

## **I. Workflow and Process Analysis**

### **A. Assessment of Objectives and Project Scope**

Before any effective forms design effort is made, the prudent forms professional studies and analyzes the workflow supported by the form(s). This analysis considers the likely interfaces and impacts, both routine and exceptional, which can be expected to occur during the use of the form(s).

### **B. Fact Finding**

Since assumptions are naturally prone to error, a thorough search and evaluation of actual situations and existing environments helps to assure that subsequent decisions are realistic and based upon fact. When gathering facts do not get into discussions of why things are done. That question is postponed until we get to analysis, at which time it becomes the most important question.

#### **1. Questions**

General rule of thumb: Direct questions to the person who actually performs the work to describe what is done and how it is accomplished. Managers often possess only a cursory overview of the functions supported by the forms. Those who use the form (or will use a new form) are best equipped to explain/describe reality.

#### **2. Methods**

Various methods can be employed by the analyst. Examples include: observation of the work s it is being done by those who fill-in the form; examination of written procedures; focus group discussion of the "ideal" function(s) of the form; solicitation of comments from those who receive the filled-in form; etc.

#### **3. Basic Functions of Business**

Identification and examination of the reach of the form(s) and the repercussions of its use across the various affected business systems. (Reference : "The Business Forms Handbook" — current edition — DMIA)

### **C. Data Organization**

Data is defined as discrete facts and metrics that serve as the raw materials for the development of information. The proper and appropriate organization of that data results in useful information.

#### **1. Process Charting / Mapping**

Often, the easiest way for everyone concerned to understand clearly the steps within a process and how they are performed, including all the systems and players involved, is to view a linear chart of the whole process. Such a chart includes not only who does

what, when and where, but also maps where delays and repetitive steps may occur. Such a chart also reveals critical chances for error and identifies streamlining opportunities.

## **2. Recurring Data Analysis**

Examination of the data elements that occur most often, the errors that are most apt to happen, and the most often encountered delays and reworks provides the basis for process clarification and work simplification.

## **3. Pareto Analysis**

"The Pareto Principle states that only a 'vital few' factors are responsible for producing most of the problems (cause and effect). This principle can be applied to quality improvements to the extent that a great majority of problems (80%) are produced by a few key causes (20%). If we correct these few key causes, we will have a greater probability of success." EGI-2003

## **4. Other**

Special attention should be given to the usability of the form by the person who reads (receives) the completed form; not just to the person who writes (fills in) the form.

## **D. Analysis**

After defining the scope of the project, gathering facts, and organizing the data, it's time to do an analysis of the meaning of the results of those efforts.

### **1. Questions**

The questioning method involves asking the factual questions (what? who? when? where? and how?), along with the most important question for analysis which is "why?" First we ask it along with the question "what" to justify the existence of the form. If we ask "what" (identifying the form) and then we ask "why" and there is no reason we should eliminate the form. A further test asks what the result/impact would be if the form did NOT exist. (Confirms need.)

When it has been determined that there is a good reason for a form the next questions should be when and why - where and why - who and why. The results of these questions lead to discovering that the work is being done at the wrong time. Or in the wrong place or by the wrong person and these conditions can be corrected.

The last pair of questions to ask is how and why which leads to refining the writing methods, often with improved equipment. But it is most important to follow this sequence in questioning. Too often people, enamored with equipment, focus on how the form is written first which can lead to forms that are unnecessary being filled in at the wrong time, in the wrong place by the wrong person, using the finest - and often most expensive - equipment that money can buy.

## **2. Methods**

Methodology and step sequences may differ among analysts, but the ultimate purpose of the analysis process is to understand the task(s) to be performed by the form tool(s).

## **E. Solution Development**

Finding the optimal outcome among all possible business solutions is the goal of the analysis. The pros and cons of each potential solution should be weighed objectively and the best solution should be selected, developed and implemented. Care must be given to honor all organizational policy and legal requirements, including those related to Section 508 (user accessibility standards).

## **F. Recommendations**

It is not unusual for a forms analyst to be required to present the results of an analysis project, along with their considered recommendations, to the directly affected user community and/or to functional management prior to beginning implementation of a form system design project.

### **1. Proposal Preparation**

Preparation of the proposal should include all pertinent information accumulated during the analysis process. Most of it will be held in reserve to provide detail only upon request, but all should be considered when developing the final proposal.

The written proposal that will be given to management at the time of the presentation should, however, not exceed one page. It includes only conclusions, none of the detailed effort that arrived at those conclusions. We are not trying to tell management how hard we worked. Rather we try to tell management what they should do.

### **2. Presentation**

Plan the presentation carefully, being mindful of the dynamics of the expected audience. Keep the presentation simple, clear and uncluttered. Provide detail when requested. Don't oversell (shut up and sit down when you've said what needs to be said)! Include a target completion date, whenever appropriate. Offer criteria for measuring project success.

