**, they are capable of automating these processes faster than ever before. Groveware has found that a combination of classroom training with hands on workshops allows our customers to gain the skills they need to begin to use the system effectively. Once the system is operational, organizations can start to capture the benefits described below.

- ❖ Phase I – Basic Online Forms
- ❖ Phase II – Intelligent, Online Forms
- ❖ Phase III – Intelligent, Online Forms with Notifications
- ❖ Phase IV – Intelligent, Online Forms with Business Process Management

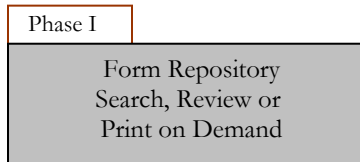
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## Phase I: Basic Online Forms

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As the simplest and easiest implementation, the first phase enables organizations to create data capture forms and process the information without the need for paper. Here are the follow

- ❖ Retrieve electronic forms stored in a central online repository.
  - Users only see those forms they need to work with based on their user profile or role within an organization
- ❖ Print out blank forms as required
- ❖ Fill in the forms
- ❖ Review and manage the form submission data for further processing



### Example Uses

- ❖ Surveys
- ❖ Registrations

### Benefits

#### *Centralization*

In a Phase 1 implementation, **eXFORMA** provides two key benefits that deliver immediate value. The first benefit is the creation of a central repository for all forms including: benefit and claim forms, purchase orders, time sheets, time-off requests, expense reports, and employee requisitions, just to name a few. Forms are categorized based on three main categories, which include: Private, Internal, and External. Users has access to those forms based on a powerful user management system where administrators can control through a permissions based process which forms each user can see. Once there, they can be managed, updated, and removed as needed. With a central repository of electronic forms, there are no more questions about using the latest version of a form. Just as important, a central repository of forms eliminates the expense of printing, storing, and distributing large quantities of forms that have a limited shelf life. Furthermore, it eliminates the waste of collecting and discarding them when they are replaced or changed.

#### *Access*

The second benefit of a Step 1 implementation is immediate worldwide access to the online forms regardless of the time of day or the geographic location of the user. Users will have access to those forms based on their permissions and/or role in the company and can simply open up the appropriate form, print it on demand if required or fill it in online and submit it. This eliminates the time and cost of distributing forms by fax or by mail. As a result, there is a tremendous increase in convenience for everyone involved.

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## Savings

An organization that has 500 employees can save approximately \$6,000 per month, or \$72,000 per year, with a Phase I implementation of **eXFORMA**:

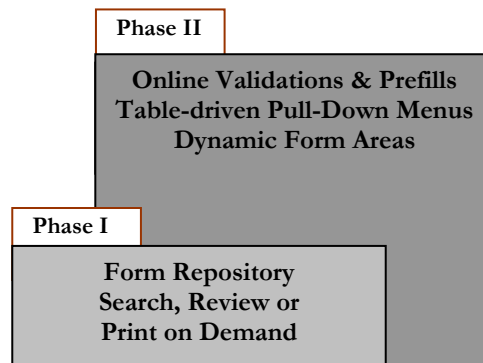
500 employees x 6 form submissions per month	= 3,000 form submissions
Cost of each form (printing, storage, and disposal)	= \$2
3,000 forms per month x \$2 per form	= \$6,000 per month
\$6,000 x 12 months	= \$72,000 per year

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## Phase II – Intelligent, Online Forms

Businesses that use forms regularly, often require information to be completed that is currently available in databases within the enterprise. This includes data for pre-filling forms as well as validating information on a form.

This phase introduces intelligent, online forms that have the ability to validate and pre-fill information based on database tables. In addition, forms are dynamic and respond to user input to allow forms to be completed intuitively and with the minimum effort.



## Example Uses

- ❖ Expense Reports
- ❖ Purchase Requisitions
- ❖ Employee Self-Service
- ❖ Performance Appraisals
- ❖ Budget Review
- ❖ Work Orders

## Benefits

### *Accuracy*

**eXFORMA** has the ability to validate information entered reducing the need for manual intervention. In addition, forms can automatically be pre-filled with data using database information increasing the overall accuracy of the data submitted. As an example, an employee submitting a work order would select an account code from a drop-down menu that has been

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## White Paper – Eliminating Paper-Oriented Forms

dynamically generated from the account codes stored in your corporate financial system. As a result, the correct accounts are charged eliminating costly errors and the need for corrective action.

### *Efficiency*

Form Filling - Since **eXFORMA** pre-fills forms with information already available in data stores, there is less data entry required. In addition, these dynamic forms only require the user to enter information necessary to complete the task. This improves the efficiency of collecting the data and increases adoption since users have less work to do.

### *Form Creation*

Each time a user creates a new electronic form, **eXFORMA** has the choice of either creating a form from scratch or pulling from a library of sub-templates which can automatically fill in personal information that employees typically repeat on every form such as name, department, etc. This saves valuable time and prevents mistaken entries. In addition, **eXFORMA** has validation features that can be enabled at the field level to ensure data is entered correctly. Similarly, **eXFORMA** performs mathematical calculations and excludes improper entries. For example, if an employee is making a vacation request, **eXFORMA** can verify that the dates are correct and that the correct duration of time is not exceeded. As a result, employees avoid making mistakes that cause processing delays and waste time in the review and re-submission process.

### Savings – Phase II

An organization that has 500 employees can save an additional \$3,000 per month, or \$36,000 per year, with a Step 2 implementation of **eXFORMA**:

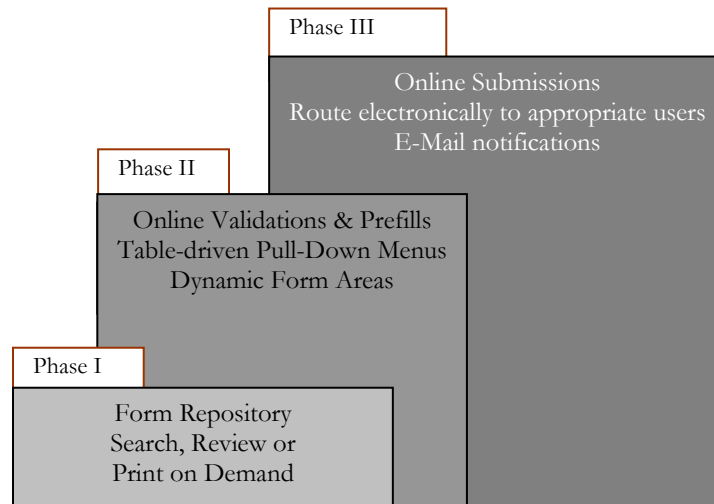
500 employees x 6 forms per month	3,000 forms
10% require corrective measures	300 forms require corrective measures
\$10 per corrective measure	\$3000 for corrective measures per month
Yearly costs for corrective measures	<b>\$36,000 / year</b>

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## Phase III – Intelligent, Online Forms with Notifications

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**eXFORMA** has the ability to route completed forms automatically to the correct individual or department. The system can notify those individuals and departments that information has been submitted and requires further processing. Information is sent electronically and instantaneously, with email notifications eliminating the manual routing process.



### Examples

- ❖ Timesheets
- ❖ Sales Forecasts
- ❖ Expense Reports
- ❖ Purchase Requisitions

### Benefits

#### *Automated Routing of Information*

When employees or other users finish filling in their forms and the forms have been validated, they can submit their forms with a click of the mouse. This automatically routes the form to the correct recipient without requiring additional recipient information. At the same time, the submission data is archived in **eXFORMA**'s data base where it can be access as required. **eXFORMA**'s user management system controls who has access to submission data based on the permissions they have been granted.

#### *Instantaneous Availability of Data*

Once a form is submitted online, the data on the form is instantly available to various departments and to their applications. Data-entry and research tasks are minimized because once an employee has entered the data for the first and last time, it is available when needed to accounting, claims processing, purchasing, and human resource departments. Users of content and document management systems can search the archives for stored files and retrieve them instantly. Consequently, organizations save valuable time and resources.