## **G. Implementation**

Once the analysis is done and the decision made as to which alternative solution is to be implemented, it's time to make it happen.

Whether the end product is intended to be a paper form, an electronic form, an Internet form or some combination of the formats, pre-and post-handling issues must be addressed.

### **1. Implementation Plan**

Implementation will not be an automatic occurrence. It must be planned. When will the form(s) be made available? Where and how may they be obtained by the users? In what format(s) will the user find them?

If electronic, what server will house the form? The database(s) that may be accessed must be identified and made accessible. System interfaces must be planned, installed and tested. Implementation timing must be determined and published.

## **2. Installation**

Approved forms must be made available to the using community. If they are paper, users must be informed about how to obtain stock. Stock levels and reorder points must be established. If they are electronic, users must be told the server addresses or URLs where they may find the forms. Testing must confirm access.

## **3. Documentation**

Documentation should address three (3) areas.

1. Development documentation describing the thought processes of the analyst/designer in constructing the form.
2. Clear instructions for the user on how to complete the form, where to go with questions, and how to request form changes.
3. Policy & procedural information on how the form fits into the business system(s) it addresses.

## **4. Training**

Needless to say, the ideal form is self-instructing. In the event, however, that detailed training is appropriate, it should be offered in the way(s) most applicable to the situation, taking into account the complexity of the form(s) and the level of expertise already in existence among the current and prospective users.

## **H. Follow-up and Evaluation**

At a predetermined interval following full implementation of the form(s), a check should be made to validate the usability and effectiveness of the form among all users (writers and readers). Any modifications that are identified should be implemented either immediately (if critical) or at a scheduled interval (if routine). If changes require new instructions, they must be provided to all users when any changes are introduced. Documentation and interfaces should also be updated at this time.

# **II. Design and Development**

## **A. Design Elements**

Good forms design entails far more than simply adding lines and text to a blank page (or screen). It consists of a number of essential elements, generously interspersed with optional features and enhancements, all of which are intended to ease the tasks of both the writer and the reader of the form.

### **1. Graphics**

Graphics, including company logos, diagrams, charts, photographs, screened areas, special font treatments and other such visual devices, when used with discretion and purpose, can add value to both the completion (writing) and recovery (reading) processes associated with form use.

### **2. Use of Color**

Color offers benefits and pitfalls to the forms designer. Minimal use of color (spot color) is useful to highlight an area of unusual importance. Using too much color, on the other hand, tends to lose all the benefits of the second (or subsequent) color(s). Focus is the point of color. When too many points of focus are presented, the form user fails to see any of them as important. White space is often even more effective in guiding the user's eye than color. Clutter detracts from the form's purpose and diminishes its value. White space helps to define form areas.

### **3. Typography**

Typography is the art of selecting the most appropriate type face, point size, arrangement, and presentation for the job at hand. Since forms are primarily intended to be communications devices, it is important that the type selected be effective - that means, completely legible, of an appropriate size, and subservient to the variable data that is captured by the form.

## **B. Plain Language**

"Say what you mean and mean what you say." The old adage applies aptly to forms design. The forms designer who avoids using confusing, esoteric, legalese, obscure, superfluous, and techno-jargon text on a form greatly improves the chances of having the form immediately understood by both the writer and the reader. Plain language applies equally to caption text and to instructions for completion and form handling.

## **C. Graphical User Interface (GUI)**

In the case of electronic forms, whether they originate on a local PC or via the Internet, care must be applied to ensure legibility. The natural variations in screen resolution, device peculiarities and viewing conditions forces the forms designer to find the display methods that will suit the widest audience. When a form is easily understood by the user, it is much more likely to be completed correctly on the first attempt.

## **D. Techniques**

A wide variety of methods and techniques is available to the adept forms designer. Identification, selection and application of those that are appropriate is essential to the success of each individual forms project. Again, there is far more to be considered here than merely adding lines and text to a blank page or screen.

## **1. General Layout Principles**

Basic layout principles include appropriate language conventions such as making the form read left to right and top to bottom. Other conventions predict standard information sequences; e.g., Name (Last, First, MI), Street Address, City, State, ZIP Code, Phone, Fax, Cell Number and eMail Address.

### ***a. Zoning***

Gathering related elements of information into groups and positioning them in discrete areas on the form (zoning) adds logic to the form layout. Not having to jump all over the form to find related data fields helps the writer understand the continuity of form requirements and the reader to comprehend more quickly the meaning of the information that is captured and transmitted by the form.

### ***b. Balance***

Balance is primarily an aesthetic element in forms design. When a form "looks easy to use," it is much more likely to be completed correctly by the writer, resulting in a more positive reaction from the reader. Applying the appropriate emphasis to the form elements enhances the success of using the form.

### ***c. Presentation Style***

Beyond the obvious conventions, a series of rules-of-thumb generally apply. For example, the structure of the form (rules, boxes, text captions, etc.) should whisper so that the variable data captured on the form may shout.