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**Savings**

An organization that has 500 employees can save an additional \$2,887 per month, or \$34,650 per year, with a Phase III implementation of **eXFORMA**:

**Annual savings from automated data-entry:**

1500 forms per month require 5 minutes each for redundant data entry	7,500 minutes = 125 hours
Divide 125 hours by number of hours per month (160)	78% of an FTE
78% of a data-entry FTE's \$30,000 annual salary	<b>\$23,400 / year</b>

**Annual savings from automated archiving and research:**

50% of 3000 forms are configured for automatic archiving	1500 Forms
5% of the archived forms require retrieval each month	75 Forms require retrieval
Per form retrieval = \$937.5 per month	\$12.50 per form retrieval
Total monthly savings from retrievals	\$12.50 * 75 = \$937.50
Yearly savings	\$937.50 x 12 = <b>\$11,250 / year</b>

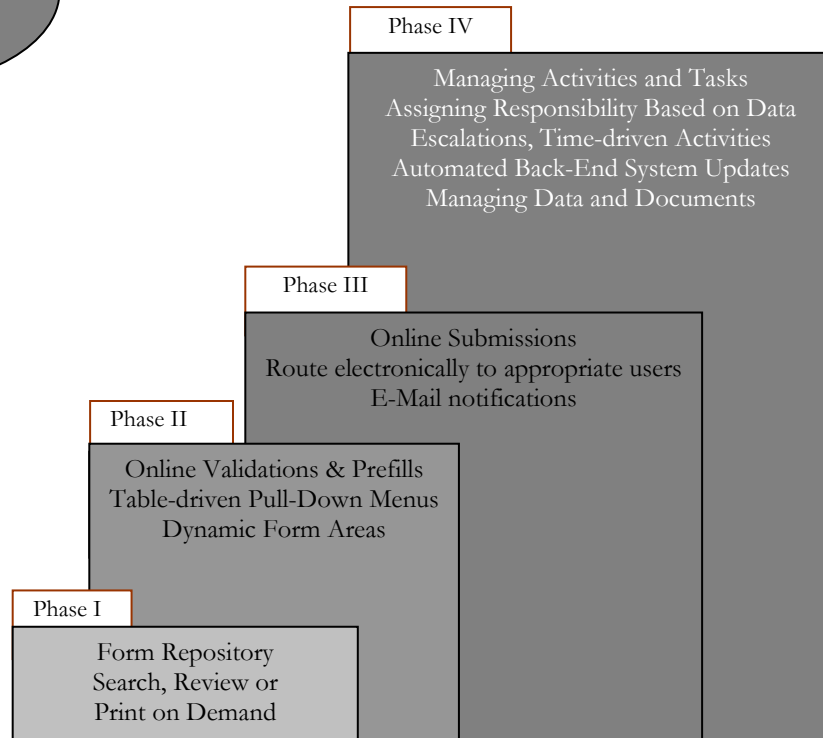
**Phase IV – Intelligent, Online Forms with Business Process Management**

In this phase, **eXFORMA** utilizes sophisticated process-automation capabilities to keep complex, business-critical processes moving forward. For example, if a series of forms must be submitted in complex business process that includes the involvement of several people and systems, **eXFORMA** possesses the capability of automatically engaging various individuals, groups and back-end systems at various points in the business process to collect, review, update, escalate, and process information based on individual data elements collected, data from systems, time and business priorities. This process automation eliminates delays, data re-entry, enforces approvals and escalations and incorporates back-end data interaction throughout the process.

The automated business process incorporates the following capabilities:

- ❖ Initial data collection of structured data and content using intelligent forms
- ❖ Attaching and/or embedding formatted content and documents
- ❖ Multi-part forms automation
- ❖ Multiple forms automation
- ❖ Shared work queues to support load-balancing among work groups and departments
- ❖ Inter-departmental facilitation of human-to-human and human-to-system interaction
- ❖ Time-based information flow for escalation and scheduled activities and tasks
- ❖ Information routing, tracking and auditing
- ❖ Multiple systems interfacing with data collection
- ❖ Multiple systems receiving predefined data elements in the process
- ❖ External process initiation
- ❖ Business rules applied to individual values received or processed
- ❖ Ability to enable, disable or modify a business process within another business process

Over  
\$377,000/Year  
For a 500-Person  
Organization



### Example Uses

- ❖ Risk Management
- ❖ Security Systems Management
- ❖ Doctors Notes
- ❖ Course Registrations
- ❖ Engineering Change Orders
- ❖ Insurance Claims
- ❖ Loan applications
- ❖ Permit Processing
- ❖ Sales Order Processing

### Benefits

#### *Inter-Departmental and Inter-Organizational Automation*

Many businesses require that information flow between departments or across organizational boundaries as it requires processing. Traditionally, the process is interrupted by re-keying, transcribing, routing, approving, incorporating data from other systems/people. By automating the entire process across boundaries, significant time and effort is saved and costs reduced from the interruptions in the process.



## White Paper – Eliminating Paper-Oriented Forms

### Optimizing the Business

By implementing your business processes in **eXFORMA**, your business logic and corporate intellectual capital is captured. Your performance as a business can be measured and reported and optimizations can be determined. These optimizations lead to an improved business logic and increased intellectual capital making your business more competitive.

### Flexibility

Since the process is defined in a web-enabled system, changes to the business or relationships that affect the business processes can be accommodated easily and efficiently. Thus as businesses go through periods of changes (downsizing, mergers, restructuring, etc.), **eXFORMA** can easily adapt the changes roles and responsibilities within the organization and manage new responsibilities.

### Integration

Accessing and integrating with multiple systems throughout a business process and facilitating the collection and review of information already available greatly reduces the time to complete various tasks and ensures that the *context* of the business process is maintained throughout the individual tasks. This context involves people and systems and eliminates errors and ensures that the people and systems are acting on the correct data. The effects of forgotten activities and misplaced documents can be eliminated since the information is tracked and tasks monitored. Incomplete tasks are easily identified and resolved with affected systems updated.

### Auditability

Getting the work done is important but proving the work was done is now a corporate priority. New laws are mandating that companies provide the ability to audit the flow of information. Sarbanes-Oxley is such an example.

Since **eXFORMA** monitors each action and logs the action into a repository – an action being the completion of the task and the data collected or updated – companies can now report on each individuals performance and hence on the performance of the organization in meeting its obligations. This auditability can be applied to legal mandates, service-level agreements with customers and performance monitoring.

### Savings

An organization that has 500 employees can save an additional \$18,750 per month, or \$225,000 per year, with a Phase IV implementation of **eXFORMA**:

#### Annual savings from automated business processes:

3000 forms per month initiate a business process	3000 submissions
Time spent tracking status and managing the activities (voice mails, emails, face-to-face, phone calls, etc.)	On average 15 minutes per submission
Total lost time	45,000 minutes = 750 hours
Divide 500 hours by number of hours per month (160)	3.125 FTE's
4.7 FTE's @ \$50,000 average annual salary	<b>\$235,000 / year</b>



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### Cumulative Savings from the Phased Approach

The cumulative savings achieved in phases one through four are significant. An organization that has 500 employees can save more than \$350,000 per year with **eXFORMA**.

Cumulative Annual Savings	
Phase I	\$72,000
Phase II	\$36,000
Phase III	\$34,650
Phase IV	\$235,000
<b>Total Savings</b>	<b>\$377,650</b>

In summary, **eXFORMA** from Groveware is helping organizations to enable electronic service delivery via the web quickly and cost effectively. Consistent with other industry estimates, automating paper based processes can achieve cost savings in excess of \$100 per form. If you are a large organization processing thousands of forms annually, the savings can be staggering.

**eXFORMA** from Groveware is helping organizations like NASA improve collaboration, more effectively share knowledge and expertise, and helping them to minimize risk. We invite you to take a closer look at how can help your organization reduce costs and improve operational efficiency.