### ***d. Spacing***

The spacing rule of thumb states that the length of data capture fields should be dictated by the expected length of the data to be entered, NOT by the size of the field caption. Providing adequate space for the anticipated entries ensures that the form is usable and reduces confusion, frustration and abandonment by the user.

### ***e. Paper and Electronic Integration***

In many instances, particularly during periods of transition, it is possible that a form may exist in more than one format. Users with access to computers may use an electronic version of the form; whereas, users without such access may continue to use the paper version. In other cases, the environment of the user may dictate which version is appropriate; e.g. one user at a desk vs. another user at the top of a utility pole. In all cases, if the ultimate destination of the data captured is the same (e.g., a common database), then it is imperative that the content and sequence match from format to format, even if the presentation methods have been adjusted based on the media employed.

### ***f. Postal Considerations***

One critical analysis question usually asked is whether the form (blank or completed) is to be sent from one location to another via "snail mail." If the answer is affirmative, then several factors must be considered, including the potential use of standard window envelopes, security of the data on the form (confidential information not showing through the window), size (to assure easy fit of the form into the envelope container), weight (to minimize postage costs), and the workflow (on both ends of the transfer).

### ***g. Record and Data Retention Considerations***

While some forms serve a short, temporary purpose, others are retained for historical and legal reasons for long periods of time. Forms that have been completed become records. When those records are to be retained beyond their initial reading, they may fall under the purview of Records Management.

Any time a form/record will likely be filed, care must be given during the design phase to the ultimate filing methods and requirements. Example: if the form is to be filed using a pre-printed consecutive number, then the designer should locate that number appropriately to facilitate filing; e.g., near the upper right corner of the form.

### ***h. Testing and Review***

Prior to its release to users, each form (whether new or revised) must be tested to confirm that it performs as expected; that is - it captures and communicates appropriate data, is understood by both writer and reader, and complements the expected workflow. Thorough forms testing and content review is essential.

## **2. Paper Specifics**

While many layout techniques apply equally to both paper and electronic forms, there are some that are mutually exclusive to each.

### ***a. Caption Placement***

In a paper-based environment, the processing sequence of writing the form is primarily controlled by the user's eyes; e.g., left to right, top to bottom of the page. In contrast, cursor movement on an electronic form, controlled by the designer, can alter that natural sequence flow.

Caption placement on paper forms, then, when consistently applied, aids user understanding of how the form is to be written. Using standard conventions such as upper-left corner captions in boxes, checkboxes always to the left of related captions, vertically-aligned radio buttons, and table structures for repetitive data entries facilitate proper use.

### ***b. Manufacturing Considerations***

Production of a physical medium reflecting the analysis and design of the paper form should use the most appropriate materials and techniques available and be executed in the most economical way possible. Specifications for forms to be manufactured must take into account requirements and restrictions imposed by the manufacturing

equipment and processes. These include product types, materials, margins, bindery functions, packaging, and other physical components that will be part of the manufacturing, transporting, storing, using, filing, and data recovery processes.

#### ***c. Information Suppression***

Information suppression for paper forms requires employing physical measures such as short or narrow sheets, tear-off areas, printed blockouts, desensitized areas on carbonless products, repositioned perforations, and other methods for hiding or eliminating portions of the filled in data from specific subsequent viewers of the form.

#### ***d. Printing Specifications***

Printing specifications for paper-based forms define the materials and operations to be performed to ensure proper functionality for the finished product. Paper weight, type, and color; ink color(s); appropriate bindery functions such as drilling, trimming, binding, gluing and die cutting; packaging, including number of sheets per set, number of sets per book or package, number packages per carton, number cartons per pallet; along with proofing and shipping requirements are all part of the manufacturing specifications. Other factors, such as which copy (layout) goes onto the face or back of which page, pricing, and other contract specifics round out the transaction components.

#### ***e. Pre-press***

Pre-press refers to all the activities necessary to prepare for the production of paper and ink/toner forms. These activities can include preparing art (digital files or hardcopy), transferring the print image via a direct-to-plate process or by creating a negative from the artwork, stripping that negative, and transferring the image from the negative to a plate.

#### ***f. Other***

Special considerations, including bar codes, security features, consecutive numbering, form-label combinations, drop-out inks, and other non-standard features may also become part of the specifications.

### **3. Electronic Specifics**

Although the intent and layout of the electronic form may closely parallel the paper version of the form, specifics differ substantially between the formats.

#### ***a. Interface Design***

Since the electronic form may or may not ever migrate to paper, the user interface with that form requires special consideration.

##### **1. Field Help**

User instructions and help screens may be contained in dropdowns or tool tips that are accessed only when needed by the user, obviating the need to usurp valuable real estate on an electronic form.



## 2. Masks

The format of entries that will be uploaded from the capture document to a database may be controlled through masks, which force format rules, including capitalization, digit population and other conventions.

## 3. Selection Methods

Users may make selections from dropdown lists, mutually-exclusive choice options, field defaults and other methods, as well as by typing in the field data directly.

## 4. Field Formatting

Fields capturing data like telephone numbers, ID numbers, dates and times, amounts and other specific data types may be controlled by the form designer to ensure that the user provides information that is usable in the post-processing workflow.

## 5. Interface Formatting

Ensuring that data from an electronic form interfaces properly with related fields in the business system being fed by the form falls within the control of the form designer. Such interface points may be forced into compliance with the needs of the business application without harming the workflow of the form itself.

## 6. Menu Planning

Careful planning of the contents and positioning of the elements in the menu (list of forms and/or transactional functions to be performed) encountered by the user of a group of electronic forms assures that the appropriate form is selected by the appropriate user and that the appropriate workflow is satisfied.

## 7. Ribbons and Action Buttons

Various workflow functions may be automated for electronic forms. Often, the most effective way to present these options to the user is to provide a series of action buttons. These buttons control such operations as save, print, submit, and send email and while they may be visible on the screen they are not necessarily included when the form is printed.

## 8. Information Suppression

Information suppression is much easier in electronic forms than in their paper counterparts. Screens may easily be devised that simply do not include selected data fields within specific "views" of the form. Workflow controls who, or what application, has access to which information from the form.

#### 9. Development Specifications

Similar to the manufacturing specifications that are required for paper forms, development specifications are required for electronic forms. Specifics about operating systems, form layout, field lengths, database and application interfaces, printers, routing, security, accessibility and other factors are included in the development specifications.

#### 10. Other

Under certain circumstances, other esoteric requirements and/or restrictions may be imposed on electronic forms for policy or legal reasons.

### ***b. Application Development***

The old seven-word adage applies to form systems application development: "Proper Prior Planning Prevents Pitifully Poor Performance." Many components go into the building of an effective forms application. Following are some of the most important of these.

#### 1. Tabbing Order

Cursor controls that dictate the sequence of data fields to be filled in by the writer (also known as the tabbing order) help to ensure that critical information is not accidentally overlooked.

#### 2. Compulsory Fields

Earmarking specific fields as "required" and not permitting final completion of the form's processing any time data is missing from those compulsory fields helps avoid the need for the user to do-over the form, saving processing time in the long run.

#### 3. Data Validation

Techniques are available to forms designers to validate certain types of data, including dates, amount ranges, spelling, data formats and user rights. These should be employed as appropriate.

#### 4. Database Administration

To ensure that the data captured by the form(s) is compatible with the target database(s), the designer must take care to use field names exactly as they appear in related fields in the database(s). Mismatched naming conventions lead to a disconnect between the form(s) and the database(s).

#### 5. Security

Ranging from simple access passwords through various sophisticated methods of data encryption, security within transactions is often critical to the success of

the electronic form. The designer builds in these security features as the forms are being designed.

#### 6. Routing and Tracking

Workflow of the business system may be forms supported by controlling routing of the partially or totally completed form from one user to the next and by tracking the progress of the form within the workflow until its purpose has been satisfied.

#### 7. Decision-Tree Matrices

Another workflow technique that is helpful in designing forms to operate in a business systems is the decision-tree matrix. Simply put, this chart identifies players, prerequisites, actions, correction routines and timing for each portion of the business transaction the forms support.

#### 8. Macros and Scripting

Unlike paper forms, where the workflow is generally manual, electronic forms may include macros which accomplish routine tasks automatically and scripts which facilitate pre- and post-processing tasks.

#### 9. Application Integration

Smooth operation within an application is more likely when the forms used by that application are carefully integrated to avoid operational conflicts.

#### 10. Other

While these are the primary considerations, exceptions prove the rule and must be recognized and honored if the business system is to benefit.

### **III. Technology Principles**

The best analyzed forms and the best designed forms, whether paper or electronic, are useless unless they can be manufactured correctly (paper) or deployed effectively (electronic). Behind the detailed specifications are a series of principles (mostly just good logical sense) that serve as the guiding context for action.

#### **A. Electronic Technologies**

Production for electronic forms differs in many ways from the paper world. For example, electronic forms may remain electronic during their entire life cycle and never be reduced to paper. Many devices and techniques are available when there is a need to create a paper copy of the form.

##### **1. Digital Demand Imaging**

Print-on-demand simply means that an electronic form may be transferred to paper when the need arises. From another perspective, the “printing” of a paper form may be

accomplished through the use of equipment using digital demand imaging in place of a traditional printing press.

## **2. Recognition Systems**

Recognition systems are handy devices that support either the machine reading of data from a completed form or the automatic pre-filling of data onto a form.

### ***a. MICR***

Magnetic Ink Character Recognition (MICR) is most easily recognized when used in banking transactions. The E-13 B font contains only numeric (0-9) and special characters to designate a “transit number field,” “amount field,” “on-us field,” and “auxiliary on-us field.” MICR inks (usually black, but also available in green, brown and red) contain iron oxide pigments which can be magnetized after printing. These magnetized characters are read by electronic recognition equipment

### ***b. OCR***

Optical Character Recognition (OCR) is a system whereby characters written onto a form are read by machines. Special non-reflective “read” inks and reflective “drop out” or “non-read” inks, along with special OCR papers which improve contrast and enhance image clarity, enable the OCR scanning equipment to differentiate data characters from form structure.

### ***c. OMR***

Optical Mark Recognition (OMR) systems employ scanners that read marks located in very specific positions (OMR response grids) on the form. These positions are controlled by “form ID marks” and “timing marks” printed on each page. OMR forms, often referred to as bubble forms, are filled in (marked) manually by the user.

### ***d. Bar Codes***

Bar Codes are available in many formats, but all use a reader to interpret symbol, not usually readable by the human eye. Bar codes may be two dimensional, with relatively simple content, or three dimensional, where content is comparatively complex. Uses vary widely from Universal Product Codes (UPC) used in grocery stores to the Face Identification Marks (FIM) used by the U.S. Postal Service.

### ***e. Other***

Optical Character Recognition (OCR) readers recognize human readable characters as opposed to marks and bar codes. Several OCR fonts are currently in use.

### **3. Post Processing**

Post-processing includes activities such as printing of paper copies for signatures, emailing of data captured by the electronic form, filing and faxing operations and interfaces to databases and other systems.

### **4. Data Merge Printing**

Data merge printing is a method of joining data captured by a form with data contained in another medium, such as a database, to produce a combined document.

### **5. Production Principles**

## **B. Systems Architecture**

One of the major advantages of electronic forms is their role as one component of an automated system made up of various functions and equipment types. These inherent connections, the system architecture, support complex workflows.

### **1. Hardware**

The most physical of the four components of any architecture is the hardware it uses.

#### ***a. Host***

A host is any computer on a network that is a repository for services available to other computers on the network.

#### ***b. Server***

A server is a computer running a program that supports processing actions by individually connected PCs.

#### ***c. Client***

A client is a software program that is used to contact and obtain data from a Server software program or another computer, often across a great distance. Each Client program is designed to work with one or more specific kinds of Server programs and each Server requires a specific kind of Client.

#### ***d. Printers***

A printer is a device connected to an individual PC or to a network that transforms screen images to paper-based images.

#### ***e. Other***

Peripherals are associated devices, such as terminals and routers that are connected and configured to serve specific purposes.

### **2. Operating Systems**

The operating system is the basic organizing technical foundation for running any computer. It contains the code needed to cause actions to happen, connections to be

made, resources to be accessed and retained and the results to be displayed for the human operator.

### **3. Networks**

Networks are structured groups of computer hardware components that support the communication and sharing of data and equipment among multiple computer users. The connections among the components may be hard-wired or virtual.

### **4. Communications Systems**

Communication systems employ specific protocols to facilitate the connections among computers and their users. Email is one of the most obvious examples.

### **5. Application Software**

The use of various application software products provide complementary support for an organization's forms, whether in paper or electronic format. Selection criteria for these products must focus upon need, applicability to the specific situation, and compatibility with the overall system architecture.

#### ***a. Imaging Systems***

Records retention requirements may call for keeping the original transaction document (form), or a copy of it, for some specified period of time. In lieu of retaining the space-consuming paper forms, an imaging system is often employed, through which a photographic copy is retained either digitally or on film.

#### ***b. Forms Composition***

Forms composition, whether in paper or electronic format, is facilitated through the use of software products specifically intended for that purpose. Such products may provide the tools necessary for managing exact spacing, insertion of text and graphics, field mapping, and the ultimate interface with users, printers, servers and other application software, such as databases.

#### ***c. Forms Automation***

Forms automation software may be as narrow in its function as simply supplying a catalog or portal through which users may obtain the forms they need. Or, it may be much broader in scope, including form specifications, a request channel for new or revised forms, catalogs, form- group data, forms kits, inventory control, deployment schemes, costs, development of metrics regarding form users and usage patterns, and various additional reporting functions.

#### ***d. Messaging***

Communication of information is an integral function of electronic forms. Managing the various methodologies used to transmit that data to the appropriate recipients is accomplished through messaging technology.

### 1. Vendor Independent Messaging

Vendor Independent Messaging (VIM) provides a generic path, not associated with any specific software product or technology, for moving data from sender to receiver.

### 2. Messaging Application Programming

When it is appropriate to transmit information collected on forms to various recipients or associated business applications for further processing, the needed methodologies and mechanics are established and implemented through messaging application programming.

### 3. Messaging Handling Systems

When completed electronic forms are to be converted to email or in some other way made available to other systems for further processing, software is needed to manage those processes. That software is referred to as a message handling system (MHS).

## ***e. Database***

A database is a repository where the data collected by business forms is recorded, organized and manipulated into useful information. Databases may also serve as the source of known, previously collected data that can be added automatically to a form to help complete a transaction. Whether formatted as stand-alone tables or more complex relational interpretations, databases serve to provide usable meaning to otherwise disparate data elements.

### 1. Open Database Connectivity

Open Database Connectivity (ODBC) is a standard method for third-party programs to access common databases.

### 2. Structured Query Language

Structured Query Language (SQL) provides a standardized method for extracting and reporting useable and meaningful information from a database.

## ***f. GroupWare***

Software that is shared by multiple members of a working unit is called groupware. It supports online collaboration for teams, projects & communities.

## ***g. Workflow***

Workflow is 1) a sequence of processes (automated or manual) which are subject to specified business rules; and 2) the analysis and optimization of business processes. Completing a form is usually only the beginning of a longer process with varying steps that justify the collection of data and supply the results to one or more systems that are then able to make use of the

information. Studying existing workflows often expose hidden opportunities for improvement by merging, eliminating, or reassigning process steps. By using such studies, processes are often clarified, speeded up, strengthened and their costs reduced.

#### ***h. Electronic Commerce***

A natural extension of the capabilities of electronic forms is their use as the facilitators of electronic commerce – buying and selling goods and services electronically – usually through the Internet. Special care must be applied to the analysis and design phases when developing forms that are to be used in electronic commerce to assure that all necessary and required functions are adequately served. Security, mathematical calculations, electronic signatures, database interfaces, and encryption may be individually or severally appropriate.

#### ***i. Security and Encryption***

Security (prevention of data tampering by a third party) and encryption (encoding the data to require the appropriate key for access) are safeguards that are usually required for electronic commerce and may be needed in other environments. Various techniques, some hardware-based and some software-based, are available to support these challenges.

#### ***j. Multimedia***

Depending upon implementation parameters, the form may need to be deployed in more than one format (as multimedia) – that is, as a paper form and as an electronic form – to facilitate its use in disparate situations and environments.

#### ***k. Document Management Systems***

Document management systems are used to organize and track form deployment, availability, usage, revision, version control and system interface points.

## **IV. Forms Management**

Definition - FORMS MANAGEMENT:

the systematic process of increasing productivity and minimizing errors in information capture, transmission, and recovery through the use of workflow analysis and graphic design techniques; providing administrative control  
reducing procurement, storage, distribution, and use costs through standardization; and ensuring the adequacy, business as well as legal, of all historical records.



## **A. Work Skills**

The work skills required by a truly effective Forms Management Program (FMP) are many, varied and quite broad in scope. While what has been called "Forms Control" (consisting essentially of inventory procurement and management) may be a significant component of the program, other skills, talents and techniques are equally critical.

### **1. Cost Benefit Analysis**

One of the more obvious requirements of a good FMP is the fiduciary responsibility to contain and reduce costs. Understanding the mechanics and application of the cost benefit analysis is essential to that end.

### **2. Consultation**

Assumptions are dangerous. It is incumbent on the Forms Management staff, therefore, to offer advice and council to those who need forms developed or revised to ensure that a useful tool is developed. Such consultation helps to guarantee that the form meets the real need of the business system it serves.

### **3. Work Group Development**

When the functionality of a form crosses departmental or operational lines within the business environment, it is essential for all stake-holders to participate and buy-in to the final form. This work group should not attempt to execute the design layout, itself, but they do need to participate actively in the workflow discussion to ensure the form's effectiveness.

### **4. Customer Service Techniques**

The role of the Forms Management Program is one of service to the organization. Customer service techniques include responsiveness, accuracy, timeliness, sound advice, and respect for the needs and desires of the user community and the organization.

### **5. Scheduling and Prioritizing**

Scheduling (setting a specific time to accomplish a series of tasks) and prioritizing (performing tasks in the appropriate sequence) are indicators of strong organizational skills. Procrastination and "doing the easy job first" can quickly lead to lost focus and momentum.

### **6. Ethics**

Consistently doing what is appropriate and fair reflects a strong sense of ethics within the program and enhances the level of respect it earns from Forms Management Program users.

### **7. Interviewing**

Genuine interest displayed while interviewing current and future forms users engenders not only respect from those users, but also keeps the forms manager from working in a

vacuum. No one knows better how the form should perform and what it must accomplish than those who use it.

### **8. Training**

Assuming that a form has been created based upon a sound understanding of the workflow surrounding it, the users must clearly understand its purpose and may require training in its proper use.

### **9. Negotiating**

Negotiating takes on many faces. Besides the interfaces between forms management and their vendors (regarding specifications and costs), there may also be occasion to navigate compromise among users and, in some cases, with the organization's legal authorities.

### **10. Presentations**

When the analysis is completed and the next step is forms design, it is often appropriate to present the results of the analysis and the proposed layout for the form to the work group that collaborated on the content and function of the form. Such presentations should be short and to the point.

### **11. Project Management**

Good project management assures that all the appropriate steps in the process, from the initial investigation phase through deployment or manufacturing of the final forms design, are successfully completed by the responsible individuals in a logical sequence and in a timely fashion.

### **12. Environmental and Safety Awareness**

Environmental and safety awareness includes limiting toxic waste by-products from forms, such as carbon papers, whenever possible, and assuring that the proper risk reducing materials are used for tag and label items.

## **B. Administration**

Effective and efficient control of the forms management program requires thorough knowledge and technical dexterity to support the administration of the numerous inherent operational functions.

### **1. Version Control**

Regular maintenance of forms keeps business systems operating at optimum efficiency. Version control assures that only the most current edition of each form is available for use.

### **2. Identification Systems**

The basic form numbering scheme serves as the proper identification tool for each item in the system. Form groupings (kits) and other specific categorization indicators (e.g.,

product types, business functions, etc.) are also common and must be carefully maintained to assure their accuracy and usefulness.

### **3. Filing Systems**

Filing systems serve various purposes, including the general forms file (specifications, samples, notes, etc.); purchase order history files (requisitions, receiving reports, etc.); warehouse and distribution reports; related forms files (e.g., an invoice and its accompanying envelope); procedures and other miscellaneous file types.

### **4. Software Distribution and Management**

The selection of distribution and forms management software is not to be taken lightly. There are many critical components involved in the decision-making. Some considerations include (but are not limited to): leveraging current technology (hardware); evaluating and prioritizing desired functionality (software); software licensing; software upgrades; identifying and understanding the availability of resources (IT)/support and their associated costs; product and end-user testing; and department and end-user training.

### **5. Warehousing and Distribution**

Warehousing and distribution of paper forms must be carefully monitored to assure availability of a steady supply of forms and easy access to those forms by users. Whether there is a desk-top delivery system in place, a mail-based requisitioning system or a will-call window for personal form pick up, records must be kept of the number and frequency of forms distributed. This will facilitate timely re-ordering and stocking activities.

### **6. Management Reports**

On-going support for a forms management program often depends largely upon upper management's comfort level that the program is worthwhile and that the return on investment is adequate. One way to maintain firm trust in the program is to provide management reports on a regular basis. Various performance metrics, such as number of forms in the system, new forms vs. revisions, number of requisition per period, costs expended vs. costs saved, etc., are typical reporting areas.

### **7. Standards**

Standards: the consistent, logical and accepted way of performing specific tasks; of executing general form layouts; of placing text and graphics on a form; of preparing documentation and specifications; of managing production, stocking and distribution of supplies; of deploying electronic forms; of presenting management reports; and of controlling costs. These are representative of the various tasks and techniques that, when done according to defined practice guidelines, help to foster and operate a strong forms management program.

## **8. Tracking**

Traffic management is an important function of the FMP manager. That includes tracking the progress of various analysis projects, of vendor manufacturing orders, of warehouse inventories, of the forms portal database, of the various FMP databases, of strategic management reporting metrics and many other on-going processes.

## **9. Operational Procedures**

"S.O.P." should mean "Standard Operating Procedures," not "Seat Of Pants," when referring to how the program runs. There is much less room for variation (and error) when operational procedures are formalized and documented in writing to simplify reference by anyone with a need to know.

## **10. Records and Data Retention**

Forms Management has long been closely associated with Records Management and, in some organizations, is an associated function within the same department. Recognition and adherence to records retention schedules applies to the form files and to the maintenance of data records such as management reporting metrics.

## **11. Obsolescence**

A reasonable rule of thumb states that when a form has seen no usage nor requests for modification within a defined period of time, it may be declared "obsolete." The obsolescence criteria is defined individually within each Forms Management Program. Even though a form becomes obsolete, its form number should never be reused and its history records should not be destroyed, since it is always possible the form may be reactivated at some future date.

## **12. General Record Keeping**

General record keeping procedures should be defined in the FMP documentation and checked periodically to assure compliance.

## **13. Forms Libraries**

Form libraries may be as simple as a single copy of each form in the system in a centralized file and as complex as discrete files containing specific groups of forms, e.g., all paper forms or all electronic forms, or all forms for a certain business process. They may be physical files and/or electronic files, or a combination of both. They may contain samples, specifications, historical records, inventory records and other documents and be generally accessible or they may be restricted to forms department personnel only. Departmental procedures govern these files.

## **14. Business Continuity**

Business continuity is the overall process of developing an approved set of arrangements and procedures to insure your business can respond to a disaster and resume its critical business functions within a required time frame objective. It is an ongoing process to plan, develop, and implement disaster recovery procedures to

ensure the optimum availability of the critical business functions. The primary objective is to reduce the level of risk and cost to you and the impact on your staff, customers and suppliers.

### **15. Implementation**

Implementation involves establishing the tools and processes and procedures to support policies required to ensure the success of a forms management program. Implementing steps and strategies may involve team activities, flow-charting, fact-finding, etc. Choosing the right resources during the implementation process will result in good workflow and desired results.

### **16. Other**

Other functions may be considered integral parts of the administration of a forms program. These other activities may include personnel management (hiring, training, performance reviews, firing); participation on various management teams (workflow improvement projects, implementation teams for new systems, etc.); or any other miscellaneous assignments from higher management levels.

## **C. Procurement**

Procurement is the process of obtaining materials and services needed by the organization. An awareness of the broad spectrum of functions and activities required to guarantee success is essential.

### **1. Supplier Relationships**

Suppliers are those who are outside the department but furnish products and/or services needed by the organization. Maintaining cordial supplier relationships helps to assure that the information available from each supplier is complete and accurate and that the best interests of your organization are served.

### **2. Product Evaluation**

When a new requirement is identified that may be able to take advantage of a product that is also new, or is currently unused by the organization, it is prudent to conduct a product evaluation to confirm the appropriateness of the product, whether physical or electronic, as a solution for the environment where it is proposed.

### **3. Quotations and Proposals**

Prior to placing a manufacturing contract or purchasing software or services, it is wise to request a quotation or proposal from the potential vendor. Even when the vendor is known and has provided products and/or services in the past, each new requirement should be handled the same way. Formalizing the quotation and/or proposal process ensures that nothing is assumed or left to chance and that all legal bases are covered adequately.

#### **4. Contract Negotiating**

Long term relationships with vendors (beyond a single order) are common in the forms industry. Negotiating contracts should spell out price levels, manufacturing locations and delivery times, manufacturing specifications for products, vendor warehousing and storage costs, on-site services (such as periodic inventory counts), other services available, associated legal agreements, and any other routine interface that may be involved. These components encourage a strong and equitable vendor relationship.

#### **5. Trade Customs**

Trade Customs codify the standard terms and conditions under which the relationship between the customer and the printing vendor operate. Many topics are included.

Exceptions, if any, must be individually negotiated between the parties.

Reference: [http://www.essociatesgroup.com/enformation\\_central/default.htm](http://www.essociatesgroup.com/enformation_central/default.htm)

### **D. Inventory Management**

By and large, inventory management systems relate specifically to paper forms, since there is no physical inventory of electronic forms. Techniques for maintaining inventory varies from stock on warehouse shelves to some variety of stockless inventory.

#### **1. Automated Systems**

Using a computer-based system for tracking inventory is useful for any form of inventory control. Automated systems provide quick accessible and timely information regarding inventory status. Statuses includes on order, en route, vendor stocked, on-site stock, off-site stock, shipped, back ordered, and obsolete.

##### ***a. Barcoding***

One handy way to track inventory on hand is through the use of bar codes. Depending upon the content of the bar code , such information as form number, edition date, production date, vendor identification, form effective date, do-not-use-after date, package quantities, limited manufacturing specifications and other data elements can be included.

##### ***b. Just In Time (JIT)***

Just-in-Time (JIT) is an economical method of controlling inventory costs. Forms are not stocked in a warehouse in the traditional way, but are produced as needed in the quantities needed at or near the locations where they will be used.

##### ***c. Freight Optimization***

One technique for reducing shipping costs is the application of freight optimization principles. This entails knowledge and coordination of the production of multiple forms inventory items in the same manufacturing plant; then combining them into a single shipment. This process can as easily be applied, as well, to shipping items from a warehouse to one or more using

locations in similar combinations. Not only does the freight arrive together, but also the warehouse handling of that freight is streamlined - both of which save costs.

***d. Other***

One other technique for tracking inventory bears mentioning. RFID (Radio Frequency Identification) labeling provides an electronic signal identifying each package, its contents and whatever other information may be included in its coding.

**2. Forms Fulfillment**

In addition to the traditional method of supplying forms to users in response to their own inventory requisitions, it may be appropriate - especially when one or more forms are new and immediate wide deployment is necessary - to distribute a base supply of each item to each the expected users (or departments) without their first submitting a requisition. Forms fulfillment methods should be flexible enough to satisfy both routine and special situations.

**3. Print-on-Demand**

Print-on-Demand (POD) is similar to just-in-time production, except that usually the user produces the production is done locally by the user who needs the form.

**4. Receiving**

Management of inventory begins upon receipt of the forms stock. Receiving activities require accepting shipments, accounting for and matching quantities listed on shipping documents from the shipper, decisions regarding where stock is to be located, stock rotation activities where appropriate, and filling of existing back orders.

**5. Inventory Control**

Avoiding stock-out situations is a key component of a good inventory control system. Maintenance of accurate records reflecting all receipts, stock locations, distributions, destructions and reorders is critical.

**6. Shipping**

Shipping activities are usually categorized into three basic scenarios: 1) shipments to users to fill requisitions, 2) shipments between warehouse locations to balance stock levels and 3) return-to-vendor shipment when an error is discovered or for some other reason stock must be returned. Needless to say, accurate records must be kept of each transaction and inventory levels adjusted accordingly.